

# Envisioning the Future of Communication

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DIGITAL MEDIA & TELEVISION RESEARCH CENTRE AND  
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**Communication & Digital Media Dpt**  
UNIVERSITY OF WESTERN MACEDONIA · GREECE

Let the forest and its green shades  
Whisper the secrets of  
Nature's eternal dance

# ENVISIONING

THE FUTURE OF COMMUNICATION

CHALLENGES · TRENDS · OPPORTUNITIES

*Proceedings*  
**EFoC, Vol. 2**  
**2025**

**2023  
SCIENTIFIC  
CONFERENCE**  
KASTORIA, GREECE

**EDITORS:**  
M. Matsiola, S. Poulakidakos  
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## Foreword to the volume

Stamatis Poulakidakos\*

The second volume of "Envisioning the Future of Communication" presents a comprehensive exploration of key topics at the forefront of communication research. This collection stems from the 2nd International Conference entitled "Envisioning the Future of Communication II: Challenges – Trends – Opportunities," held in Kastoria, Greece, on 11-12 December 2023, under the auspices of the University of Western Macedonia and the Department of Communication and Digital Media. The conference's proceedings reflect the dynamic and interdisciplinary nature of contemporary communication studies, offering novel insights into emerging challenges, opportunities, and theoretical advancements. The volume is organized into seven thematic sections, each of which addresses a distinct and critical aspect of communication research. Together, these themes contribute to a holistic understanding of the evolving landscape of communication in the 21st century.

### **Section 1: Emerging Trends in Digital Communication, Media, and Society**

This section addresses the transformative impact of digital technologies on communication practices and societal interactions. Topics range from intelligent data processing in sports media to the intersections of digital media, consumer culture, and urban spaces. The contributions emphasize the importance of understanding how technology reshapes lifestyles, cultural spaces, and media consumption patterns. This section underscores the need for innovative frameworks to analyze and adapt to these rapid changes, making it essential for scholars and practitioners aiming to stay ahead in a digitally driven world.

### **Section 2: Data-Driven Innovations in Modern Societies**

The second thematic area delves into the growing role of data in communication and societal development. Papers in this section explore the visualization of environmental data, the integration of IoT technologies in public spaces, and the communicative potential of the metaverse. These studies highlight the transformative power of data and technology in addressing environmental, social, and technological challenges. This section is particularly relevant in an era where data-driven solutions are pivotal for sustainable development and digital innovation.

### **Section 3: Artificial Intelligence and the Evolution of Journalism in the Digital Age**

Artificial intelligence (AI) has become a game-changer in the field of journalism, and this section explores its multifaceted implications. Topics include AI's role in news production, the rise of mobile journalism during the COVID-19 pandemic, and the challenges of regulating AI in media. By examining both the opportunities and ethical dilemmas posed by AI, this section

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provides critical insights into how journalism can adapt and thrive in the digital age. It highlights the need for regulatory frameworks and ethical guidelines to navigate the complexities of AI-driven media environments.

#### **Section 4: Public Engagement, Misinformation, and Current Trends in Journalism**

Misinformation and fake news are pressing issues in contemporary media landscapes. This section investigates the mechanisms behind the spread of misinformation, the role of online communities in fostering a sense of belonging, and the impact of predictive journalism. By addressing these challenges, the contributions in this section emphasize the importance of fostering media literacy and public engagement to combat the negative effects of misinformation. This thematic area is crucial for understanding the evolving relationship between journalism and its audiences in a fragmented media ecosystem.

#### **Section 5: Political Communication, Leadership, and Crisis Management in Public Discourse**

In an era of political polarization and global crises, effective communication strategies are more critical than ever. This section explores narratives of sustainability, sentiment analysis in political dialogues, and leadership's communicative dimensions during crises. These studies shed light on how communication can influence public opinion, manage crises, and shape political discourse. By integrating theoretical and practical perspectives, this section offers valuable insights into the role of communication in addressing contemporary political and societal challenges.

#### **Section 6: Media in the Digital Era: Bridging Communication, Education, and Culture**

The sixth thematic area focuses on the intersections of media, education, and culture in the digital age. Contributions explore topics such as the ethos of Generation Z through music and radio, the convergence of public and private spheres, and the role of media literacy in bridging communication and education. This section highlights the cultural and educational implications of media technologies, emphasizing their potential to foster inclusivity, creativity, and critical thinking. It is a vital resource for understanding how media can act as a bridge between diverse societal domains.

#### **Section 7: Media Representations of Social and Political Issues**

The final section examines how media represent and frame social and political issues. Case studies include the framing of Greece's deadliest migrant shipwreck, the portrayal of femininities in international scandals, and the media's role in shaping perceptions of political debates. These studies underscore the power of media narratives in influencing public opinion and social norms. By critically analyzing media representations, this section contributes to a deeper understanding of the societal impact of communication practices.

All in all, this volume offers a wide range of research that addresses the multifaceted dimensions of communication in a rapidly changing world. By exploring emerging trends, technological innovations, and societal challenges, the proceedings provide valuable insights for scholars, practitioners, and policymakers. Each thematic section contributes to a broader understanding of how communication shapes and is shaped by the complexities of the modern era. This collection is not only a testament to the diversity and depth of contemporary communication



research but also a call to action for continued exploration and dialogue in this ever-evolving field.

## Keynote Speech 1

# Envisioning Social Justice as a Communicative Framework: Communicology Ethics in a Post-Truth World through Theory and Praxis

Anastasia Christou \*

The talk aims to draw attention to the grappling with concepts and contemporary issues in communications studies during a post-truth context as an exploratory process of delving into one of the most significant paradigm shifts in public discourse. Post-truth politics have exacerbated cultures of fear, the blurring between truth and falsity, as well as enabling deliberative strategies of lying to become a central concern in public life and academia. Such occurrences are especially potent in how new communications and social media technologies are operationalised. Post-truth environments appeal to emotionalities and fragile belief systems, frequently devaluing scientific expertise and such social vibrations have significant implications far beyond communications in how politics and social justice are challenged by the historicity of contempt for expert opinion.

This presentation will explore through an interdisciplinary and theoretically informed overview the social and communicative dimensions of a socially just world by taking a communicative framework that centres ethics, acting, organising, resisting and rejecting as a set of tools that not just visualise, but also, craft the foundations for equitable and just societies.

Some of the key questions the presentation will address are the following:

- Do academics/activists have a special role to play as public historians in preserving public memory from ‘alternative facts’? And,
- Do academics more generally have an obligation to combat fake news/fake history within universities, social media and publics?

Looking at theoretical dimensions and some case studies from around the world, this presentation will ultimately question the violent potential of post-truth societies and how futurities of social justice can be imagined as resistance to dystopian potentialities.

In the era of Donald Trump and Brexit, Oxford Dictionaries had declared “post-truth” to be its international word of the year. The US election and EU referendum drive popularity of the adjective describing a situation ‘in which objective facts are less influential than appeals to emotion’.

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So, ‘post-truth’ was nominated word of the year by Oxford dictionaries in 2016, to describe ‘circumstances in which objective facts are less influential in shaping public opinion than appeals to emotion and personal belief’. A year later, Collins dictionaries declared ‘fake news’ to be the next word of the year, to refer to ‘false, often sensational, information disseminated under the guise of news reporting’. The concern with truth – or indeed its absence – was largely triggered by two political events in 2016 that had global ramifications and that arguably involved an unprecedented extent of deception and misinformation: the Brexit referendum in the UK and the election of Donald Trump in the United States. Editors said that use of the term “post-truth” had increased by around 2,000% in 2016 compared to the year before.

Oxford Dictionaries’ word of the year is intended to “reflect the passing year in language”, with post-truth following the controversial choice the year before of the “face with tears of joy” emoji. The publisher’s US and UK dictionary teams sometimes plump for different choices – in 2009 the UK went for “simples” and the US for “unfriend”; in 2006 the UK went for “bovvered” and the US for “carbon-neutral” – but in 2016 teams on both sides of the Atlantic chose the same word. Contenders for the title had included the noun “alt-right”, shortened from the fuller form “alternative right” and defined as “an ideological grouping associated with extreme conservative or reactionary viewpoints, characterised by a rejection of mainstream politics and by the use of online media to disseminate deliberately controversial content”. First used in 2008, its use “surged” that spring and summer, said the dictionary, with 30% of usage in August alone. Brexiteer was also in the running for the prize, along with non-political terms including coulrophobia, the fear of clowns, and hygge, the Danish concept of cosiness.

But the increase in usage of post-truth saw the term eventually emerge ahead of the pack. “We first saw the frequency really spike this year in June 2016 with buzz over the Brexit vote and Donald Trump securing the Republican presidential nomination. Given that usage of the term hasn’t shown any signs of slowing down, I wouldn’t be surprised if post-truth becomes one of the defining words of our time,” predicted Oxford Dictionaries president Casper Grathwohl.

“It’s not surprising that our choice reflects a year dominated by highly-charged political and social discourse. Fuelled by the rise of social media as a news source and a growing distrust of facts offered up by the establishment, post-truth as a concept has been finding its linguistic footing for some time.”

According to Oxford Dictionaries, the first time the term post-truth was used was in a 1992 essay by the late Serbian-American playwright Steve Tesich in the Nation magazine. Tesich, writing about the Iran-Contra scandal and the Persian Gulf war, said that “we, as a free people, have freely decided that we want to live in some post-truth world”.

“There is evidence of the phrase post-truth being used before Tesich’s article, but apparently with the transparent meaning ‘after the truth was known’, and not with the new implication that truth itself has become irrelevant,” said Oxford Dictionaries. The publisher pointed to the recent expansion in meaning of the prefix “post-”, saying that “rather than simply referring to the time

after a specified situation or event – as in post-war or post-match”, in post-truth it had taken on the meaning of “belonging to a time in which the specified concept has become unimportant or irrelevant”. The nuance, it said, originated in the mid-20th century, and has been used in formations such as post-national (1945) and post-racial (1971).

Post-truth has now been included in OxfordDictionaries.com, and editors will monitor its future usage to see if it will be included in future editions of the Oxford English Dictionary.

Writing a keynote speech for a conference that celebrates/interrogates/explores the ‘future’ of something, in this case communication, a paramount activity of human interaction, is always a challenging endeavour, but especially so in turbulent times. We are aware that generations of scholars have tended to believe that they are facing unprecedented change, have seen theirs as a time of disruption, as being on the verge of something entirely new, still hidden in the fog. More or less, the post-pandemic context has left many of us in a state of permanent brain-fog with medicalised and social implications of the term. Without resorting to exaggeration or hysteria, however, we have good reasons to diagnose our current time as unsettled: enormous challenges lie ahead, for example, halting the destruction of our planet and providing a relatively safe space for generations of all and especially those forcefully displaced people to live. All these challenges have an organizational dimension. They call for more research on the organizing, the organized and, indeed, the disorganized and the unsettled. They lay open massive fields of work for critical researchers, not only to provide insights that positively contribute to addressing them, but also to help us comprehend what is happening and the power dynamics entangled and embedded within these social, cultural, political and policy local and global processes.

At the same time, however, a series of humanitarian and financial crises, and most recently a pandemic and a number of wars, have shaken trust in our core institutions and organizations, including universities, and add to a longstanding trend that challenges our understanding of the world and how we inhabit it. We have come to the point at which alternative realities that defy the most basic consensus on our everyday life world proliferate and spread worldwide. The opportunities afforded by new technologies and big data, rather than providing a more solid basis for theory building and decision making, are undermining belief in scientific and professional expertise. Rather, as Swidler (1986, p. 278) highlighted, ideological activism thrives and myths play a powerful role shaping social life during unsettled times. If, following Luhmann (1992), truth is the symbolically generalized communication medium of science and the distinction between true and untrue is its *Leitdifferenz* (leading difference), unsettled times provide even more precarious conditions for the possibility of knowledge and the credibility of knowledge claims and their producers.

We are said to live in a post-truth world. The label itself is, in fact, a sign of our times, in which everything tends to be considered in binary terms: fake as the opposite of true news; right as the opposite of left policies; science as distinct from fiction; us versus them. Grey areas of compromise, once the quintessential skill of every organizational, social and political actor

(Fumurescu, 2013; Gutman & Thompson, 2012), have become perilous to the point of constituting the threshold of what counts as human (Levi, 1986). The more one knows about the way science works, the more one understands that doubt rather than certainty, and dissent rather than consensus animate researchers (Lyotard, 1979; Woolgar, 1988; Berger & Zijderveld, 2009), that openness rather than closure and the rejection of an ultimate authority are the ground rules for scientific knowledge (Rauch, 2021). Imaginative speculation and inquiry, the very essence of research, happen in grey areas but inhabiting that space no longer makes science legitimate. As the recent pandemic has shown, science is being called upon to deliver unequivocal truths, and when it delivers doubts instead, people wonder how little difference there is between politics and science. This is why rulers of various ‘institutions’ – from politicians and states to scientists and universities, passing through discourse of argumentation – have lost their unquestioned authority and legitimacy. Rather than being a new condition, however, it is a path that we have been walking for quite some time and one that, some argue, had already begun with the invention of the printing press, whereby authors lost their authority (Barthes, 1967/2002; Foucault, 1969/1984). Think about Collins and Yearley’s (1992) criticism of the reflexive approach of the sociology of scientific knowledge (SSK): ‘Typically [...] the sociologist knows less than the natural scientist, while the sociologist of science knows still less. Those engaged from day to day with the problem of reflexivity would, if they could achieve their aims, know nothing at all. We might say that the sociology of scientific knowledge has opened up new ways of knowing nothing.’ (p. 302) This problem, they continue, inevitably destroys the possibility of any knowledge – an argument that provoked the same type of critique they voiced (Roth, 1994). But knowledge must not be confused with numerical objectivity or statistical probability. Knowledge is always a journey into the unknown and a battle to reach unreachable peaks. This battle is fought not only by the sociology of scientific knowledge; communication theorists, we could add, are equally well versed in it. If we engage in it, it could be claimed that academics are somehow accomplices in making the concept of post-truth travel from journal articles to the mainstream press and into social media – accomplices also in providing arguments that inform the logical underpinnings of various movements that deny the importance of expertise and science. Some of these movements even challenge the basic, commonly taken-for-granted *Lebenswelt* (Schütz & Luckmann, 1975/1989) as a matrix of conspiracies veiling an alternative truth that is seen only by a small ‘enlightened’ group. This was clearly not intended, but there is no doubt that the genie is now out of the lamp and we cannot put it back in.

Recent events, from the pandemic to past (and likely future) global financial and local economic crises, reveal the fallacies of science as a predictive practice, and the relevance and validity of communication studies to make sense of ambiguities. We do not live in a world where science dominates nature, and markets act as near-perfect mechanisms of valuation, but rather in a world of crowd and political rationalities, and of complex serendipities. To be sure, the pandemic has shown the power of science and technology; but it has also demonstrated their limits. It has shown how science has informed politics, but also how politicians have used

science and scientists to their own ends and to avoid facing the very essence of dealing with social issues: the need for judgement. Communication ethics is of paramount relevance in this domain. Just as the atrocities of World War II decreed the end of modernity (Arendt, 1973), the pandemic should surely constitute a moment to reflect, if not on the end, on the need to rethink globalization, capitalism, the imperative of growth, our relationship with our planet and how we want to be linked together in ‘socie-ties’ (Latour, 2005). Communication scholars were right all along. But what do we do with this victory? Are policy and decision makers aware of the value of this conceptual work? How do we ensure that it does not turn out to be a Pyrrhic victory?

And a brief parenthesis to contextualise the term: A Pyrrhic victory is a victory that inflicts such a devastating toll on the victor that it is tantamount to defeat. Such a victory negates any true sense of achievement or damages long-term progress. A pyrrhic victory is a victory that comes at a great cost, perhaps making the ordeal to win not worth it. It relates to Pyrrhus, a king of Epirus who defeated the Romans in 279 BCE (before the common era) but lost many of his troops. Pyrrhus (Greek: Πύρρος Pýrrhos) was born in either 318 or 319 BCE, only five or six years after the death of his second cousin Alexander the Great in 323 BC. He was born into the Molossian tribe, one of the three Greek tribes together with the Thesprotians and the Chaones who unified the kingdom of Epirus. The Chaonians (Ancient Greek: Χάονες, romanized: Cháones) were an ancient Greek people that inhabited the historical region of Epirus which today is part of northwestern Greece and southern Albania. Together with the Molossians and the Thesprotians, they formed the main tribes of the northwestern Greek group.

And, closing the parenthesis, back to our communicology connections, if truth were fiction anyway, and any construction of a reality were equally valid, Luhmann’s true/untrue codes would become indistinguishable, subject to individual choice, or a matter of popular vote. This road would indeed lead toward knowing nothing (but not in the Socratic dialogic sense) rather than making the need to investigate this void the very reason for our existence as researchers and communication scholars. This is a dangerous journey that would debilitate not only communication research, but also the legitimacy of academia that simply. This type of nothingness opens the door for new and old populist ideologies to fill the emptiness. Truth instead is a constant struggle to interrogate this ephemeral nature of knowledge and questioning its constant becoming through nurturing dialogue, disputes, curation, explanation, and love for researching what is intrinsically transient.

The questions many communicologists have asked and that remain as valid as ever are what and how can we claim to know while simultaneously acknowledging that all knowledge is from this world, embedded in a historical and cultural a priori, positioned and embodied, and hence political in its very production? How can we defend the quest for knowledge without retracting into the rule of a single, authoritative and final truth nor falling into the trap of vacuous relativism? What chances do we have to defend intellectual pluralism while fighting off the great destructive force of arbitrariness that leaves nothing but ruins? How can a lack of solid

ontological grounding become the territory of an academic debate that is still worthy of the name, rather than leaving us with nothing to anchor even this debate? And, just to clarify, communicology is the scholarly and academic study of how people create and use messages to affect the social environment. Communicology is an academic discipline that distinguishes itself from the broader field of human communication with its exclusive use of scientific methods to study communicative phenomena.

Although a researcher may also be an engaged policy advisor or activist, obviously not every such act performed by a researcher qualifies as research. Moreover, uncomfortable truths are not the currency that wins elections; and truth becomes incontrovertible only when instrumentalized to work in power's service. As Hannah Arendt (1961/1993) so powerfully emphasized, we forfeit our position and with it our credibility if we try to interfere directly in politics. Research remains most credible if it remains distant from the desire to exert power directly or to praise those with resources. By no means does this separation of roles catapult researchers back into their infamous ivory tower or demand that they remain silent. Rather, we are emphasizing that, as researchers, we have multiple tasks and multiple constituents, but not all of these tasks are accomplished and not all constituents addressed in the same fora. One forum is obviously the classroom, where we teach future leaders, policy makers and decision makers. There are also many fora where public intellectuals need to share their research insights in public debates. But the place where scientific insights are presented, debated and validated is in academic outlets – journals and books – thanks to the work of academic peers in the roles of writers, reviewers, readers and editors. The scientific quality of academic insights is to be judged by peers, and by peers only.

Undeniably, the study of history in a Post-Truth World along with communication theory and social justice Praxis explores one of the most significant paradigm shifts in public discourse. A post-truth environment that appeals primarily to emotion, elevates personal belief, and devalues expert opinion has important implications far beyond Brexit or the election of Donald Trump, and has a profound impact on how history is produced and consumed. Post-truth history is not merely a synonym for lies. We would argue that indifference to historicity by both the purveyor and the recipient, contempt for expert opinion that contradicts it, and ideological motivation are its key characteristics.

Taking a multidisciplinary approach, this kind of conceptual work explores some of the following questions: What exactly is post-truth history? Does it represent a new phenomenon? Does the historian have a special role to play in preserving public memory from 'alternative facts'? Do academics more generally have an obligation to combat fake news and fake history both in universities and on social media? How has a 'post-truth culture' impacted professional and popular historical discourse? Only by scrutinising theoretical dimensions and case studies from around the world, can we explore the violent potential of post-truth history and call on academics and activists to resist.

I now turn to the second thematic area of my talk, that of ‘Communicative Praxis and Spaces of Subjectivities’.

This area spans the fields of philosophy and communication, illustrating how the amalgam of discourse and action, and language and social practices, is constitutive of the way that we define ourselves and makes sense of the world in which we exist.

This approach provides an elaboration of an original concept in which communication and praxis are commingled, which allows discourse and action to be viewed as twin halves of the constitution of meaning in our personal and social existence. The interwoven texture of discourse and action and language and social practices accommodates novel notions of reference, self-implicature, and rhetoric. These notions are developed against the backdrop of an entwined hermeneutical understanding and explanation. Communicative praxis is multifaceted saying, writing, and doing that is about something, by someone, and to and for someone.

The interlacing moments of hermeneutical reference, self-implicature, and rhetoric display an interface of the fields of philosophy and communication studies. The economy of communicative praxis is stimulated by the forces of philosophical analysis and interpretation coupled with an acknowledgment of the transactional dynamics in the rhetoric of the ongoing community of investigators and concerned citizens. The art of thinking, which philosophers—by mandate of their tradition—have been called upon to develop, proceeds hand in glove with the contextuality of thought as it emerges from the rough and tumble of everyday social and political interactions. It is thus that Communicative Praxis and the Space of Subjectivity can properly be viewed as conceptual work that integrates the disciplines of philosophy and communication studies in such a manner as to enrich the contributions of each.

In 2017, James Ball published a book entitled: *Post-Truth: How Bullshit Conquered the World*. London: Biteback Publishing. As the author contends: “Bullshit gets you noticed. Bullshit makes you rich. Bullshit can even pave your way to the Oval Office. This is bigger than fake news and bigger than social media. It’s about the slow rise of a political, media and online infrastructure that has devalued truth. This is the story of bullshit: what’s being spread, who’s spreading it, why it works – and what we can do to tackle it.”

So, going to this issue of ‘de-valuing truth’, I want to focus on another study, fresh off the print, a recent publication (2023) by academics based at the University of Linköping, Sweden, in the *Journal of Research in Personality* by Julia Aspernäs, Arvid Erlandsson, Artur Nilsson, entitled: “Misperceptions in a post-truth world: Effects of subjectivism and cultural relativism on bullshit receptivity and conspiracist ideation”.

The highlights from that article are the following:

- We find two forms of truth relativism: subjectivism and cultural relativism.
- Subjectivism yields higher receptivity to misinformation than cultural relativism.



- Subjectivism predicts receptivity to misinformation over and above other predictors.
- Cultural relativism is positively related to bullshit receptivity.

So, back to bullshit, and I don't mean this study in Sweden and the UK which is quite informative, instead, I wish just to highlight the empirical aspects of the study:

This research investigated whether belief in truth relativism yields higher receptivity to misinformation. Two studies with representative samples from Sweden (Study 1, N = 1005) and the UK (Study 2, N = 417) disentangled two forms of truth relativism: subjectivism (truth is relative to subjective intuitions) and cultural relativism (truth is relative to cultural context). In Study 1, subjectivism was more strongly associated with receptivity to pseudo-profound bullshit and conspiracy theories than cultural relativism was. In Study 2 (preregistered), subjectivism predicted higher receptivity to both forms of misinformation over and above effects of analytical and actively open-minded thinking, profoundness receptivity, ideology, and demographics; the unique effects of cultural relativism were in the opposite direction (Study 1) or non-significant (Study 2).

Furthermore, academics and activists may want to look more closely at the connection between subjectivist beliefs and dogmatic views. The positive association the researchers found between subjectivism and dogmatism could seem surprising, as subjectivism seems to entail that every individual has a “right” to their own “truth” which, at face-value, seems less dogmatic. Dogmatic relativism may seem like a contradiction in terms, but the study findings suggest that it is a real and under-researched psychological phenomenon.

This research demonstrates that truth relativism is a unique predictor of belief in conspiracy theories and receptivity to pseudo-profound bullshit. It shows that the belief that truth is no more than a subjective intuition is likely to be more harmful, yielding higher vulnerability to misinformation and lower likelihood of deliberative scrutiny of evidence, compared to the belief that truth is relative to cultural context. Future attempts to understand why people fall for misinformation should take the role of epistemic beliefs concerning the nature of truth into consideration.

And, now to the third and last layer of this talk, let's focus on social justice through communicology ethics in a post-truth world, by bridging theory and praxis, and finally, I will conclude with what can be done in the current global context to envision change.

The recently published volume (2024) entitled, *Social Movements and Everyday Acts of Resistance: Solidarity in a Changing World*, edited by Stamatis Poulakidakos, Anastasia Veneti and Maria Rovisco is an excellent collection of important contributions focusing on everyday forms of grassroots resistance, manifested both offline and online. More specifically, it focuses on small- scale social movements, which implement a variety of solidarity activities, such as – but not limited to – symbolic (online and offline) acts of resistance, small- scale cooperatives, solidarity economy initiatives, alternative health centres. Even though these initiatives are not

new (Sutton, 2000), they have been increasing and expanding in number and scope since the beginning of the 21st century, alongside acts of civil disobedience, in order to respond to social and political challenges. In addition, such activities have remained in the shadow of mass demonstrations, since they tend to receive little attention in the mainstream media (Fominaya, 2017; Karyotis and Rudig, 2018). Thus, this book is an indispensable source shedding light on offline and online, small- scale (prefigurative) solidarity initiatives in various world sites.

According to the editors, the practices of prefigurative politics and solidarity are central to small-scale social movements. “Prefiguration” or “prefigurative politics” refers to a political action, practice, movement, moment, or development in which certain political ideals are experimentally actualized in the “here and now”, rather than hoped to be realized in a distant future (Raekstadt and Gradin, 2020). Overall, forms of prefigurative politics are broadly “progressive” in the sense of being opposed to unjust political structures and committed to individual equality and freedom of expression (Jeffrey and Dyson, 2021, p. 644; Steinmetz et al., 2019; Raekstadt and Gradin, 2020). Closely bound to non-hierarchical (pre-figurative) practices, solidarity is a (political) ethos and a scope – at the same time – permeating small-scale grassroots initiatives (Scholz, 2008; Arampatzi, 2017; Siapera, 2019).

The various chapter contributions of this excellent volume examine notions of prefigurativism and solidarity through a range of case studies drawn from different world sites including Greece, Italy, Argentina, India, Scotland, Latin America, Syria and the UK. So, I hope that Dr Poulakidakos’ co-edited book is on your Christmas reading list!

However, I also hope you are able to indulge me a celebration of a people close to my heart, and constantly in my thoughts since I departed the country on the eve of the current genocide they are enduring; the Palestinian people. I am thus going to draw attention, literally, to the Art of Resistance in the Palestinian Struggle.

I thus connect Art as a communicative tool in envisioning non-violent acts of resistance for social justice and make some core connections before I highlight some key contributions in this area in concluding my talk.

Creative non-violent action is about leveraging the intersections of art, protest, and information along with communications technologies for social change. Nonviolent public protest is a vital sign of life in a healthy democracy. It is the act of protest that signifies that citizens are engaged in the political process and that we have a stake in the direction in which our countries move, for some as stateless for others as citizens or denizens. When we rise up, declaring outrage at injustice and at that which is outdated and harmful, when we speak up, collectively proclaiming a new vision and course for society, this is when a democratic system is truly thriving. In particular, when we choose to protest in both creative and nonviolent ways, we invite others to participate with us in a collective process of social, political, and cultural revolution that is as powerful as it is peaceful.

Within this context, some of the core questions that pre-occupy me are the following: are visual and performative media central to nonviolent protest movements today? What is the relationship between creative expression through the arts and nonviolent direct action with political purpose? How have new technologies been incorporated into the production and distribution of activist art and to what effect?

These questions require a meaningful analysis to deepen our understanding of the intersections between art, nonviolent protest, and new Information and Communications Technologies (ICT). They also require an ongoing inquiry and to the practice of building and sustaining future social movements. Perhaps the ultimate goal of any future project is to provide insight into the capacity afforded by combining these media and leveraging them to create lasting social change.

I contend here that the practice of creative nonviolent protest is an accessible and transformative process for advancing any campaign that aims to achieve greater social justice and peace within society. Within that, audience members experience the political messages carried by creative media in intimately personal ways. Indeed, the power of the arts in movement building and nonviolent direct action is linked to the capacity of creative media to personalize that which is public, and to weave profound connections between maker, medium, viewer, and the broader sociopolitical issue at hand. We should be cognisant of the ways in which new ICTs and the mobile-social network function as a unique creative medium for political expression operate in tandem. Furthermore, we should maintain awareness that this medium facilitates the rapid expansion and increased participation in social movements because of its quality of timeliness and its capacity to synthesize the expressions presented through multiple media—traditional and digital—simultaneously.

Nonviolent protest movements that grow in strength are usually perceived as threats to the institutions of power and the established status quo that they relentlessly resist and vigorously challenge. As soon these activities, and the people participating in them, are identified as opponents they are often targeted, suppressed, and rendered obsolete by those institutions that they publicly threaten. Although this is true of many movements historically, and of course it is not always the case, altogether abandoning nonviolent protest as a viable means of challenging structures of violence and creating structures of peace is not productive. Rather, the incorporation of creative cultural production with political purpose in nonviolent protest is a communicative method of change making that warrants further exploration.

What role do visual arts, theatre and other types of cultural production play in creating outcomes of social justice and peace? The creation and replication of imagery, script or song as an aspect of nonviolent protest activity allows for rapid dissemination of information and serves as a protective shield of anonymity through which artist-activists and the general public alike can participate in nonviolent protest. Of particular interest are the myriad examples of nonviolent processes and creative mediums working in harmony to engage people in the hard work of changing predominantly violent aspects of society into predominantly peaceful forms. I was

enormously privileged to have experienced this in my two weeks in Palestine culminating with my departure on the dark date of October 7th. The students at Dar-Al-Kalima University in Bethlehem where I was based gave amazing performances, dance and theatrical, held incredibly illuminating exhibitions of their drawings and crafts and gifted me a hand sculpted name display carved in Arabic and English on the healing materiality of a piece of Palestinian olive tree, that I proudly keep in my University office visually meaningful along with the cultural programme during my visit. Carrying these concepts throughout provides a framework with which to analyze the intersections between nonviolent protest and creative expression. This framework may serve to illuminate the dynamic relationship between these mediums—political and artistic—so as to clarify the transformative power that they may have to influence cultural revolution.

Art for social justice has long challenged notions of whose stories are told, how, and by whom, positioning it as a key body of practice to combat neoliberalism and other structures of domination. In the global struggle for liberation, art and social justice practices must be contextualized, requiring approaches and pedagogy that address the cultural landscapes in which they are rooted. Against this backdrop, the activist-academics should explore two questions: 1) In what ways do practices in the arts and social justice differ and intersect across cultural contexts? and 2) What lessons can be gleaned from grassroots and systems-level approaches to arts for social justice?

Some key Highlights include:

- Artistic activism (artivism) contributes to organizational strategies of the movement.
- Artivism expands the demographics of the movements and promotes inclusiveness.
- Education, social cohesion and expression of ideas are main effects of artivism.

And, although Banksy, the UK-based artist, is known for his political activism through his absurdist and dystopian street art and has extensively worked in Palestine in the last two decades, I want to make this platform solely about the Palestinian people.

Many artists whose work stands as a testament to the enduring Palestinian struggle for justice and their yearning for a peaceful homeland. Through their artistic vision, many Palestinian artists actively participate in the global conversation about building a better, more just, and peaceful world. Their dedication to these goals makes them not only celebrated artists but also catalysts for change.

How Palestinians are using art as a form of resistance against Israel is more relevant now than ever. As Israel's war on Gaza continues, artists across the world have been using their work to show support and solidarity with the Palestinian people. From graffiti to skateboarding, Palestinian artists have found their own way to connect and share experiences and ensure that their culture and identity are not erased.

So, we'll end with just a few minutes of current art and art in the streets of Palestine as resistance, two short clips, a total of about six minutes and then we'll move into discussion and questions.

(1.45 mins)

<https://www.tiktok.com/@aljazeeraenglish/video/7304719296914050346>

Global Street Art Episode 3 - Palestine - Art in the Streets – MOCAtv (4.45 mins)

<https://www.youtube.com/watch?v=2TUivH2oSAo>

In concluding, I want to thank you for your attention and participation.

Peace, light, love and social justice for all.

## Keynote Speech 2

### The evolution and prospects of data journalism

Andreas Veglis\*

#### Abstract

Over the past 20 years, there has been remarkable growth in the field of data journalism. Data journalism is a specialization that relies on finding news stories within data. It typically involves a visualization that can make the complex results of an article understandable. Today, there is a trend in data journalism to use programming techniques (usually utilizing the Python programming language). This trend mainly stems from large journalistic organizations involved in big data journalism projects that use big data analysis. The chapter examines the evolution of data journalism from its inception to the present day. It also discusses the necessity of using programming for practicing data journalism, the available methods, and the difficulties encountered by journalists in using programming. The chapter concludes with a reference to future developments in the field of data journalism.

**Keywords:** data journalism, visualization, programming, Python, future developments.

#### Introduction

The introduction of ICT (Information and Communication Technologies) in the last decades of the 20th century had a significant impact on almost every industry, including the news industry. Journalism was one of the fields where ICT had a substantial impact, transforming the profession through the digitization of the work process and the introduction of new online content transmission services (Siapera & Veglis, 2012; Veglis, 2009). Today, journalists can use numerous tools and services to stay informed about breaking news and current events and to use a variety of tools and applications for the preparation and dissemination of news (Veglis & Brasas, 2017a). Concurrently, the introduction of ICT has significantly altered the way news is consumed by the public. New content-sharing channels have emerged, and media outlets are leveraging these channels to create alternative ways of distributing journalistic content (Siapera & Veglis, 2012). It is worth noting that many new types of journalism have emerged (algorithmic journalism, drone journalism, multimedia journalism, etc.) (Gray, Chambers, & Bounegru, 2012), which require journalists to possess specialized skills.

In recent years, data journalism has attracted significant attention in academic literature as well as in the field of new developments in digital news production (Hermida & Young, 2017; Loosen, Reimer, & De Silva-Schmidt, 2020; Weber, Engebretsen, & Kennedy, 2018). Data journalism is now considered an established form of journalism. It gradually emerged at the

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start of the new century. Many factors have contributed to the introduction of data journalism, but one of the most important is believed to be the availability of data in digital form. Another contributing factor was the availability of data visualization and management tools (Veglis & Bratsas, 2017a). Data Journalism is a journalistic specialty that reflects the increased role numerical data plays in the production and distribution of information in the digital age. Data can be the source of data journalism and/or it can be the tool through which the story is told (Gray, Chambers, & Bounegru, 2012).

The report on the state of data journalism by the EJC (2024) highlights significant trends and challenges in the field. The majority of data journalists are employed full-time, reflecting a stable job market, although there is a notable shift towards freelance work, indicating a trend towards more flexible working arrangements. Technical skill shortages, particularly in data analysis and visualization, remain a challenge despite increased fundamental journalistic skills. Public government data is used more frequently, emphasizing its crucial role, with usage varying by region due to different legal frameworks. The integration of artificial intelligence is gradually increasing, primarily for content verification and search, but it faces issues related to ethical concerns and a lack of understanding regarding these technologies.

The introduction of data journalism has significantly increased journalists' needs in data management. On this issue, there are currently two approaches. The first suggests using independent applications that support different stages of data journalism (data finding, cleaning, verification, combination, etc.), and the second involves using programming to perform the necessary processes for practicing data journalism (Porlezza, 2024).

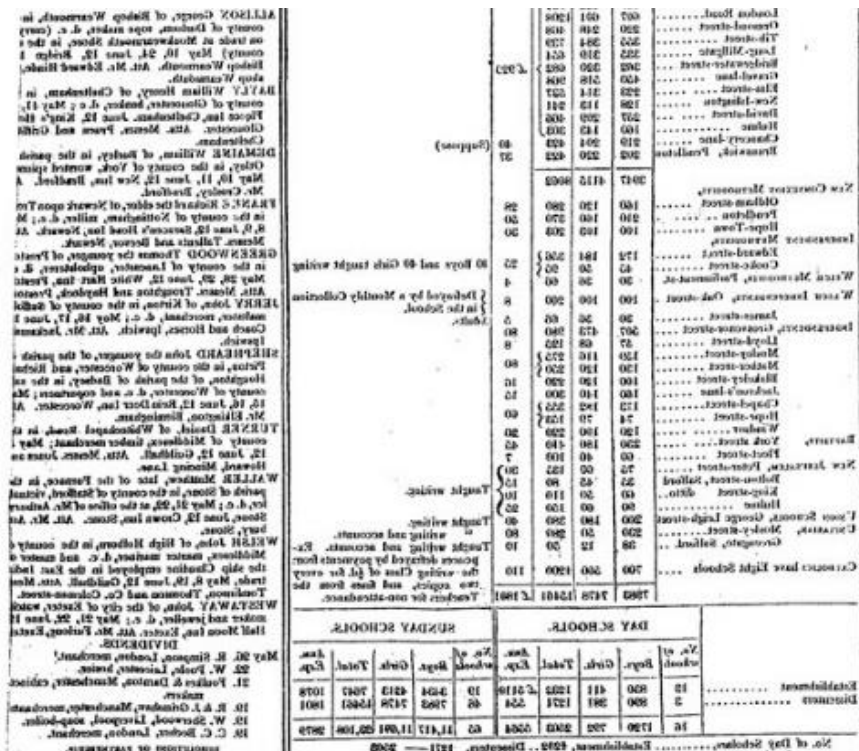
This chapter attempts to describe the current state of data journalism. Section 2 discusses the historical evolution of data journalism. The next section provides definitions of data journalism and outlines the stages that comprise it. Section 4 addresses the issue of the two approaches to practicing data journalism. The available solutions for adopting programming in the practice of data journalism are presented in Section 5. The chapter concludes with Section 6, where future developments in the field of data journalism are discussed.

## **Historical Evolution of Data Journalism**

### *First Generation of Data Journalism (Data Journalism 1.0)*

The origins of data journalism can be traced back to the work of John Graunt, who in 1662 published "Natural and Political Observations Made on the Bills of Mortality." Graunt utilized rudimentary statistical methods to analyze the list of deaths in London, thus laying the groundwork for statistical and demographic analysis (Friendly, 2007). Worth mentioning is also the inaugural issue of the Manchester Guardian in May 1821 (see Figure 1). This edition contained a data table - an innovation for that time - listing schools in Manchester and Salford, with details on the number of students and average annual expenses, providing significant insights into access to education. These data showed that 25,000 children, as opposed to the

official estimate of 8,000, received free education, thus questioning the accuracy of the data collected by the four clergymen responsible for these official statistics (The Guardian, 2011).



**Figure 1:** Article in the Manchester Guardian in 1821  
 (<https://www.theguardian.com/news/datablog/2011/sep/26/data-journalism-guardian>)

The revelation of data in 1821 was not merely informative but served a crucial socio-political function. It exposed shortcomings in the educational system and highlighted the disparity between official figures and reality. This act of publishing the dataset was a significant move towards transparency, offering a more accurate representation of educational access during that period.

The 19th century saw the expansion of statistical graphics and the first uses of data visualizations in newspapers. William Playfair, a Scottish engineer, was pivotal during this time for inventing several types of graphs, such as the bar chart, pie chart, and line graph. His graphs were later used in journalism to present economic and social data to the public, making complex information more accessible and understandable (Spence, 2005). This era is characterized by the work of Charles Joseph Minard, renowned for his 1869 flow map of Napoleon's Russian campaign in 1812. His innovations demonstrated the power of visualizing temporal and spatial data (Tufte, 2001).

Articles belonging to the first generation of data journalism (Data Journalism 1.0) continue to appear to this day. A characteristic example is in Thailand, where the Isranews agency, in an article covering a company, cites financial data without engaging in any statistical analysis (Thienthaworn, 2021).



*Second generation of data journalism (Data Journalism 2.0)*

At the beginning of the 20th century, technological advancements in printing and the rise of mass media facilitated the wider use of graphics. Newspapers began to include more detailed charts and graphs to accompany the news. By 1943, data presentation had become much more creative and targeted the average newspaper reader. During that time, The Manchester Guardian featured an article with an infographic (see Figure 2), created by the United States War Information Office to reassure American citizens. At that time, rumors were circulating that most of the military equipment and food produced in the USA were being sent abroad, so this visualization was created to debunk these rumors. It is easy for the reader to see, at a glance, that the solid icons represent exports, and the hollow icons represent materials remaining in the USA (Thienthaworn, 2021).



**Figure 2: Data Visualization in a Newspaper Article in 1943**

(<https://www.theguardian.com/gnmeducationcentre/gallery/2021/aug/13/the-evolution-of-data-journalism-in-pictures>)

In the 1960s, the gradual use of electronic computers for composing journalistic content began. This resulted in journalists using computers to analyze large datasets - a practice implemented by Philip Meyer during the Detroit riots in 1967. Meyer's use of survey data in his analysis of the riots for the Detroit Free Press is often cited as one of the early examples of modern data journalism (Meyer, 1973). The skills required for this type of data journalism include social research methodology and computer usage (Thienthaworn, 2021).

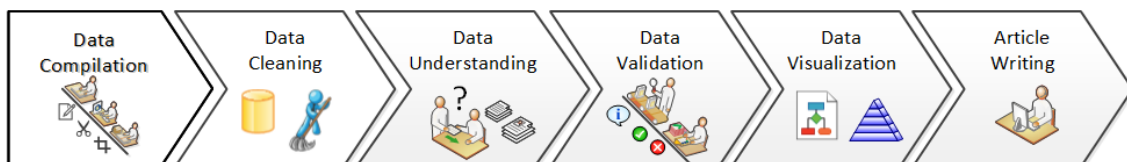
### *Third generation of data journalism (Data Journalism 3.0)*

In the late 20th century, the convergence of information technology and communication had significant implications for data journalism. Specifically, in the 1990s, pioneering efforts were made, such as the establishment of research units specializing in data analysis, such as the BBC's News Lab and The Guardian's Data Blog (Coddington, 2015). The rise of the Internet and the development of advanced data analysis software enabled journalists to handle larger datasets and perform more complex analyses. This period also saw the introduction of interactive visualizations and the beginning of online data journalism. An example project that can be considered the starting point of the third generation of data journalism is The Guardian's "Afghan War Logs," which used data science to assist in collecting, organizing, analyzing, and presenting over ninety thousand classified military documents. The skills required for this type of article include programming and the development of interactive websites to enable audiences to interact with the article's content (for example, through interactive visualizations).

### **Defining data journalism**

Megan Knight (2015) attributes the first use of the term "data journalism" to The Guardian journalist Simon Rogers in a post on the Guardian Insider Blog. This concept involves a workflow starting with data analysis, followed by data filtering and visualization to create a narrative, as Lorenz (2010) states. It incorporates elements such as spreadsheets, graphics, data analysis, and significant news (Rogers, 2008), essentially involving the creation of news graphics, incorporating design elements and interactivity (Bradshaw, 2010; Lorenz, 2010; Rogers, 2008). Megan Knight (2015) defines data journalism as a narrative primarily based on numerical data or including significant data or visualization.

Veglis and Bratsas (2017a) proposed a definition to more effectively include the importance of visualization and interactivity in data journalism. They describe it as a process of extracting valuable information from data, shaping articles based on this information, and integrating visualizations (sometimes interactive) into these articles to help readers understand a topic or focus on information relevant to them. They also proposed categorizing the data journalism process into six distinct stages (see Figure 3), namely data collection, data cleaning, data understanding, data evaluation, data visualization, and article writing (2017b; 2016).



**Figure 3:** Data journalism stages (Veglis & Bratsas, 2017a).

*Data Collection:* This initial phase of a data journalism project begins either with a question that requires data or with a dataset in need of exploration. Data collection can be done in various ways, such as obtaining data directly from an organization (often as open data), using advanced

search techniques, web scraping, document conversion for analysis, or collecting data through observation, surveys, electronic forms, or crowdsourcing (Veglis & Bratsas, 2017a).

*Data Cleaning:* This particular stage involves identifying and correcting incorrect or corrupted records in a dataset (Wu, 2013). It includes removing human errors and standardizing data formats to maintain consistency with other data used by the journalist (Veglis & Bratsas, 2017b).

*Data Understanding:* In this stage, journalists must decipher various labels in datasets representing categories, classifications, or locations, along with specialized terminology. Often, additional data are required to make sense of existing data. Journalists need to have experience in using data, capable of understanding, formulating, and critically analyzing the data to meet specific needs (Veglis & Bratsas, 2017a).

*Data Evaluation:* This stage involves cross-referencing initial data and acquiring additional information from sources to enrich the data (Silverman, 2014; Veglis, 2013). It is important to recognize that datasets, like any source, have inherent biases and objectives. Journalists need to investigate the origin, purpose, and methodology of dataset collection (Bradshaw, 2010). This can be done by researching the dataset's creation history, identifying references to the dataset, or using other sources of information related to the research topic (Silverman, 2014; Veglis & Bratsas, 2017a).

*Data Visualization:* Since statistical information is abstract, transforming it into a physical representation requires an understanding of visual perception and cognition (Cairo, 2013). Effective data visualization should follow design principles based on human perception (Card, Mackinlay, and Shneiderman, 1999; Few, 2013).

The concept of data journalism is closely related to big data (Veglis, et al., 2022). The term "big data" was proposed in the late 20th century. It refers to datasets so large in size that they cannot be collected, curated, managed, and processed by general-purpose software running on typical personal computers (Lewis and Westlund, 2015; Snijders et al., 2012). Kitchin (2014) proposed a more analytical definition: Big data are voluminous (terabytes or petabytes), high-velocity (generated in or near real-time), varied in structure (structured and unstructured in nature), exhaustive in scope (attempting to capture entire populations or systems), high-resolution, uniquely indexed for identification, relational in nature (containing common fields that allow the connection of different datasets), and flexible (expandable).

Big data has influenced the field of media (Veglis and Maniou, 2018), where their application has been facilitated by new technological advancements that have automated and to some extent simplified data analysis (Stone, 2014). Despite the fact that big data are used in many cases in data journalism, it is not always necessary.

## **The use of programming in data journalism**

The use of programming in data journalism is a topic of discussion and debate in the field of media. On one hand, it is argued that programming skills have become essential for journalists, especially data journalists, in today's media landscape. Advocates emphasize that programming allows journalists to collect, analyze, and present data in innovative ways, enabling them to uncover hidden patterns and provide deeper insights into complex issues. They also claim the

utility of programming skills in enhancing storytelling and investigative journalism (Simon, 2021). Porlezza contends that programming skills are often necessary for practicing data journalism (2024). Data journalism involves the collection, analysis, and visualization of data for storytelling and knowledge revelation. To effectively work with data, journalists often need to use programming languages (such as Python or R) to clean and process data, conduct statistical analyses, and create visualizations. Programming skills enable journalists to work with large datasets, automate data processing tasks, and create interactive data visualizations (Porlezza, 2024).

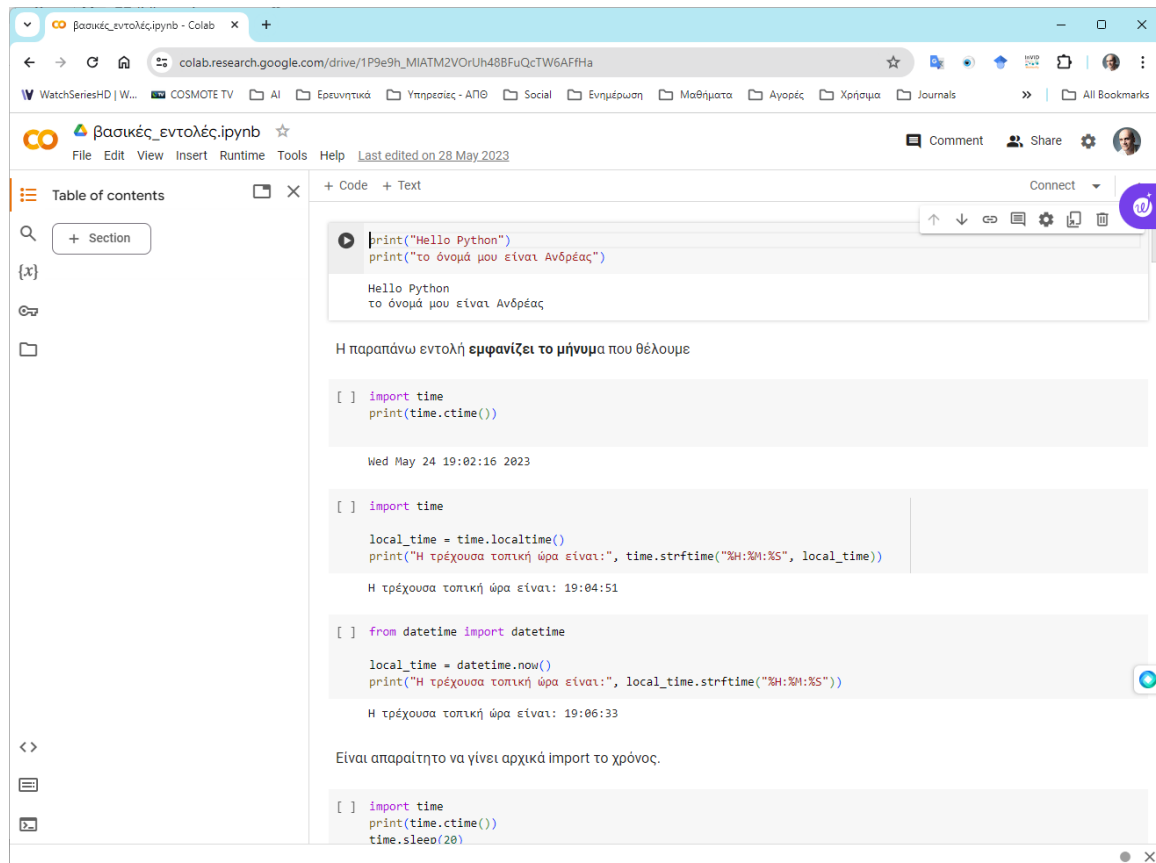
However, there are also concerns regarding the integration of programming into journalistic practice. Specifically, critics argue that journalists should focus on their core skills of storytelling and information gathering, leaving the technical aspects to data specialists and programmers. The concern lies in the fact that specialization in programming may divert journalists' attention from their primary duties and lead to a weakening of journalistic integrity (Cruz, n.d.; Hannaford, 2015). Heravi and Lorenz conclude that the use of programming in data journalism is a matter of debate (2020). While programming skills can be valuable for producing data-driven stories, not all data journalists necessarily need to know how to code. Porlezza (2024) does not directly disagree with this conclusion but believes that possessing programming skills can significantly enhance a journalist's ability to work effectively with data. Programming should not be considered the essence of data journalism but rather a tool that can substantially support the process (Heravi & Lorenz, 2020).

It is important to strike a balance between the positives and negatives of using programming in journalism. While programming skills can empower journalists to uncover significant narratives and engage the audience in new ways, it is crucial to ensure that journalistic standards and ethics are not compromised. Colman et al. (2018) examined the ethical considerations arising when journalists use programming techniques in their work. In conclusion, the use of programming techniques in journalism presents opportunities and challenges. It is essential for journalists to critically evaluate the benefits and risks associated with the use of programming languages, considering the specific context and goals of their reporting. By responsibly leveraging programming skills and adhering to ethical rules, journalists can harness the power of technology to enhance their storytelling and deliver impactful journalistic content to the audience.

### **Available solutions for adopting programming**

In the field of data journalism, programming languages like Python and R have emerged as pivotal tools, offering powerful capabilities for data processing and visualization. Especially Python, renowned for its simplicity and readability, has become a fundamental tool in data journalism for tasks such as web scraping, data analysis, and interactive visualization. Its extensive libraries, such as Pandas and Matplotlib, enable journalists to efficiently handle large datasets and present complex information in understandable formats. The ability to embed Python code into websites further aids journalists in creating interactive online presentations of their findings. On the other hand, R is highly regarded for its capabilities in statistical analysis and data visualization, making it an ideal choice for in-depth analysis of complex datasets. R allows journalists to uncover hidden patterns and trends, while also providing a platform for

integrating code, visualizations, and narratives, thereby enhancing storytelling in data journalism. The open-source nature of both Python and R fosters a collaborative environment, with a vast community of developers contributing to their development and providing support. This aspect is crucial for journalists who often rely on shared resources and community support to learn and address potential issues. Moreover, the abundance of educational resources and online seminars for Python and R facilitates journalists in seamlessly integrating programming into their skill set (Appelgren & Nygren, 2014; Bradshaw, 2018; Bounegru et al., 2018; Hamilton, 2016; Knight, 2015).

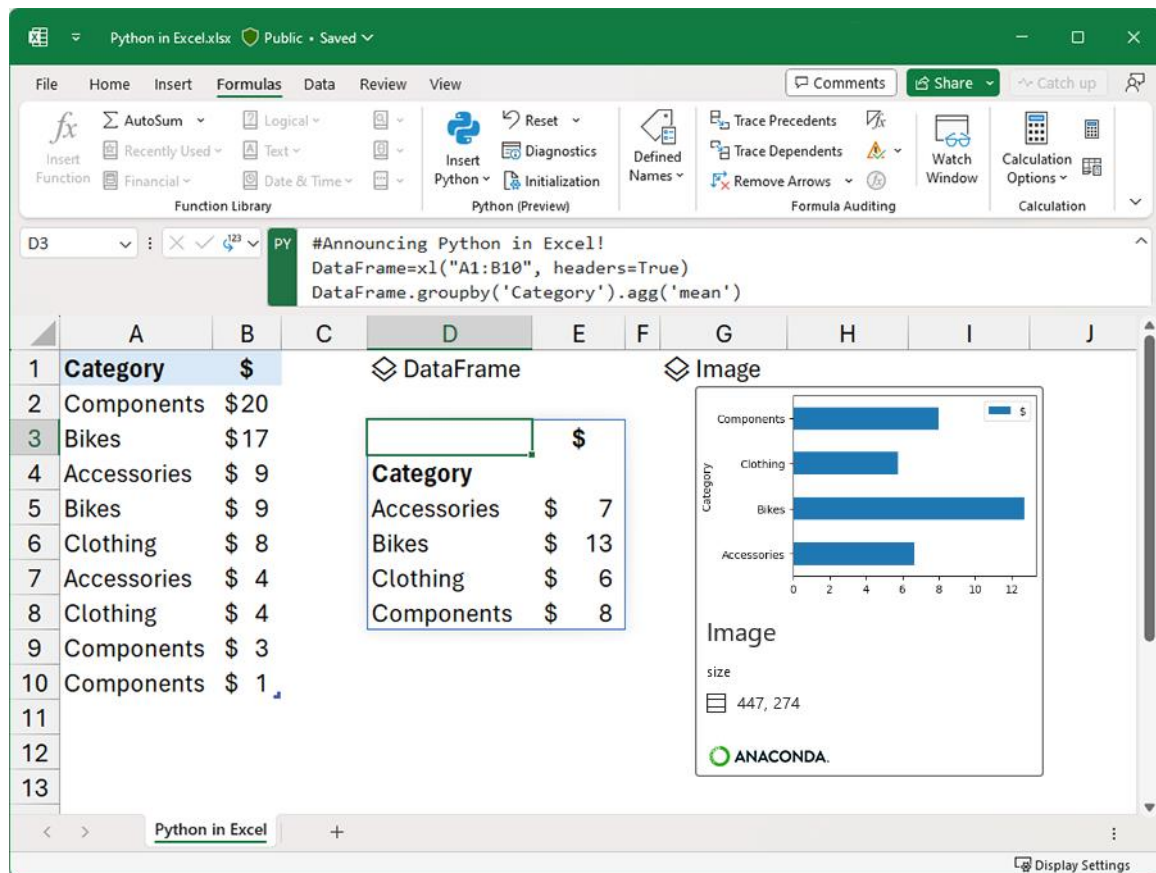


**Figure 4:** The interface of Google Colab.

It is worth noting that installing Python or R on a computer is not an easy process. However, there are alternative solutions, leveraging cloud computing, such as Google Colab, which supports writing and executing Python code through a web browser. Specifically, Google Colab is a free, cloud-based Jupyter Notebook environment (a specialized version of Python) that allows writing and executing Python code in a web browser, with free access to computing power, making it suitable for machine learning and data science (Burke, 2023). Thus, journalists do not need to install Python on a personal computer to use it (see Figure 4).

Another recent development is the integration of Python into the Microsoft Excel application. In this way, Microsoft combines the advanced computational capabilities of Python with the spreadsheet capabilities of Excel (Kinnestand, 2023). Users can use Python directly in Excel cells, leveraging Python libraries for data manipulation and visualization. This integration into

Excel allows journalists to gradually transition to using Python code while still using the familiar environment of Excel (see Figure 5).



**Figure 5:** Integrating Python code in Microsoft Excel (<https://insider.microsoft365.com/cs-cz/blog/python-in-excel-elevating-your-data-analysis-capabilities>)

Another approach available for working with Python involves using artificial intelligence (AI) interfaces like ChatGPT, with the help of specialized add-on programs. ChatGPT can serve as an intuitive interface with natural language processing capabilities for journalists who may not have much programming knowledge. This could include querying datasets, creating statistical summaries, or even generating data visualizations using text commands (Innexturesolutions, 2023). In this way, the utilization of Python for data journalism becomes more accessible, allowing journalists to focus more on storytelling and less on the technical aspects of data handling (Knight, 2015). Using ChatGPT as an interface to Python can also be seen as democratizing data journalism, enabling a wider range of journalists to engage in data-driven storytelling. This approach aligns with the trend towards more accessible and collaborative forms of journalism (Hamilton, 2016). By reducing the barrier to entry into data journalism, AI plays a significant role in the evolution of the field, making it more inclusive and diverse.

## Future developments

Tim Berners-Lee asserts that "data-driven journalism is the future" and encourages journalists to seek stories within datasets (Arthur, 2010). The development of the Semantic Web (Web 3.0) and Linked Open Data will play a significant role in the evolution of data journalism (Panagiotidis & Veglis, 2020). In the future, journalists will need to understand and utilize advanced technologies that will involve a more "smart web" (Bradshaw & Rohumaa, 2011). Semantic web technologies, smart devices (such as smartphones, etc.), and AI tools are constantly evolving and upgrading. Data journalism must embrace these technologies as they support the acquisition and verification of data, which is the primary source of data journalism. Significant advancement in the development of the Semantic Web is also expected due to recent developments in the field of Artificial Intelligence, particularly Generative Large Language Models. Understanding the content of the web (which is the goal of the Semantic Web) may become easier with the use of AI tools that can analyze large unstructured datasets (Breit, et al., 2023).

An important issue that needs to be addressed is the lack of online platforms that can support all stages of data journalism. Today, many online tools can be used at different stages of a data journalism project. Each tool has its unique interface, and journalists must spend time learning how to effectively use them. Most of these tools do not offer any integration with other tools. Thus, journalists spend a lot of time transferring data from one platform to another to leverage the strengths of each tool. In other words, the landscape is fragmented, and there is a lack of an integrated platform where journalists can work on all stages of data journalism projects. Data journalists can greatly benefit from the introduction of online platforms that connect various online tools that can be used in data journalism. This is a problem that the media industry must address in collaboration with the field of computer science (Veglis & Bratsas, 2021).

There is no doubt that data journalism today remains more of an exception than the rule, despite the fact that the majority of journalists express interest in it (EJC, 2024). Online journalists seem to be more engaged and have more incentives for data journalism. Given the ongoing shift towards online journalism (Cokley, Edstrom, McBride, & Ranke, 2015), many new developments are expected in the field of data journalism. In the ever-changing media landscape, where traditional media organizations face tough competition from social media services as well as citizen journalists, the level of complexity involved in practicing data journalism may present an opportunity for professional journalists to regain popularity and credibility.

## References

Appelgren, E., & Nygren, G. (2014). Data journalism in Sweden: Introducing new methods and genres of journalism into 'old' organizations. *Digital Journalism*, 2(3), 394–405.

- Arthur, C. (2010, November 22). Analysing data is the future for journalists, says Tim Berners-Lee. The guardian. <http://www.theguardian.com/media/2010/nov/22/data-analysis-tim-berners-lee> [accessed 29 April 2024].
- Bradshaw, P. (2018). *The Data Journalism Handbook: Towards a Critical Data Practice*. Amsterdam University Press.
- Bradshaw, P., (2010). How to be a data journalist. The Guardian Data Journalism <http://www.Guardian.co.uk/news/datablog/2010/oct/01/data-journalism-how-to-guide> [accessed 29 April 2024].
- Breit, A., Waltersdorfer, L., Ekaputra, F. J., Sabou, M., Ekelhart, A., Iana, A., ... & Van Harmelen, F. (2023). Combining machine learning and semantic web: A systematic mapping study. *ACM Computing Surveys*, 55(14s), 1-41.
- Bounegru, L., Chambers, L., & Gray, J. (Eds.). (2012). *The data journalism handbook*. European Journalism Centre.
- Burke, J. (2023). *Why and how to use Google Colab*. TechTarget Available at <https://www.techtarget.com/searchenterpriseai/tutorial/Why-and-how-to-use-Google-Colab> [accessed 29 April 2024].
- Cairo, A. (2013). *The functional art: an introduction to information graphics and visualization*. New Riders.
- Card, S., Mackinlay, J., Shneiderman, B. (1999). *Readings in Information Visualization: Using Vision to Think*. Morgan Kaufmann.
- Chen, C. H., Härdle, W., Unwin, A., & Friendly, M. (2008). *A brief history of data visualization*. Handbook of data visualization, 15-56, Springer.
- Coddington, M. (2015). Clarifying journalism's quantitative turn: A typology for evaluating data journalism, computational journalism, and computer-assisted reporting. *Digital journalism*, 3(3), 331-348.
- Cokley, J., Edstrom, M., McBride, J., & Ranke, A. (2011). Moving Away from 'Big Media': Students, Jobs and Long-tail Theory. *Australian Journalism Review*, 33(1), 107-118.
- Colman, F., Bühlmann, V., O'Donnell, A. and van der Tuin, I. (2018). Ethics of Coding: A Report on the Algorithmic Condition [EoC]. H2020-EU.2.1.1. – INDUSTRIAL LEADERSHIP – Leadership in enabling and industrial technologies – Information and Communication Technologies. Brussels: European Commission. 732407, 1–54. [https://cordis.europa.eu/project/rcn/207025\\_en.html](https://cordis.europa.eu/project/rcn/207025_en.html) [accessed 29 April 2024].
- Cruz, J. (n.d.). Why journalists need data and coding skills more than ever | International Journalists' Network. International Journalists' Network. <https://ijnet.org/en/story/why-journalists-need-data-and-coding-skills-more-ever> [accessed 29 April 2024].
- EJC, (2024) State of data journalism 2023. EJC.net. <https://ejc.net/state-of-data-journalism-survey-2023> [accessed 29 April 2024].
- Few, S. (2013). *Data Visualization for Human Perception*. In: Soegaard, Mads and Dam, Rikke Friis (eds.). The Encyclopedia of Human-Computer Interaction, 2nd Ed. Aarhus, Denmark: The Interaction Design Foundation.



- Hamilton, J. T. (2016). *Democracy's Detectives: The Economics of Investigative Journalism*. Harvard University Press.
- Hannaford, L. (2015). Computational journalism in the UK newsroom. *Journalism education*, 4, 6-21. <https://e-space.mmu.ac.uk/575953/1/Article%20Computational%20Journalism.pdf> [accessed 29 April 2024].
- Heravi, B. R., & Lorenz, M. (2020). Data journalism practices globally: Skills, education, opportunities, and values. *Journalism and media*, 1(1), 26-40.
- Hermida, A., & Young, M. L. (2017). Finding the data unicorn: A hierarchy of hybridity in data and computational journalism. *Digital Journalism*, 5(2), 159-176.
- Inexturesolutions, (2023). How To Use ChatGPT API In Python For Your Real-Time Data. Medium.com, <https://medium.com/@inexturesolutions/how-to-use-chatgpt-api-in-python-for-your-real-time-data-7838fed712b1> [accessed 29 April 2024].
- Kinnestand, S. (2023). Introducing Python in Excel: The Best of Both Worlds for Data Analysis and Visualization, Microsoft 365 Blog. <https://techcommunity.microsoft.com/t5/microsoft-365-blog/introducing-python-in-excel-the-best-of-both-worlds-for-data/ba-p/3905482#:~:text=Python%20in%20Excel%20combines%20Python's,to%20further%20refine%20your%20insights> [accessed 29 April 2024].
- Kitchin, R. (2014). Big data, new epistemologies and paradigm shifts. *Big Data & Society*, 1(1), 1-12. DOI: 10.1177/2053951714528481.
- Knight, M. (2015). Data Journalism in the UK: a preliminary analysis of form and content. *Journal of Media Practice*, 16(1), 55-72.
- Lewis, S.C., and Westlund, O. (2015). Big data and journalism: Epistemology, expertise, economics, and ethics. *Digital Journalism*, 3(3), 447-466.
- Loosen, W., Reimer, J., & De Silva-Schmidt, F. (2020). Data-driven reporting: An on-going (r) evolution? An analysis of projects nominated for the Data Journalism Awards 2013–2016. *Journalism*, 21(9), 1246-1263.
- Lorenz, M. (2010). Data driven journalism: What is there to learn? Presented at IJ-7 Innovation Journalism Conference, 7–9 June, Stanford, CA.
- Meyer, P. (2002). *Precision journalism: A reporter's introduction to social science methods*. Rowman & Littlefield Publishers.
- Panagiotidis, K., & Veglis, A. (2020). Transitions in journalism—Toward a semantic-oriented technological framework. *Journalism and Media*, 1(1), 1-17. <https://www.mdpi.com/2673-5172/1/1/1> [accessed 30 April 2024].
- Porlezza, C. (2024). The datafication of digital journalism: A history of everlasting challenges between ethical issues and regulation. *Journalism*, 25(5), 1167-1185.
- Rogers, S. (2008). Turning official figures into understandable graphics, at the press of a button. Inside the Guardian Blog, <https://www.theguardian.com/help/insideguardian/2008/dec/18/unemploymentdata> [accessed 29 April 2024].
- Siapera, E., & Veglis, A. (Eds.). (2012). *The handbook of global online journalism*. John Wiley & Sons.

- Silverman, C. (2014). *Verification Handbook*. European Journalism Centre <http://verificationhandbook.com/downloads/verification.handbook.pdf> [accessed 29 April 2024].
- Simon, B. (2021). *Coding With Data in the Newsroom*. In Bounegru, L., & Gray, J. (eds). *The Data Journalism Handbook: Towards a Critical Data Practice* (p. 124-127). Amsterdam University Press.
- Snijders, C. C. P., Matzat, U., & Reips, U. D. (2012). "Big Data": big gaps of knowledge in the field of internet science. *International journal of internet science*, 7(1), 1-5.
- Spence, I. (2005). No humble pie: The origins and usage of a statistical chart. *Journal of Educational and Behavioral Statistics*, 30(4), 353-368.
- Stone, M. (2014). *Big Data for Media*. Report. Reuters Institute for the Study of Journalism.
- Thienthaworn, E. (2021). What is Data Journalism? Medium. <https://medium.com/@ekapon.th/what-is-data-journalism-17afbec6e30a> [accessed 29 April 2024].
- Tufte, E. R. (2001). *The visual display of quantitative information* (Vol. 2, p. 9). Cheshire, CT: Graphics press.
- Veglis, A. (2013). Education of Journalists on ICTs: Issues and Opportunities. *Journal of Applied Journalism & Media Studies*, 2(2), 265-279.
- Veglis, A. (2009). *Cross Media Communication in newspaper organizations*. In A. Poulymerakou, N. Pouloudi, & K. Pramataris (eds), 4th Mediterranean Conference on Information Systems, Athens, Greece.
- Veglis, A., & Bratsas, C. P. (2021). *Data Journalism: Definition, Skills, Difficulties, and Perspectives*. In *Encyclopedia of Information Science and Technology*, Fifth Edition (pp. 1140-1151). IGI Global.
- Veglis, A., Bratsas, C. (2017a). Journalists in the age of Data Journalism: The case of Greece. *Journal of Applied Journalism & Media Studies*, 6(2), 225-244.
- Veglis, A., & Bratsas, C. (2017b). Towards a taxonomy of data journalism. *Journal of Media Critiques*, 3(11), 109-121.
- Veglis, A., and Maniou, T. (2019). Chatbots on the Rise: A new Narrative in Journalism. *Studies in Media & Communication*, 7(1), pp. 1-6. DOI:10.11114/smc.v7i1.3986.
- Veglis, A., Saridou, T., Panagiotidis, K., Karypidou, C., & Kotenidis, E. (2022). Applications of Big Data in Media Organizations. *Social Sciences*, 11(9), 414.
- Weber, W., Engebretsen, M., & Kennedy, H. (2018). Data stories: Rethinking journalistic storytelling in the context of data journalism. *Studies in communication sciences*, (1), 191-206.
- Wu, S. (2013). A review on coarse warranty data and analysis. *Reliability Engineering and System*, 114, 1-11.

## **Foreword to the first thematic: Emerging Trends in Digital Communication, Media, and Society**

Maria Matsiola<sup>†</sup>

In the rapidly evolving landscape of digital communication and media, the interplay between technology, culture, and society is reshaping how we consume, share, and interact with information. The first thematic is titled “Emerging Trends in Digital Communication, Media, and Society” and delves into this dynamic field through four insightful chapters.

The first paper, titled “Intelligent processing and data management of sports content in media and communications” explores sports data in the modern digital media landscape and presents a framework for intelligent processing and management automation of sports content utilizing algorithmic techniques and Artificial Intelligence (AI) methods, such as Machine/ Deep Learning (ML/DL). The proposed approach introduces a series of techniques for semantic processing, annotating, and data linking mechanisms, providing a broader framework for indexing, and retrieving interconnected information and in this chapter the basic functional capabilities and pilot results of the initial techniques applied in basketball are presented.

The second paper is titled “Digital media, consumer culture and the city: An investigation of the relationship between youth lifestyles and cultural spaces” and it presents the research project LOCUS “social media, yOuth and Consumption of cUltural Spaces”. It highlights the digital effect on consumption practices that has impacted upon the multiple ways that consumers seek validation for their choices. Through qualitative study with young people, as well as with communication and marketing professionals who work on cultural institutions attempts to bring to the fore the wider socio-cultural processes, the digitally mediated youth lifestyles and young people’s sense of belonging in cultural spaces.

The third paper, titled “Knowledge sharing in online communities: Incentives and barriers” investigates the factors that motivate or inhibit knowledge-sharing behavior (explicit or implicit) in online communities, through a review of Greek and foreign-language literature and articles. It approaches the issue of online communities that share knowledge that often resemble communities of practice found in workplaces and educational institutions, where a common interest, identity, and a set of communication norms and structures are cultivated through interaction.

The fourth and last paper of the first thematic, is titled “The Effect of gamification in the field of tourism and social media: Gamification, tourism and social media” and it investigates the

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impact of gamification on social media and in the field of tourism and the intercultural communication through analysing the theories that have been formulated around gamification. Furthermore, it provides answers regarding the contribution of gamification to tourism and social media while it is trying to tackle the need for innovative strategies to enhance user engagement and interaction within the tourism industry through the integration of gamification elements.

# Intelligent processing and data management of sports content in media and communications

Nikolaos Vryzas, Lazaros Vrysis, Charalampos Dimoulas\*

## Abstract

This work presents a framework for intelligent processing and management automation of sports content utilizing algorithmic techniques and Artificial Intelligence (AI) methods, such as Machine/ Deep Learning (ML/DL). In the modern digital media landscape, sports data is among the most popular news/informing categories, favoring mediated communication and audience interaction. The main subject of interest may concern any sports event (e.g., a sports match) and all accompanying data related to player statements, athlete profiles, historical records of similar sports competitions, broader events, audience reactions, and more. The proposed approach introduces a series of techniques for semantic processing, annotating, and data linking mechanisms, providing a broader framework for indexing, and retrieving interconnected information. These data may include audiovisual material from event recordings, textual streams of unstructured or standardized descriptions, contributed content, comments, and reactions from ordinary users, before, during and after the main event. A modular ontology for organizing and describing events allows for the structured management of these informatory streams, making them useful for coaches, sports analysts, editors, journalists, and the broader audience. The basic functional capabilities and pilot results of the initial techniques applied in basketball are presented.

**Keywords:** sports semantics, intelligent processing, content management, machine learning, artificial intelligence, quality of experience.

## Introduction

In today's world, where media is critical in shaping information dissemination and audience engagement, this work presents a cutting-edge framework that leverages algorithmic techniques and Artificial Intelligence (AI) methods to process and manage sports content. From the excitement of live events to the rich history of archives, sports content is a vital component of modern communication, connecting communities and captivating audiences worldwide (Bellamy, 2009; Dimoulas, 2020; Fuss et al., 2013; Owens, 2015; Raney, & Bryant, 2009; Romney, & Johnson, 2020). Multiple content entities (i.e., text, images/graphs, photographs, audio, video) are employed for this purpose, aiming at engaging audiences and enhancing the offered Quality of Experience (QoE), ensembled in multimodal presentations, non-linear storytelling, multichannel/spatial audio, and 3D video arrangements, or even eXtended Reality (XR) media applications (Dimoulas, 2016; Kalliris et al., 2014; Kotsakis et al., 2014a; Masiola

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et al., 2015; Vegiris et al., 2008). The enhanced experience purposes to entertain the public and also to offer cultural and pedagogical interventions for society, given that sports have also been part of cultural spectacles and demonstrations. In this context, what content we capture, document, and broadcast today will be the sports audiovisual heritage for future generations, thus special care needs to be taken during pre-production, production, and post-production phases (Dimoulas et al., 2014; Dimoulas, 2022; Podara et al., 2021). In today's digital era, social media and User Generated Content (UGC) play a very significant role that cannot be left out of the discussion, with the television experience being wholly altered with the use of multiple cross-/trans-media channels, second-screen television applications, mobile footage contributions, and more, which are dominant in the consumption of television-broadcasted sports content (Dimoulas & Symeonidis, 2015; Dimoulas & Veglis, 2023; Katsaounidou et al., 2018; Katsaounidou et al., 2019; Palioura & Dimoulas, 2022; Podara et al., 2019; Saridou & Veglis, 2021; Sidiropoulos et al., 2019).

Elaborating on the above remarks, the advent of social media thoroughly enhanced audience participation through content playing, sharing, commenting, and interacting, therefore augmented the overall user experience (Boulianne, 2020; Jenkins & Ito, 2015; Matsiola et al., 2015; Vázquez-Herrero, & López-García, 2019). Among others, the “new media” era (Web 2.0 and beyond) multiplied the times and ways that content is produced, distributed, getting reactions, searched, and retrieved, thus creating new needs for more sophisticated media assets description, documentation, and management automations (Dimoulas et al., 2018; Kalliris & Dimoulas; 2009; Katsaounidou et al., 2019; Matsiola et al., 2015). Hence, apart from textual metadata, content-extracted descriptors, data-handling ontologies, and intelligent systems are now employed for providing deeper insights into the presented information, i.e., thematic classification, emotions, semantic conceptualization, relevant events detection/identification with aligning and linking mechanisms and more (Dimoulas & Veglis, 2023; Filippidis et al., 2018a; 2018b; 2019; Kapela et al., 2015; Kotsakis et al., 2014b; Tsolakis, 2023; Tsolakis et al., 2023; Vryzas et al., 2018; 2021a). Data-driven approaches relying on smart systems trained through Machine/Deep Learning (ML/DL) and hybrid decision making algorithms are now part of both the production and post-production processes, intended to facilitate the capturing/framing and streaming processes (Vegiris et al., 2008; Vryzas et al., 2021b), serve content indexing during editing (Dimoulas et al., 2007a; Vegiris et al., 2009), face emotional/semantic classification and personalization needs (Dimoulas & Symeonidis, 2015; Kotsakis et al., 2014b; Vryzas et al., 2018; 2021a; 2021b). Apart from documentation and management purposes, AI-based approaches are currently employed to enhance content quality by suppressing noise and removing other degradation artifacts, increasing image and audio resolution and, overall, augmenting the offered experience (Braun et al., 2021; Dimoulas, 2020; Fuss et al., 2013; Jo et al., 2018; Rota et al., 2023; Zhang et al., 2017). Such services are considered critical when it comes to the utilization of archived material in heritage applications and reuse scenarios, with imperative usefulness in the sports media domain (Chatzara et al.,

2019; Dimoulas et al. 2014; 2018; Dimoulas, 2022; Dimoulas & Veglis, 2023; Romney, & Johnson, 2020).

The current work elaborates on the need for intelligent documentation, indexing, and warehouse of sports data, including the incorporation and proper enhancement of archived material. The research hypothesis is that data-driven AI approaches utilizing sophisticated ML and DL solutions are technologically mature and efficient in delivering the stated requests of quality enhancement and media assets management automations by detecting and utilizing multiple/multimodal streams describing the same sports event. The paper envisions a modular architecture of different sub-systems that can be adaptively combined to face the needs of each explicit case, indicating a framework of data-driven solutions with the associated dataset repositories that can be configured to deliver the corresponding needs. This framework offers a structured approach to handling the diverse array of sports-related data and unlocks new opportunities for semantic analysis, annotation, and data linkage. By harnessing the power of ML/DL algorithms, it provides a sophisticated platform for indexing, retrieving, and interpreting interconnected content, ranging from player insights to fan reactions. Furthermore, this approach transforms raw data streams into actionable insights through a meticulously crafted ontology, benefiting a broad range of stakeholders. Coaches, sports analysts, journalists, and enthusiasts can utilize its comprehensive organizational structure, enabling informed decision-making and enhancing the overall sporting experience.

The structure of the paper is organized as follows. The next section states/defines the problem in discussion, its multidisciplinary scientific background, and the associated literature review. Subsequently, the introduced *mineCourt* framework (*Mining Enhanced Content semantics thru sports data*) is presented and discussed. Finally, pilot results and discussion summarize the proposed modular solution with its innovating and contributing research aspects, demonstrating use cases for future implementation and further progress anticipation.

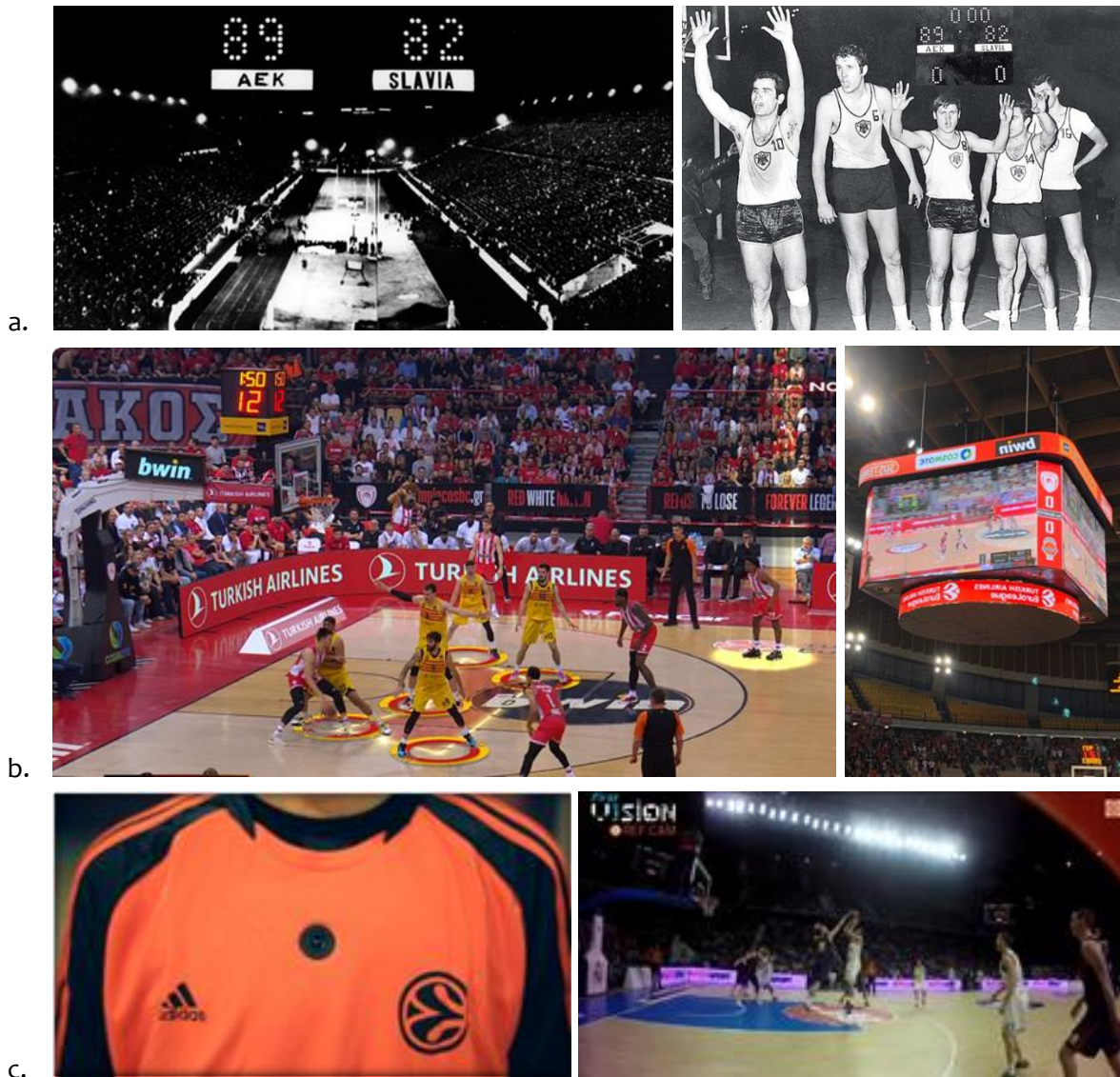
## **Problem Definition and Background**

Based on the preceding analysis, when it comes to sports broadcasting and archiving, there are two significant areas of focus. The first is the Quality of Experience (QoE) offered to viewers, which has seen significant improvements in recent years. These include enhancements in visual resolution, more vivid colors, increased frame rates (and motion dynamics), multichannel sound-tracks with spatial/3D audio reproduction capabilities, content profiling and device adaptation functionalities and more (Dimoulas, 2020; Fuss et al., 2013; Owens, 2015; Raney, & Bryant, 2009). Additionally, the broadcasting process has been elevated, with various augmentation layers now included in the streamed data and metadata, thus turning the broadcasting process into a whole new experience. No doubt, there is no comparison between the grade of archived content and new sports footage, where quality degradations are evident in the old material (image noise, poor resolution, audio noise contamination, sound artifacts and more), mainly due to the initial capture and preservation in analog form (Figures 1, 2).

Nevertheless, sophisticated Machine/Deep Learning (ML/DL) approaches can be employed nowadays for archived material restoration through deep noise suppression and super-resolution enhancement, utilizing Generative AI models to synthetically recreate missing/poor information in audio and visual/image content.

The second pillar emphasizes the importance of efficient content archiving and management automations through content annotation and indexing mechanisms (Figure 3), which is especially critical when dealing with vast amounts of prolonged audio and video recordings. It is no coincidence that such semantic web services have been systematically pursued since the advent of the Web 2.0 era, as already commented, making media assets management a practical necessity in most related everyday applications (Boulianne, 2020; Dimoulas & Veglis, 2023; Jenkins, 2015; Kalliris & Dimoulas, 2009; Katsaounidou et al., 2019; Matsiola et al., 2015; Saridou & Veglis, 2021). With the abundance of content and considering the progress and maturity of media compression algorithms and encoding protocols, the research attention was turned to innovative, intelligent data management solutions. Therefore, content indexing, documentation, and retrieval services are crucial for making information usable in post-/ batch-processing modes, such as reviewing footage for reexperiencing an event, making it usable in content reuse scenarios or implicating further correlation and analysis processes (Dimoulas, 2020; Nikolopoulou & Papagianni, 2015; Papachristou, 2016). Appropriate documentation and archiving are equally essential as a minimum heritage mediation for future generations, not just in Journalism and Sports Businesses (Dimoulas et al., 2014; 2018). In this context, metadata augmentation and sophisticated content description are employed to archive data, along with quality enhancement tasks, to facilitate broader and easier usage.





**Figure 1:** Snapshots of basketball events: (a). archived material of an old event with quality degradations and poor visual aids; (b). contemporary views with visual analysis aids that alter the offered experience (both in the physical venue and in broadcasted media); (c). use of action cameras for a different viewing experience (Dimoulas, 2020; <https://youtu.be/iXFJMNiCzJo?si=yLRcDIWcVSnqxh0a>; [https://www.youtube.com/live/V\\_AQYFLLMqA?si=sEWKw0bcmCczrf0Z](https://www.youtube.com/live/V_AQYFLLMqA?si=sEWKw0bcmCczrf0Z))



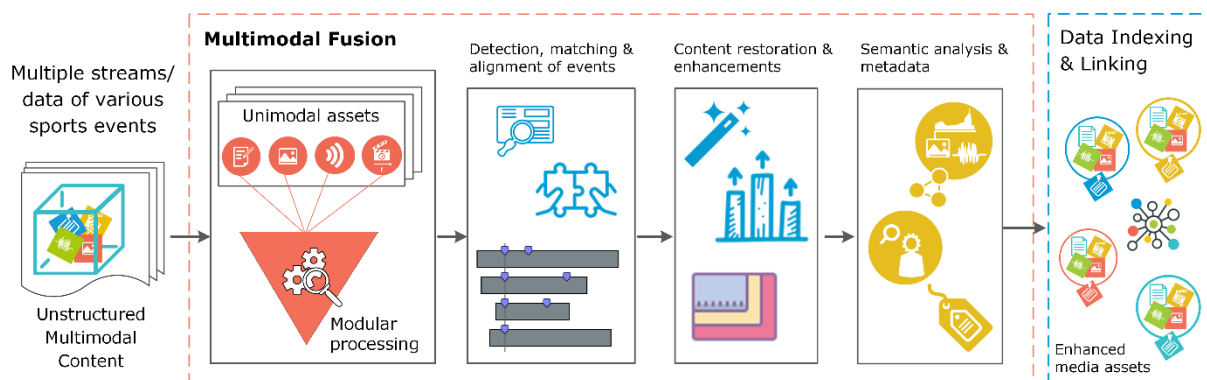
**Figure 2:** Snapshots of football broadcasting footage: (a). archived material of an old event with obvious quality degradations; (b, c, d). contemporary views with visual aids that alter the offered experience (Dimoulas, 2020; [https://youtu.be/rrcsLwUJdQk?si=ZJh1G\\_gPZ2jF8lsP](https://youtu.be/rrcsLwUJdQk?si=ZJh1G_gPZ2jF8lsP)).



**Figure 3:** Indexing and annotation visualization of football and basketball matches: (a). indicating event points within a football match; (b). providing visual aids and statistics concerning spatiotemporal football possession/movements; (c) providing visual aids and statistics concerning spatiotemporal basketball possession/movements (Dimoulas, 2020; Nikolopoulou & Papagianni, 2015; Papachristou, 2016; Filippidis et al. 2018a; 2018b; 2019).

Elaborating on the above remarks, the problem definition can be projected in a block diagram by formulating a mathematical function to be resolved (Figure 4). The implicated solution (indicated by the red dotted frame) is fed by the massive volumes of unstructured data covering multiple sports events (system input), with the desired output being the enhanced and semantically augmented media assets (bluish dotted frame). Indexing and data linking cues are

involved for specific records to be matched (and internally aligned to each other) with specific sports events timelines. More specifically, following the data-flow pipeline of Figure 4, unimodal content entities are extracted from the available media records and are further subjected to detection, matching, and alignment of the targeted athletic events/matches, with content restoration and enchantment needs to be detected and deployed. Then, the implicated modalities (and their advantageous processing/ analysis insights) are combined in a multimodal fusion, thus leading to semantic analysis indexing and metadata augmentation.



**Figure 4:** Block diagram presenting the given problem and the involved processes.

Content preservation is one of the oldest and most critical tasks regarding archives of audiovisual material heritage. Given that technology has been tremendously advanced, old footage and formats used to support lower quality concerning audio and visual resolution, bit depth, noise presence, etc. (Dimoulas, 2022; Dimoulas et al., 2014; Jack, 2011; Kalliris & Dimoulas, 2009; Mourjopoulos, 2005). Hence, traditional audio and image/video enhancement techniques have been employed for many decades to get rid of unwanted contamination components (broadband acoustic background noise, reverberation, salt-and-paper visual artifacts, etc.) utilizing variations of spectral subtraction and spatial filtering, which could also be combined with signal detection and segmentation techniques (Dimoulas et al., 2007a; 2007b; Kalliris et al., 2001; 2016; Tsardoulas et al., 2016; Tsilfidis & Mourjopoulos, 2011; Vegiris et al., 2009). Super-resolution imaging (and audio) techniques were also developed to increase the content sharpness by augmenting the available pixels/sample with new predictions, which, in the case of video enhancements, were also combined with accurate sub-pixel motion estimation (Dimoulas., 2020; Dimoulas et al. 2007b; 2014; Jack, 2011; Konstantoudakis et al., 2018a; 2018b). Nowadays, most of the above restoration and enhancement techniques can be deployed with machine learning algorithms, which can settle both restoration and spatiotemporal resolution enhancement needs by detecting specific motifs/patterns and synthetically generating missing patches (Braun et al., 2021; Jo et al., 2018; Lucas et al., 2019; Rota et al., 2023; Ulyanov et al., 2018; Wang et al., 2018; Zhang et al., 2023).

Concerning media indexing and documentation, data-driven approaches are utilized for content-based audiovisual description and management automations, which have also been employed in recognition of sports actions (Dimoulas, 2020; Filippidis et al., 2019; Kapela et

al., 2015; Pan & Li; 2020; Liu et al., 2021; Wu et al., 2020; Liu et al., 2021). During the last decades, AI-assisted solutions have been dominant, with a broad multidisciplinary presence in multiple fields, from art and (cultural) heritage to media applications, audiovisual production automations, human-machine interaction and more (Chatzara et al., 2019; Dimoulas, 2022; Dimoulas & Veglis, 2023; Dimoulas et al., 2014; Vryzas et al., 2018; 2021a; 2021b). Hence, audio novelty and motion activity tracking techniques have been initially implemented for event detection, segmentation, and summarization purposes, utilizing relevant content-extracted features (Dimoulas et al., 2007a; 2007b; Filippidis et al., 2019; Dimoulas & Kalliris, 2013; Kalliris et al., 2016; Müller, 2007). Sentiment analysis and quality of experience estimation/profiling methods have also been employed in that direction (Kotsakis et al., 2014a; 2014b; Vryzas et al., 2018; 2021a). Multimodal approaches are usually encountered, with audio entailing a significantly lighter computational burden compared to handling visual/motion assets and also proving advantageous in event detection/ matching tasks due to the higher likelihood of shared audio information across different content versions, irrespective of recording device placement or direction—a feature not inherently present in video (Dimoulas & Kalliris, 2013; Dimoulas & Symeonidis 2015; Kalliris et al., 2016). At the same time, the text modality can be proved significantly useful in sports events detection and social media reactions monitoring, baring the most lightweight processing nature (Dimoulas & Veglis, 2023; Fillipidis et al., 2018a; 2018b; Tsolakis, 2023; Tsolakis et al., 2023).

Shifting from machine learning to the era of deep learning architectures, with the availability of large datasets and more sophisticated solutions (i.e., convolutional neural networks, generative adversarial networks, transfer learning techniques and more), the potentials of such data-driven solutions seem unparallel (Liu, 2021; Liu et al., 2021; Lucas et al., 2019; Pan & Li, 2020; Vryzas et al., 2021a; Wang et al., 2018). Still, careful attention is needed while deploying such systems, especially regarding archiving, documentation, and heritage applications. For instance, by applying visual enhancement through generative AI models, there is no safeguard to check the authenticity and preciseness of the synthetically produced imaging patches. While the outcome may seem realistic, improving the offered experience in perceptual terms, a dataset bias may cause unwanted style and pattern errors, altering the character and the whole impression provided by the enhanced content, which might misalign with the heritage aims. Likewise, AI enhancement of heavily noisy speech has been shown to create voicing and pronunciation artifacts, which new generations might not even notice. Finally, with the vast amount of data, available datasets, and the plethora of AI solutions, careful treatment is needed within a standardized framework, like the one proposed by the current research. Otherwise, no matter how smart the deployed solutions are, increased complexity, computational overheads, and unpredictable algorithmic behaviour might cause more problems than the ones we are trying to solve.

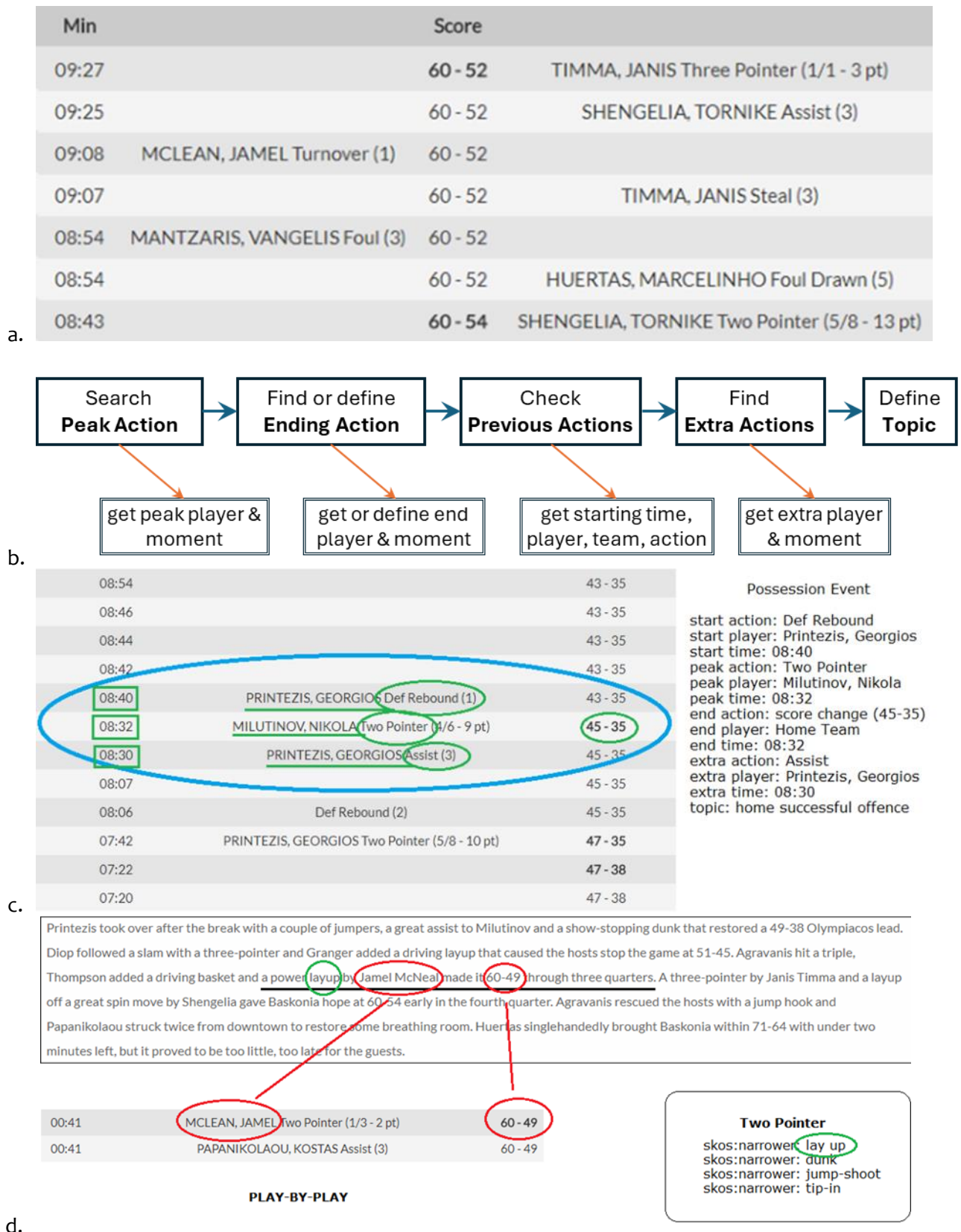
## **The Proposed Framework: Mining Enhanced Content semantics thru sports data (mineCourt)**

The proposed mineCourt approach (Mining Enhanced Content semantics thru sports data) suggests a modular integration framework, targeting enhanced semantics extraction of sports content towards sophisticated indexing and analysis of specific events. With the main aim being to automate the media assets documentation and management utilities, quality enhancements are considered part of the process (even if they have not been extensively applied so far) and can be delivered to facilitate the event detection and segmentation tasks (Dimoulas et al., 2007a; 2007b) or as a sole/explicit procedure, in case old/archived footage or UGC material containing noising artifacts and quality degradations are involved. The first related attempt focused on the implementation of an annotation approach for indexing, summarizing, and visualizing the implicated events in football matches. Specifically, the idea was that radio producers, lively commenting/describing a game, could spatially annotate the actions on a top-view court field view through a web service listing all the encountered football activities (pass, dribble, shot, goal, foul/penalty, etc., Figure 3a) (Nikolopoulou & Papagianni, 2015). The main challenge was to test whether a journalists' pair could commit to the parallel task of commenting and annotating the game without interruptions or flaws in their radio broadcasting descriptions (which proved feasible). Hence, it came up that content could be appropriately annotated with the event in progress, producing rough segmentation and indexing cues while also offering the generated visualization to radio audiences (the ones with no access to video broadcasting) (Dimoulas, 2020; Nikolopoulou & Papagianni, 2015).

The crafted football annotator (Figure 3a) allowed further elaboration, encompassing more specific details on the succession of the activities (e.g., goals will always follow kick actions, i.e., shot, foul, penalty, etc., penalties can be annotated only within the penalty area and so on). This time, the effort was focused on basketball matches, with a tighter state transition diagram providing a roadmap of all possible endings/successions during each event. For instance, a possession change can occur within the following conditions: after a turnover, an offensive foul, a defensive rebound, or a successful basket. Hence, the developed basketball annotator (Figure 4c, left) exhibited enhanced standardization on the available annotation choices, thus minimizing the sets of choices on each decision node and making it easier for the indexing process to be lively conducted (provided that necessary automations are incorporated in the basketball annotator) (Papachristou, 2016; Filippidis et al., 2018a; 2018b). Hence, the fact that basketball matches contain much more internal events that succeed in short times and smaller court areas, using less space (e.g., compared to football), was one of the reasons that pointed our attention to this direction (apart from the personal interest, preferences, and background of the involved researchers). Another challenge was the difference between the broadcasting time and the match clock (with the first being continuous and the second interrupted during the inactive play moments and pauses), making it more difficult to establish a ground time reference for all associated footage, e.g., main coverage streams, highlights, UGC contributions, etc.

(again, compared to football or other sports). A final reason for working on basketball matches/events is that related contemporary research is conducted with similar aims (Liu, 2021; Liu et al., 2021; Pan & Li, 2020; Wu et al., 2020), facilitating, inspiring, or even motivating the current effort. Nonetheless, the selected area is considered a case study in our integration framework, meaning that individual modalities could easily be updated to meet the needs of each different sports match (with less complicated plays).

Returning to the helpful insights and controls provided by the state transition diagram and the annotator updates, further modalities were pursued to facilitate the process by elaborating on the User Interface (UI) of the annotation web service and/or incorporating additional content entities and tools (i.e., broadcasted audio with the match descriptions, textual streaming and standardized play-by-play (PBP) descriptions, voice commanding to state the indexing labels, etc.). The most convenient and impactful data turned out to be the textual information, especially the PBP text provided by each league (e.g., NBA, Euroleague, Greek BasketLeague, etc.). Utilizing Natural Language Processing (NLP) algorithms, these messages can be combined, interpreted, and projected into meaningful events components, dataflows, and summaries (Figure 5), as successfully tested with the minor differentiations in terms and rules used of different leagues (Filippidis et al., 2018a; 2018b). Similar processing can be established with live textual streaming provided by sports websites during a match, utilizing the offered enhanced descriptions to detect buzzwords of possession actions and define the associated events (in combination with the PBPs or in cases they are not available). Apart from its computationally lightweight nature, the important aspect of this textual process lies in its ability to fully align with the states transition diagram and the annotator utility. More interestingly, further audio and video assets can be controlled through a multimodal ontology framework, allowing for multiple broadcasting media and UGC streams to be ingested, matched, and coupled (Anagnostou, 2022; Filippidis et al., 2019; Tsolakis, 2023; Tsolakis et., 2023).



**Figure 5:** Textual processing of the play-by-play (PBP) descriptions for basketball event identification and indexing: (a). example of an indicative PBP segment; (b). PBP events identification flow; (c) events detection and indexing (d). summaries and different vocabulary terms (Filippidis et al. 2018a).



Specifically, voice commanding was considered an alternative input to speed up the annotation process, indicating the class of the associated action (dribble, shoot, pass, etc.) by voice. A multilingual limited-vocabulary speech recognition system (in Greek and English languages) was developed to detect around fifty buzzwords associated with basketball actions. One thousand words per language and user were recorded for a total of five different (5) users to serve system training and testing purposes. Despite the small dataset size, the system achieved excellent performance with a 0.4% word error rate in Greek and 3.18% in English, probably due to pronunciation deficits (Gougousis, 2017). Similar audio recognition was tested in the noise conditions of real basketball games, with poorer accuracy. While buzzword detection performance on the commentary speech was decreased, audio-driven event detection was significantly helpful (detecting audience reaction, referee whistles, court air horns, etc.) (Filippidis et al., 2019; Sfyarakis, 2023).

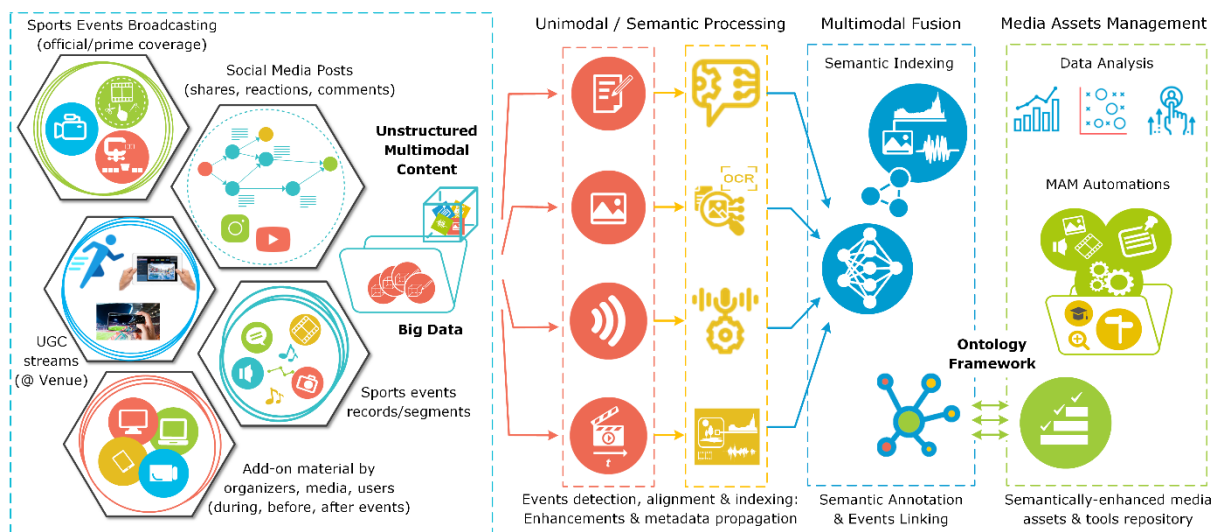
It is essential to mention that the deployed audio processing utilities have yet to be fully exhausted since recent advantages that significantly extend the offered capabilities have been marginally tested and/or incorporated. For instance, blind vocal separation methods have become more powerful combining AI-driven with traditional approaches (Braun et al., 2021; Kalliris et al., 2016; Tsilfidis & Mourjopoulos, 2011), also being available in state-of-the-art applications that average users can efficiently operate with impressive results (e.g., <https://www.lalal.ai/>, <https://ultimatevocalremover.com/>, <https://fadr.com/stems>). Thus, the commenting voices within a TV or radio broadcasting stream can now be much more easily separated from stadium-crowded sounds, thus resulting in precise speech-to-text conversion (even in the real-world conditions of a basketball game) and/or accurate buzzword recognition, which could be further combined with the textual indexing. Moreover, since the official video broadcasting streams can be accurately timed with the textual events by applying machine vision to the superimposed scoreboard (Figure 6), audio syncing cues can be instrumental in aligning extra/UGC content and applying metadata augmentation to all the synchronized segments. Specifically, machine learning solutions facilitate scoreboard detection and tracking, with subsequent match clock extraction supported by Optical Character Recognition (OCR) techniques (Anagnostou, 2022). Therefore, a link between the media/play timeline and the match reference clock is established, with textual event metadata to be easily incorporated and propagated to all the coupled footage (Figure 6).



**Figure 6:** Detection, recognition, and extraction of the match clock to align the textual events with the timelines of the video segments (Anagnostou, 2022).

Figure 7 illustrates the conceptual mineCourt approach with its envisioned functionalities. The modular architecture and integration aspects are of primary focus, in such a fashion that will enable knowledge transfer to similar cases of media coverage and management practices of other (sports) events. The diagram encompasses input sources, proposed unimodal processes, and multimodal fusion, all aimed at delivering content enhancement, documentation, analysis, and management automations. In today’s news ecosystem, apart from mainstream media, news websites, blogs, and UGC content shared through social media platforms have a significant impact on shaping the news reporting landscape, especially for sports events that captivate users’ attention and receive great audience engagement (Dimoulas, 2022; Katsaounidou et al., 2019; Touri & Kostarella, 2017). Hence, mineCourt embodies all the available sources of information contributing to the coverage of an athletic event, namely official broadcasting channels (radio, TV, web streaming), UGC streams captured at the events venues or in associated occasions, add-on material (reports, analyses, interviews, etc.) provided by the sport organizers, media professionals/ journalists, and plenary users/citizen journalists, social media posts that circulate all this information through shares, reactions, and comments. The semiotics behind the co-placed mis-organized/non-aligned circles in the entrance of Figure 7 (left rectangle with cyan dotted line) is that multiple non-alike streams are formed within each content production–distribution cell, requiring integrated/uniform treatment. Therefore, massive unstructured multimodal content items represent the mineCourt inputs, which must be handled in unimodal/semantic processing and multimodal fusion to enhance media assets and management automations. After that, an ontology framework can serve adaptive (sports) events

detection, alignment, and indexing, encompassing data linking mechanisms, semantic meta-data processing, and data analysis tools.



**Figure 7:** Conceptual diagram and functionalities of the proposed mineCourt framework.

## Pilot Results and Discussion

The present study delves into the importance of intelligent sports data documentation, indexing, and management automations, integrating content enhancement and metadata augmentation mechanisms. As a result, a modular architecture is proposed, comprising various sub-systems that can be flexibly combined to address specific requirements. As a result, an integration framework is proposed, containing data-driven solutions with associated dataset repositories that are customizable to meet corresponding needs, coupled with a corresponding data description and linking ontology. This framework provides a systematic approach to managing the diverse range of sports-related data, unlocking opportunities for semantic analysis, annotation, and data linkage. Also, it establishes a sophisticated platform for organizing, retrieving, and interpreting interconnected content, spanning from player insights to fan reactions. This outcome also positively answers the stated research hypothesis: Data-driven/AI-assisted solutions are technologically mature and effective in meeting the desired objectives of improving quality and automating media assets management in the sports/basketball domains. By identifying and utilizing multiple/multimodal streams that describe the same sports event, raw data streams are converted into actionable insights, benefiting various stakeholders such as coaches, sports analysts, journalists, and enthusiasts, enhancing the overall sports experience.

Elaborating on the above remarks in relation to the inputs and data flow of Figure 7, apart from the main media coverage of a sports event, multiple linked assets are equally important or more, even if they have entirely different spatiotemporal characteristics. For instance, with the occasion of a basketball game, similar content of previous seasons, including players, teams,

and analysis perspectives, might be as valuable/enjoyable for media professionals, sports analysts, the involved (and other) basketball teams, and the public audience. Even when someone is interested only in the main event, the availability of manifold streams can cover multiple aspects. Hence, radio broadcasting can stimulate emotions different from those caused by the TV coverage experience, with more vivid/thorough speech narrations. Likewise, UGC posts provide subjective views from multiple angles, encompassing versatile semantics, conceptual, and sentimental insights (i.e., regarding cheering sounds, public reactions, events-related marginal details, small-scale/local incidents, etc.).

Furthermore, textual descriptions of PBP and web-streaming services usually contain stricter/more accurate (and less verbose) points to facilitate the time-indexing process. The superimposed video scoreboard can be used for extracting match clock as a syncing reference to texts and other modalities (which can be easily deployed with reduced computational load), thus serving alignment and semantic metadata propagation (i.e., spatiotemporal, contextual, and emotional labels). Content syncing is imperative for subsequent audio/video enhancements by selecting the best quality footage and/or deploying time delay compensation and spatial/imaging filtering techniques. The sound modality seems preferable in this direction due to its lightweight nature and omnidirectional presence, and it can also serve speech recognition, buzzword detection, audio-driven segmentation, and indexing, which can be further utilized in multimodal fusion. The available material can also drive the generative synthesis of missing viewpoints through AI. Most importantly, all these processes are to be controlled under an ontology framework to deliver all the coupling between data, metadata, events linking/ aligning, and algorithmic tools.

Extending the above, Table 1 showcases individual components developed and tested within the mineCourt framework, many stemming from Ph.D. research and diploma dissertations conducted at the Laboratory of Electronic Media of Aristotle University (<https://e-media.jour.auth.gr/>). Their presentation aims to demonstrate the maturity and validity of the proposed integration rather than evaluate individual modalities. Even so, most results are comparable to the current state of research. Hence, the crafted football and basketball annotators, to start with, have been put in related (subjective) evaluation procedures and proved that they do not lack in the offered usability, visualization and indexing functionalities, compared even to market solutions of media/sports domains (Dimoulas, 2020; Nikolopoulou & Papagianni, 2015; Papachristou; 2016). A manifold of audio classification and speech recognition tools have been implemented with remarkable accuracy ( $\geq 90\%$ ) in segmenting basketball events (commenting speech, referee whistles, court air horns, audience reactions like boos, applause, and cheering) (Filippidis et al. 2019; Sfyraakis, 2023), detecting buzzwords associated with basketball actions (Gougousis, 2017), extracting bimodal segmentation footprints for content matching and alignment purposes (Dimoulas & Symeonidis, 2015). Textual/PBP processing enabled successful detection and indexing of possession events (Filippidis et al., 2018a; 2018b), synchronized with video timelines using visual scoreboard

detection/tracking and game clock extraction (with remarkable accuracy of over 90-95%) (Anagnostou, 2022). Finally, a prototype sports indexing and retrieval front-end has been developed and coupled with a unified data ontology for serving data description, linking, and metadata propagation/enhancement facilities (Anagnostou, 2022; Tsolakis, 2023; Tsolakis et al., 2023). This ontology has been established and validated with basketball games of three different leagues (NBA, Greek Basket League, Euroleague) (Tsolakis, 2023; Tsolakis et al., 2023). Most of all, the proposed integration framework drives best practices adoption and knowledge transfer to (sports) media examples with similar management/analysis needs.

**Table 1:** Presentation of deployed mineCourt components with the associated maturity, integration, progress, and future expectations.

Related work	Description	Outcomes: Maturity – Integration
Nikolopoulou & Papagianni (2015)	Radio commentary of a football match with (spatial) annotation of the possession events	- football annotator (web service) - football possessions visualization and indexing
Papachristou (2016)	Basketball actions vocabulary and state transition diagram	- basketball annotator (web service) - basketball possessions visualization and indexing
Dimoulas & Symeonidis (2015)	Syncing shared media through audio-driven bimodal segmentation	- audio-driven segmentation and footprint extraction method - syncing of shared media with emphasis on sports events
Gougousis (2017)	Limited-vocabulary automatic speech recognition of basketball buzzwords/actions	- accurate recognition of basketball words (in clean recordings) - speech recognition dataset/code - voice dictation/input to basketball annotator
Filippidis et al. (2018a; 2018b)	Detection and semantic indexing of basketball possession events using textual streams (PBPs)	- basketball annotator (web service) with enhanced control automations - natural language processing of textual PBP descriptions to define/index basketball possession events
Filippidis et al. (2019), Sfyarakis (2023)	Audio-driven basketball events segmentation and indexing	- audio segmentation and classification of basketball events (code/datasets) - speech and buzzword recognition - voice separation & future expectations (enhancement, re-mixing, etc.)
Anagnostou (2022)	Audiovisual basketball events detection and spatiotemporal localization/indexing	- scoreboard detection/tracking and match clock extraction in official videos - textual/PBP events processing and syncing with video timelines - content indexing/retrieval interface and algorithmic backend (code/dataset)

Tsolakis (2023), Tsolakis et al. (2023)	Ontology-based Framework for Sports Media Management	<ul style="list-style-type: none"> <li>- data handling and managing framework</li> <li>- semantic data linking and metadata enhancement</li> <li>- basketball vocabulary adaptation with events indexing mechanisms</li> </ul>
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## References

- Anagnostou A. (2022). *Audiovisual event detection and localization techniques in sports content*. Unpublished Diploma Thesis (<https://github.com/Nasos-Anagnostou/Audiovisual-event-detection-and-localization-techniques-in-sport-content/tree/main/The%20final%20stack>). School of Electrical and Computer engineering, Aristotle University of Thessaloniki, Greece.
- Bellamy, R. V. (2009). Sports media: A modern institution. In *Handbook of sports and media* (pp. 66-79). Routledge.
- Boulianne, S. (2020). Twenty years of digital media effects on civic and political participation. *Communication research*, 47(7), 947-966.
- Braun, S., Gamper, H., Reddy, C. K., & Tashev, I. (2021, June). Towards efficient models for real-time deep noise suppression. In *ICASSP 2021-2021 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)* (pp. 656-660). IEEE.
- Chatzara, E., Kotsakis, R., Tsipas, N., Vrysis, L., & Dimoulas, C. (2019). Machine-assisted learning in highly-interdisciplinary media fields: A multimedia guide on modern art. *Education Sciences*, 9(3), 198.
- Dimoulas, C. A., & Veglis, A. (2023). Theory and Applications of Web 3.0 in the Media Sector. *Future Internet*, 15(5), 165.
- Dimoulas, C. A. (2022). Cultural heritage storytelling, engagement and management in the era of big data and the semantic web. *Sustainability*, 14(2), 812.
- Dimoulas, C. (2020). Media Technologies & Sports: A timeless relationship of strong interaction. In Twigil's N. & Mastrogiannakis D. (Eds.) *Sport and Media: Rhetoric, identities and representations*, pp. 211-242. Zygos, Thessaloniki.
- Dimoulas, C., Veglis, A. A., & Kalliris, G. (2018). Semantically enhanced authoring of shared media. In *Encyclopedia of Information Science and Technology, Fourth Edition* (pp. 6476-6487). IGI Global.
- Dimoulas, C. A. (2016). Audiovisual spatial-audio analysis by means of sound localization and imaging: A multimedia healthcare framework in abdominal sound mapping. *IEEE Transactions on Multimedia*, 18(10), 1969-1976.
- Dimoulas, C. A., & Symeonidis, A. L. (2015). Syncing shared multimedia through audiovisual bimodal segmentation. *IEEE MultiMedia*, 22(3), 26-42.
- Dimoulas, C. A., Kalliris, G. M., Chatzara, E. G., Tsipas, N. K., & Papanikolaou, G. V. (2014). Audiovisual production, restoration-archiving and content management methods to preserve local tradition and folkloric heritage. *Journal of Cultural Heritage*, 15(3), 234-241.
- Dimoulas, C. A., & Kalliris, G. M. (2013, May). Investigation of wavelet approaches for joint temporal, spectral and cepstral features in audio semantics. In *Audio Engineering Society Convention 134*. Audio Engineering Society.
- Dimoulas, C. A., Avdelidis, K. A., Kalliris, G. M., & Papanikolaou, G. V. (2007). Joint wavelet video denoising and motion activity detection in multimodal human activity analysis: application to video-assisted bioacoustic/psychophysiological monitoring. *EURASIP Journal on Advances in Signal Processing*, 2008, 1-19.

- Dimoulas, C. A., Avdelidis, K. A., Kalliris, G. M., Papanikolaou, G. V., & Vegiris, C. (2007, May). Automated audio detection, segmentation and indexing, with application to post-production editing. In *Audio Engineering Society Convention 122*. Audio Engineering Society.
- Filippidis, P. M., Dimoulas, C., Bratsas, C., & Veglis, A. (2018). A multimodal semantic model for event identification on sports media content. *Journal of Media Critiques [JMC]*, 4(14).
- Filippidis, P. M., Dimoulas, C., Bratsas, C., & Veglis, A. (2018). A unified semantic sports concepts classification as a key device for multidimensional sports analysis. In *2018 13th International Workshop on Semantic and Social Media Adaptation and Personalization (SMAP)* (pp. 107-112). IEEE.
- Filippidis, P. M., Vryzas, N., Kotsakis, R., Thoidis, I., Dimoulas, C. A., & Bratsas, C. (2019). Audio Event Identification in Sports Media Content: The Case of Basketball. In *Proceedings of the 146th Audio Engineering Society Convention*, Dublin, 20-23 March 2019.
- Fuss, F. K., Subic, A., Strangwood, M., & Mehta, R. (2013). *Routledge Handbook of Sports Technology and Engineering*. New York, USA: Routledge.
- Gougousis H. (2017). *Speech recognition and voice command assisted human-machine interaction* (in Greek). Diploma Thesis (<http://ikee.lib.auth.gr/record/294611>). School of Electrical & Computer engineering, Aristotle University of Thessaloniki, Greece.
- Jack, K. (2011). *Video demystified: a handbook for the digital engineer*. Elsevier.
- Jenkins, H., & Ito, M. (2015). *Participatory culture in a networked era: A conversation on youth, learning, commerce, and politics*. John Wiley & Sons.
- Jo, Y., Oh, S. W., Kang, J., & Kim, S. J. (2018). Deep video super-resolution network using dynamic upsampling filters without explicit motion compensation. In *Proceedings of the IEEE conference on computer vision and pattern recognition* (pp. 3224-3232).
- Kalliris, G., Dimoulas, C., & Papanikolaou, G. (2001). Broad-band acoustic noise reduction using a novel frequency depended parametric Wiener filter: implementations using filter-bank, STFT and wavelet analysis/synthesis techniques. *Audio Engineering Society Preprint, Proceedings of the 110th AES Convetion, Amsterdam*.
- Kalliris, G., & Dimoulas, C. (2009, May). Audiovisual content management issues for the new media environment. In *Proceedings of the International Conference on New Media and Information: Convergences and Divergences, Athens, Greece* (pp. 3-6).
- Kalliris, G., Matsiola, M., Dimoulas, C. A., & Veglis, A. (2014, July). Emotional aspects in Quality of Experience and Learning (QoE & QoL) of audiovisual content in mediated learning. In *IISA 2014, The 5th International Conference on Information, Intelligence, Systems and Applications* (pp. 198-203). IEEE.
- Kalliris, G. M., Dimoulas, C. A., & Uhle, C. (2016). Special Issue on Intelligent Audio Processing, Semantics, and Interaction. *Journal of the Audio Engineering Society*, 64(7), 464-465.
- Kapela, R., Świetlicka, A., Rybarczyk, A., & Kolanowski, K. (2015). Real-time event classification in field sport videos. *Signal Processing: Image Communication*, 35, 35-45.
- Katsaounidou, A., Dimoulas, C., & Veglis, A. (2019). *Cross-media authentication and verification: emerging research and opportunities: emerging research and opportunities*. IGI Global. <https://doi.org/10.4018/978-1-5225-5592-6>.
- Katsaounidou A., Matsiola M., Dimoulas C. (2018). Controversial content broadcasting and the role of television. In *Proceedings of the International Conference 50 Years of Greek Television*, Epikentro, Thessaloniki 2018.
- Konstantoudakis, K., Vrysis, L., Tsipas, N., & Dimoulas, C. (2018). Block unshifting high-accuracy motion estimation: a new method adapted to super-resolution enhancement. *Signal Processing: Image Communication*, 65, 81-93.

- Konstantoudakis, K., Vrysis, L., Papanikolaou, G., & Dimoulas, C. (2018). High accuracy block-matching sub-pixel motion estimation through detection of error surface minima. *Multimedia Tools and Applications*, 77, 5837-5856.
- Kotsakis, R., Dimoulas, C. A., Kalliris, G., & Veglis, A. (2014, July). Emotional descriptors and quality of experience (QoE) metrics in evaluating mediated learning. In *IISA 2014, The 5th International Conference on Information, Intelligence, Systems and Applications* (pp. 232-237). IEEE.
- Kotsakis, R., Dimoulas, C., Kalliris, G., & Veglis, A. (2014). Emotional prediction and content profile estimation in evaluating audiovisual mediated communication. *International Journal of Monitoring and Surveillance Technologies Research (IJMSTR)*, 2(4), 62-80.
- Liu, R., Liu, Z., & Liu, S. (2021). Recognition of basketball player's shooting action based on the convolutional neural network. *Scientific Programming*, 2021, 1-8.
- Liu, L. (2021). Objects detection toward complicated high remote basketball sports by leveraging deep CNN architecture. *Future Generation Computer Systems*, 119, 31-36.
- Lucas, A., Lopez-Tapia, S., Molina, R., & Katsaggelos, A. K. (2019). Generative adversarial networks and perceptual losses for video super-resolution. *IEEE Transactions on Image Processing*, 28(7), 3312-3327.
- Matsiola, M., Dimoulas, C.A., Kalliris, G., & Veglis, A., (2015). Augmenting User Interaction Experience through Embedded Multimodal Media Agents in Social Networks. In: J. Sahlin, (Ed). *Social Media and the Transformation of Interaction in Society*. (pp.188–209) Hershey PA: IGI Global.
- Mourjopoulos, J. N. (2005). The evolution of digital audio technology. In *Communication acoustics* (pp. 299-319). Berlin, Heidelberg: Springer Berlin Heidelberg.
- Müller, M. (2007). *Information retrieval for music and motion* (Vol. 2, p. 59). Heidelberg: Springer
- Nikolopoulou V. & Papagianni C. (2015, Oct.). *Broadcasting and intelligent analysis of audiovisual sport events: the case of football* (in Greek). Unpublished Thesis. School of Journalism and Mass Communications, Aristotle University of Thessaloniki, Greece.
- Owens, J. (2015). *Television sports production*. New York & London: Focal Press (5<sup>th</sup> Ed.).
- Palioura, M., & Dimoulas, C. (2022). Digital storytelling in education: A transmedia integration approach for the non-developers. *Education Sciences*, 12(8), 559.
- Pan, Z., & Li, C. (2020). Robust basketball sports recognition by leveraging motion block estimation. *Signal Processing: Image Communication*, 83, 115784.
- Papachristou T. (2016, September). *Intelligent analysis of sports events – the case of basketball*. Unpublished Thesis (in Greek). Unpublished Thesis. School of Journalism and Mass Communications, Aristotle University of Thessaloniki, Greece.
- Podara, A., Giomelakis, D., Nicolaou, C., Matsiola, M., & Kotsakis, R. (2021). Digital storytelling in cultural heritage: Audience engagement in the interactive documentary new life. *Sustainability*, 13(3), 1193.
- Podara, A., Matsiola, M., Maniou, T. A., & Kalliris, G. (2019). Transformations of television consumption practices: An analysis on documentary viewing among post millennials. *Particip. J. Audience Recept. Stud*, 16(2), 68-87.
- Raney, A. A., & Bryant, J. (2009). *Handbook of sports and media*. Routledge.
- Romney, M., & Johnson, R. G. (2020). Show me a story: narrative, image, and audience engagement on sports network Instagram accounts. *Information, communication & society*, 23(1), 94-109.
- Rota, C., Buzzelli, M., Bianco, S., & Schettini, R. (2023). Video restoration based on deep learning: a comprehensive survey. *Artificial Intelligence Review*, 56(6), 5317-5364.



- Saridou, T. A., & Veglis, A. (2021). *Exploring the Integration of User-Generated Content in Media Organizations Through Participatory Journalism*. In Encyclopedia of Information Science and Technology, Fifth Edition (pp. 1152-1163). IGI Global.
- Sfyarakis E. (2023). *Detection and recognition of audio events in basketball games* (in Greek). Diploma Thesis (<http://ikee.lib.auth.gr/record/351509>). School of Electrical and Computer engineering, Aristotle University of Thessaloniki, Greece.
- Sidiropoulos, E., Vryzas, N., Vrysis, L., Avraam, E., & Dimoulas, C. (2019). Growing media skills and know-how in situ: Technology-enhanced practices and collaborative support in mobile news-reporting. *Education Sciences*, 9(3), 173.
- Touri, M., & Kostarella, I. (2017). News blogs versus mainstream media: Measuring the gap through a frame analysis of Greek blogs. *Journalism*, 18(9), 1206-1224.
- Tsardoulias, E., Thallas, A. G., Symeonidis, A. L., & Mitkas, P. A. (2016). Improving multilingual interaction for consumer robots through signal enhancement in multichannel speech. *Journal of the Audio Engineering Society*, 64(7/8), 514-524.
- Tsilfidis, A., & Mourjopoulos, J. (2011). Blind single-channel suppression of late reverberation based on perceptual reverberation modeling. *The Journal of the Acoustical Society of America*, 129(3), 1439-1451.
- Tsolakis, N., Vryzas, N., Dimoulas, C., Maga-Nteve, C., Meditskos, G., & Vrochidis, S. (2023, July). An Ontology-Based Framework for Sports Media Data Interpretation. In *2023 14th International Conference on Information, Intelligence, Systems & Applications (IISA)* (pp. 1-8). IEEE.
- Tsolakis N. (2023). *Ontology-based framework for semantic content in sports: application in basketball games retrieval*. Diploma Dissertation (<http://ikee.lib.auth.gr/record/349551>). Post-Graduate Program on Advanced Computing and Communication Systems, School of Electrical and Computer Engineering, Aristotle University of Thessaloniki, Greece.
- Ulyanov, D., Vedaldi, A., & Lempitsky, V. (2018). Deep image prior. In *Proceedings of the IEEE conference on computer vision and pattern recognition* (pp. 9446-9454).
- Vázquez-Herrero, J., & López-García, X. (2019). When media allow the user to interact, play and share: Recent perspectives on interactive documentary. *New Review of Hypermedia and Multimedia*, 25(4), 245-267.
- Vegiris, C. E., Avdelidis, K. A., Dimoulas, C. A., & Papanikolaou, G. V. (2008). Live broadcasting of high definition audiovisual content using HDTV over broadband IP networks. *International Journal of Digital Multimedia Broadcasting*, 2008.
- Vegiris, C., Dimoulas, C., & Papanikolaou, G. (2009, May). Audio Content Annotation, Description, and Management Using Joint Audio Detection, Segmentation, and Classification Techniques. In *Audio Engineering Society Convention 126*. Audio Engineering Society.
- Vryzas, N., Vrysis, L., Kotsakis, R., & Dimoulas, C. (2018, September). Speech emotion recognition adapted to multimodal semantic repositories. In *2018 13th International Workshop on Semantic and Social Media Adaptation and Personalization (SMAP)* (pp. 31-35). IEEE.
- Vryzas, N., Vrysis, L., Kotsakis, R., & Dimoulas, C. (2021). A web crowdsourcing framework for transfer learning and personalized speech emotion recognition. *Machine Learning with Applications*, 6, 100132.
- Vryzas, N., Vrysis, L., & Dimoulas, C. (2021). Audiovisual speaker indexing for Web-TV automations. *Expert Systems with Applications*, 186, 115833.
- Wang, X., Yu, K., Wu, S., Gu, J., Liu, Y., Dong, C., ... & Change Loy, C. (2018). Esrgan: Enhanced super-resolution generative adversarial networks. In *Proceedings of the European conference on computer vision (ECCV) workshops* (pp. 0-0).

- Wu, L., Yang, Z., Wang, Q., Jian, M., Zhao, B., Yan, J., & Chen, C. W. (2020). Fusing motion patterns and key visual information for semantic event recognition in basketball videos. *Neurocomputing*, 413, 217-229.
- Zhang, K., Zuo, W., Gu, S., & Zhang, L. (2017). Learning deep CNN denoiser prior for image restoration. In *Proceedings of the IEEE conference on computer vision and pattern recognition* (pp. 3929-3938).

## **Digital media, consumer culture and the city: An investigation of the relationship between youth lifestyles and cultural spaces**

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### **Abstract**

Consumption is linked with the contemporary urban way of life, identity formation and social meanings. In addition, the term ‘digitalisation’ is continuously attracting researchers’ attention from various academic disciplines. More specifically, the digital effect on consumption practices has impacted upon the multiple ways consumers seek validation for their choices. Young people are able to use their digital devices and social media applications to capture photos and videos in order to represent cultural spaces. This presentation is based on the research project LOCUS “social media, youth and Consumption of Cultural Spaces” and a qualitative study with young people, as well as communication and marketing professionals who work on cultural institutions in order to understand the wider socio-cultural processes, the digitally mediated youth lifestyles and young people’s sense of belonging in cultural spaces.

**Keywords:** consumer culture, social media, city, cultural spaces, youth.

### **Introduction**

During the past decades the academic debate in relation to consumer culture and the marketisation of spaces and places has been at the centre of the attention (Crewe and Beaverstock, 1998, Zukin, 1998). This was reflected in the attempts to understand the meaning of “urban lifestyles” both for individuals and the cities. The high visibility of new urban consumption spaces has generated a new visually oriented culture of “aestheticisation” of public spaces. In this way, spaces and places are increasingly organised by consumption practices (Mullins et al., 1999). In addition, the narratives regarding the commodification of urban space, and in particular the city, produce and reproduce the social imaginaries linked to the notion of consumerism. This paper focuses on the multiple ways that such dominant representations of place are interrelated with youth lifestyles in the social media era. More specifically, it puts at its centre the digitally mediated relationship of young people with cultural spaces.

Theoretical and academic discussions of consumption have been relatively slow to engage with the complex characteristics of the interrelationships that we can find between the physical and the digital (Turkle, 1999). In particular, it could be argued that such relationships are increasingly (re)produced in urban settings, and more specifically, in cultural spaces. Cultural spaces have gradually begun to provide one of the primary contexts within the city where

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consumers engage with experiential forms of consumption (Thompson, 2015). In spite of this, questions around the intersection of urban settings, media and the digitalisation of consumer culture remain under-explored to a great extent. In this context, this is the main aim of the research project *LOCUS* “*social media, youth and Consumption of cultural Spaces*” funded by the Hellenic Foundation of Research and Innovation in which the author of this paper is the Principal Investigator (PI) and Scientific Coordinator. It is an ongoing project that started in October 2022 and the Host Institution is the Panteion University of Social and Political Sciences, Department of Communication, Media and Culture. In particular, the project *LOCUS* tries to understand the continuous transformations in the complex ways that young people communicate and engage on social media platforms in relation to cultural spaces.

One of the authors who has contributed to the theoretical and empirical debate as well as the complexities deriving from any attempts to an in-depth understanding of the social and cultural importance of the relationship between media and the city is Myria Georgiou (2013). Georgiou focuses on digital connectivity and the multiple ways that it (re-)makes the city as space for experiencing and imagining subjectivities, arguing that:

[T]he global city’s cultural diversity becomes the platform for imagining oneself in the world, and digital connectedness becomes a tool for making worldliness manageable. Urban imaginaries are collective, discursively constructed processes that involve mental mappings of city spaces as sites of opportunity or exclusion. As internalized meaning-making mechanisms for understanding the city, its opportunities, and its limits, they resound stratified physical and digital urban mobilities (Georgiou, 2016: 3704).

The discussion that follows highlights the theoretical background of this study in relation to consumption, young people and the city. Additionally, we are interested in the digitalisation of consumption and the role of social media, which are linked to youth lifestyles and as a result to their physical and digital connectivity to cultural spaces. Drawing on some preliminary findings from a pilot study in the context of the project *LOCUS* which was completed eight months from its beginning, there is an attempt to analyse in what ways young people engage with cultural institutions. The qualitative data which are analysed and presented here come from semi-structured interviews with professionals in cultural organisations in the field of communication and marketing, as well as, photo-elicitation interviews with young people between the ages of 16 and 30 years old during the pilot study. After the theoretical background of this paper, it follows a brief discussion of the methodology. Finally, we examine the way that cultural institutions approach technological changes and in what ways young people make sense of cultural spaces.

## **Theoretical background**

### **Consumption, youth and the city**

There are not many people who would be in a position to question the significance of youth consumption within the current socio-economic and cultural context. In light of this, it is within the urban settings that young people's consumption practices gain even more importance (Leccardi, 2016). Of course, it is generally accepted that it was the process of urbanisation which have enabled consumption to thrive within the postmodern context to a great extent. There is no doubt that the link between shops and socio-cultural life in the city can be summarised in the historic representations of galleries, department stores, arcades etc. (Featherstone, 1998). During the last decades, shopping malls -the contemporary cathedrals of consumerism (Corrigan, 1997)- have become one of the core features of young people's engagement with consumption practices. What is important here is that the research about the city was mainly developed in relation to economic activity and growth. Only later, during the 1980s, there were some attempts to investigate the socio-cultural interrelationship between consumerism and the city (Glennie, 1998). In this context, consumption is linked with the contemporary urban way of life, identity formation and social meanings.

It is suggested that in order to be able to investigate young people's experiences in the contemporary context, there is an increasing need to pay attention to the dimension of space (Skelton and Valentine, 1998). The connection between young people and spatiality has been described through the study of youth cultures and subcultures (Farrugia and Wood, 2017). More specifically, researchers have focused on young people's urban living, such as the cases of night life, deviant behaviour, youth at-risk etc. (Chatterton and Hollands, 2002). In youth studies, the conceptualisation of the metaphor of transition has been used to explain young people's linear development, their progression to adulthood, and their path from education to employment (Furlong and Cartmel, 1997). From an urban studies perspective, one of the criticisms related to the notion of youth transitions is linked to the theoretical assumption about the significance of the relationship between the issue of temporality and the wider processes of social change (Leccardi, 2005). In other words, it could be argued that there is a lack of analysis and understanding of youth identities through the lens of spatiality and the notion of space. The attention here is in the (re)production of young people's social relations both in local and global scale.

Researchers have examined the multiple ways that young people negotiate their identities in relation to everyday practices and the mundane (White et al., 2017). It is suggested that modern youth cultures and their relationship with urban fashion, music style, clothing etc. highlight the importance of symbolic values and aesthetics (Bennett, 2018). There is an increasing interest in city cultures and youth urban lifestyles. As Featherstone (2007) argues, the boundaries between high culture as an expression of arts and popular culture are gradually blurred. This is manifested in the distinction between youth lifestyles as class defined or as an active way to

engage with everyday life (Miles, 2000). Of course, it is widely accepted that when it comes to sociological and cultural perspectives on youth lifestyles, places inside and around the city are the centre of academic attention (Robinson, 2000). However, it has to be mentioned that there is a critique of the exclusion of the rural perspective in any attempts and approaches for a geographical oriented youth sociology (Farrugia, 2014). Before analysing the impact of social media in the relationship between young people and urban space, we need to focus on the effects of digitalisation on consumption.

### **The digitalisation of consumption**

The term ‘digitalisation’ is continuously attracting researchers’ attention from various academic disciplines. Within the consumption and consumer culture studies, it is imperative to investigate whether and to what extent reproduces or challenges our previous knowledge about self-expression and mass consumption. In this context, we need to reconsider one’s relationship to clothes, leisure, music preferences and other products through the lens of new technologies and digital media. It is important to highlight that the everyday consumption practices and styles of life have been digitalised (Nowak, 2016). Of course, this general transition towards digital consumer culture that is based on screen culture, mobile applications and the Internet, would not suggest the end of the physical consumption. However, even if people still seek forms of more traditional consumption as a source of identity formation, Belk (2014: 1106) suggests that:

Besides digital devices and avatars, there are also a number of purely digital possessions that have emerged and that potentially form a part of the extended self in the same way that the tangible possessions and other people (either as part of aggregate or as ‘possessions’) can. These digital possessions include photos, videos, music, books, greeting cards, emails, text messages, web pages, virtual real estate and virtual possessions such as clothing, furniture, weapons, cars, magical spells and shields for our avatars.

The digital effect on consumption practices and the increasing level of participation of each consumer to the processes have impacted upon the decision making, especially in the multiple ways consumers seek validation for their choices in the digital environment increasing the continuous engagement with elements of shopping (Ashman et al., 2015). The new digital sphere introduces also new technological operations and platform infrastructures that produce personalised forms of data through ‘computational consumption’ (Alaimo, 2014). For Śledziewska and Włoch (2021), digital devices are at the core of the transition to this digital economy, as well as the significant role of digital platforms that promote online shopping and collaborative consumption. More specifically, they argue that new forms of digital consumption are related with ‘digital information goods’ (e.g. e-books) and ‘intelligent products’ (wearables). In this sense, the world of digital goods is central to the understanding of digital society.

According to Featherstone (2007: 83), “consumption, then, must not be understood as the consumption of use-values, a material utility, but primarily as the consumption of signs”. To a similar extent, it could be argued that digital consumption reflects the online consumption of signs and representations. In a way, this emphasises the dominant position of digitalised culture in the reproduction of consumer capitalism. In addition, Hesmondhalgh and Meier (2018) argue that the digital changes in the creative and cultural industries signify a transformation both in businesses and consumption practices. In particular, while they focus more on the music industry, they attempt to understand the new technological landscape by putting emphasis on the Internet-connected PC and mobile phones as the main digital alterations that have played a significant role in the reinvention of consumer experiences. They suggest that such transformations reflect a wider transition to higher levels of atomisation, what they describe as ‘networked mobile personalisation’.

It is important to highlight that the digitalisation of consumption is not only related to people’s practices, products and business strategies. It could be argued that it is related also with the notion of marketplace. In this way, we need to consider the online shopping terrain as the modern marketplace in which commercial exchanges through global and local e-retailers. However, we need to consider that nowadays e-retailing is not the only form of marketplace, but social networking sites are arenas in which the sense of consumerism is present and ‘turbocharged’.

### **Urban space, young people and social media**

For the specific discussion, it is significant to highlight that commentators have put emphasis on the role of power as the normative way to advance particular representations of the urban space related with specific interests and ideological backgrounds (Lefebvre, 1991). In the wider context of the social media era, we need to acknowledge that the ways the city might be represented is not necessarily linked with traditional sources of such representations. Instead, it could be argued that people are able to use their digital devices and social media applications to capture photos and videos in order to represent the urban settings in multiple and different ways (Hatuka and Toch, 2014). In a sense, it appears to be their own choice what to include and exclude from their posts and profiles. However, we need still to be critical to what extent such choices and selections are independent of power structures in contemporary cities. More specifically, it is important to focus on the ways young people represent the urban space in relation to their everyday lives through social media.

Over the last two decades and due to the proliferation of social media platforms, the online self-presentation practices are something that is widely explored and discussed (boyd, 2014). What is interesting here for our discussion is that the locative services of social networking sites and the capability to link a post with a specific location has transformed to a great extent the self-presentation practices in relation to spaces (de Souza e Silva and Frith, 2012). According to Hatuka et al. (2020), the impact of digital platforms is linked with an individual’s everyday way

of life as well as with the material and physical settings of places within people are obliged to navigate their lives. For Martin and Rizvi (2014), in their research about young international students in the city of Melbourne, ‘media reterritorialization’ can be enabled through social media practices in relation to how young people find ways to engage with the city as a locality. In light of this, social media platforms can provide a source to actively interact with the city and promote young people’s emotional involvement with local places.

During a research project in China about young people and social media representations in urban settings, Peng (2019) has investigated the online sharing practices of geotagged food-related content photographs. The research reveals that such young people’s sharing practices are part of the middle-class urbanites’ daily contemporary lifestyles. In addition, particularly interesting is the work of Boy and Uitermark (2017) on Instagram who argue that representations on social networking sites reproduce and enhance the phenomenon of gentrification from the moment that people engage in multiple ways of the aestheticisation of the routine and the banal reinforcing the places of consumption. Based on their research, they argue that Instagram is a unique way of presenting and consuming the city as it creates an image of the urban setting that is fully perfect and without any significant elements of negative emotions. They articulate it like this:

The feeds are full of desirable items, attractive bodies, beautiful faces, healthy foods, witty remarks and impressive sceneries. The messiness and occasional gloom and doom of the city have no place there. Instagram users are acutely aware of the images’ selectivity; it is what excites them about the platform and it is also what, occasionally, causes them stress as they feel they have to follow suit and produce images that their followers will appreciate (Boy and Uitermark, 2017: 622).

This reminds us the discussion of Leurs and Georgiou (2016) about the significance of socio-cultural practices in relation to young people’s connection and belonging between the local urban and the global. On the one hand, media, and in particular social media, practices sometimes might reflect the adoption and reproduction of dominant narratives and cultures, on the other hand, disadvantaged youth might use such mediated ways to oppose national boundaries in their quest to engage with more respectful global spaces.

## **Methodology**

Following the above theoretical discussion about young people, social media consumption and urban space, for the purposes of the research project *LOCUS* we are mostly interested in cultural spaces. In the context of the pilot study, the main research question is about the role of social media consumption in the relationship between youth identities and cultural spaces. One of the aims of the *LOCUS* study is to understand the meanings of youth everyday experiences in the current socio-economic context. In addition, we are interested in analysing the social media usage from the cultural institutions’ perspective. In this way, we try to shed light on what individuals who work in the communication, marketing and content creation departments of



cultural organisations consider about the continuous digital transformations in relation to young people's engagement with cultural aspects.

In this context and in order to answer our questions, we investigate the aforementioned themes through our qualitative pilot research. In this way, we focus on social relations and we are interested in-depth understanding of human behaviour. It is considered that the issues explored in this study are part of wider socio-cultural processes (Crotty, 1998). In other words, in order to be able to understand the socio-cultural everyday context, we need to apply research method and techniques that help us answer the questions of *how* and *why*. Through a qualitative thematic analysis, we try to interpret the meaning of the data beyond the surface, as well as to understand processes which are not widely known (Braun and Clarke, 2013, Strauss and Corbin, 1990). More specifically, in the project *LOCUS* we focus on three cultural institutions in Athens, Greece as our case studies: the Public Benefit Onassis Foundation; the Stavros Niarchos Foundation Cultural Center (SNFCC); and the Acropolis Museum.

The analysis and the presentation of data that follows is based on some preliminary findings from the pilot study of the research. The pilot study has mainly two parts: the first is related to the cultural institutions and the second to young people. About the former, we have selected to proceed with semi-structured interviews with two individuals who work in the cultural institutions and they are considered specialists within the communication and social media sections in their organisations. Our intention was to have a larger number of participants in the pilot study coming from the cultural organisations. However, this could not be achieved in practice as the number of participants in this pilot study was impacted by the relatively limited number of experts working in the communication and social media teams in each case study. Our participants were one male (45) and one female (34). After contacting, explaining in-depth about the research project and requesting the consent of the organisations, the PI came in contact with the specific employees in order to arrange the interviews. The semi-structured interviews were conducted in convenient time for the participants and in the premises of each institution and more specifically in quiet offices. All semi-structured and photo-elicitation interviews were conducted by the PI and author of this paper.

Regarding the latter, we have conducted four photo-elicitation interviews with young people using their Instagram profiles. The interviews with young people took place in relatively quiet spaces, such as cafés. In the context of this research, semi-structured interviews provide the opportunity to researchers explore young people's experiences and perceive the socio-cultural processes in the modern world (Back, 2007). In addition, the interviews with young people based on their photos shared (in relation to cultural institutions) on their Instagram profiles, can help us engage with visual elements which are particularly effective to highlight significant aspects of the collected data (Rose, 2016). Young participants were identified and recruited both from personal networks of the researcher and during visits in the cultural spaces. Our young respondents were two male (22 years old, both of them) and two female (22 and 30 years old). The data in this pilot study comes mainly from young people with a middle-class background

and all of them being either students or graduates from Institutions in Higher Education. All the people participated in the research project voluntarily and we took into account research ethics, for instance by providing a detailed information sheet about the project and receiving participants' permission through consent forms to record our discussions.

## **Findings**

In this part, we present some of the preliminary findings based on the analysis of the pilot study. In general, it is an initial categorisation and thematic analysis of youth experiences in relation to cultural spaces. In the second part, we are interested in the perceptions and views of individuals who work in the cultural institutions' communication and marketing departments.

### *Young people's experiences in relation to cultural spaces*

Based on the analysis and the data collected during the discussion with our young participants, we have identified three main thematic categories: the significance of inclusion for young people in their relationship with cultural spaces; the importance of the sense of belonging in such spaces; and the role of social networking sites in their connection with cultural spaces. In this specific context, we are going to focus in the digitally mediated relationship of youth with cultural organisations. As it is expressed by young people who participated in this pilot study, the relationship between urban spaces and social media is complicated and directly related to technological changes. What is particularly interesting here is that young participants are influenced by the social media posts that receive when they scroll their Instagram feed. In other words, they are exposed in many posts which are related to cultural events that take place in urban settings. In a way, they are 'obliged' to follow continuously the latest spectacles in the city. As Dimitra (22 years old) explains:

*I had followed them [the cultural institutions] because they were places, I visited, so I wanted to be informed about what was going on... To be honest there is the FOMO [Fear of Missing Out] let's say, that I have to follow it. I've felt this too, that is, I may not be so much interested in the Athens Festival this period of time, but I will follow it because I have to follow it.*

Both the physical and digital presence in cultural and artistic events create the preconditions for intense youth experiences and emotions. In effect, this discussion must be considered in the wider context of youth lifestyles. As Featherstone (2007) highlights, there are individuals (and institutions) which manifest their "superiority" of their lifestyles in order others to adopt and incorporate their styles, expressions and fashions. He goes on to discuss about the symbolic power that is (re)produced through signs that can easily recognised, celebrated and located in the social space. It could be argued here that Featherstone's contribution can direct us towards understanding better the symbolic power of tastes and aesthetic characteristics that are digitally mediated in the digital era. Thus, our young participants are to an extent influenced by cultural intermediaries in the social media terrain. In a sense, individuals and cultural institutions

educate and promote lifestyles to (young) audiences (even what to follow and/or unfollow online). It is the combination of Instagram with cultural spaces' visual characteristics that might function as a background to young people's photos. Petros (22 years old) says:

*[I took the] photo purely due to the Christmas lighting in the back, from the steps, the panoramic ones, purely "Instagramic" the lighting, the colours...*

As Boy and Uitermark (2017) argue, there pressures that users might experience during their decision to post and engage with the specific platform. In their analysis, they acknowledge the importance of different platform affordances. However, they take also into consideration the significance of relationships cultivated within Instagram. Their work helps us understand better the ways symbolic elements and pressures which might be incorporated in the Instagram sphere are related with the specific functions as well as the affordances that it offers. Based on their analysis, individuals on Instagram curate images and they choose what to show in their profiles. This is something that relates to the discussions with our young participants as the specific platform provides the means to create and curate an image of cultural space that is desirable, attractive and without negative elements. In essence, cultural spaces seem to provide young people a sensory delight. They constitute both a beautiful landscape to visit during their leisure time and also a landscape ready to be used as the basis for content creation in their social media profiles. In this way, cultural spaces are about to be consumed by young people's audiences in this digital environment.

#### *Perceptions and views of communication professionals working in cultural institutions*

Some of the themes that emerged after the analysis of the semi-structured interviews with the marketing and communication professionals working in the cultural organisations are: the technological advancements and the platformisation of cultural communication; the cultural spaces of everyday life and spectacle; and finally, young people and inclusion. As it was discussed earlier, it is really important to consider the digitally mediated relationship of youth with cultural institutions. However, it is interesting to the same extent to focus on individuals' perceptions and views regarding cultural organisations' relationship with the local community and neighbourhood on a daily basis.

According to the communication professionals participating in our pilot study, it was evident that they have realised to a great extent the role of social media platforms in young people's entertainment. From their point of view, they have expressed the importance of the relationship between the role of space to young people's personal profiles on Instagram. They highlighted how young people make good use of cultural space for their social media goals. For instance, Christos (45 years old) mentions that:

*I think the youth has not escaped from making this real time 'waggishness'. And because [the space] has some photogenic elements that are a kind of social media 'traps'... let's say, it has these things that function to an extent like a landmark of the city. I mean, it's*

*even the colours. This is functioning and they want to make a statement that they are here.*

Our discussions indicate that the symbolic universe of Instagram shapes the image of the city as well as young people's Instagram feed. In a way, this is aligned with the argument that the styles which are reproduced and visualised in this specific platform indicate that some particular places are at the centre of the audiences' attention, while others are somehow indifferent (Boy and Uitermark, 2017; Hatuka et al., 2020). It is interesting how specialists and experts who work in the cultural institutions are fully aware of the mechanisms of social media platforms. In accordance with this theoretical discussion, our participants reflected on the multiple ways Instagram might serve to young users as a means to demonstrate a sense of uniqueness as well as their status by taking photos in specific moments and places. It could be argued that there has been an increasing recognition of the value both of the young people and the social media platforms to the development of cultural institutions and their wider activities. The production and consumption of social media content and youth digital choices have an effect on the lived youth interactions with cultural spaces. In this way, it is possible that youth experiences and engagement with aspects of cultural institutions in the online environment may be considered as a modern source of symbolic legitimacy.

## **Conclusion**

The process of digitalisation is of interest because it not only affects youth everyday experiences, it also has an impact on young people's consumer culture. It provides us with a lens to understand youth cultural processes in relation to the city, and in particular cultural spaces. In this context, young people are the producers and consumers of lifestyles which are directly linked nowadays with the 'digitalisation of life'. They have developed their own ways to engage with cultural institutions. Hence, it could be argued that such processes make them receptive to digitalised cultural goods and experiences. As a result, young people are interested in the utilisation of their social media profiles in order to connect with new forms of culture and the wider urban setting.

What is interesting is the rise of the significance of the digital in the relationship between cultural organisations and young people. This is further based on the fact the communication and marketing professionals realise the potential for creating positive connections between cultural spaces' images and young people's social media profiles. In a sense, cultural spaces are perceived by young people as an interesting place to visit and engage with. Cultural organisations have an appreciation and fascination for youth lifestyles and an interest in the digitalisation processes of their lives. It is about a lifestyle which is related to identity formation and self-presentation that provides them with a sense of uniqueness in an era when digital elements have proliferated within contemporary consumer culture.

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## References

- Alaimo, C. (2014). *Computational Consumption: Social media and the construction of digital consumers*. PhD Thesis. Department of Management, London School of Economics.
- Ashman, R., Solomon, M. R. & Wolny, J. (2015). An old model for a new age: Consumer decision making in participatory digital culture. *Journal of Customer Behaviour*, 14(2), 127-146. <http://dx.doi.org/10.1362/147539215X14373846805743>.
- Back, L. (2007). *The art of listening*. London: Bloomsbury.
- Belk, R. (2014). You are what you can access: Sharing and collaborative consumption online. *Journal of Business Research*, 67(8), 1595-1600. <https://doi.org/10.1016/j.jbusres.2013.10.001>.
- Bennett, A. (2018). Youth, Music and DIY Careers. *Cultural Sociology*, 12(2): 133–139.
- Boy, J. D. & Uitermark, J. (2017). Reassembling the city through Instagram. *Transactions of the Institute of British Geographers*, 42(2), 612–624.
- Boyd, D. (2014). *It's Complicated: The Social Lives of Networked Teens*. New Haven, CT: Yale University Press.
- Braun, V. & Clarke, V. (2013). *Successful Qualitative Research: A Practical Guide for Beginners*. London: SAGE Publications Ltd.
- Chatterton, P. & Hollands, R. (2002). Theorising Urban Playscapes: Producing, Regulating and Consuming Youthful Nightlife City Spaces. *Urban Studies*, 39(1), 95-116. <https://doi.org/10.1080/00420980220099096>.
- Corrigan, P. (1997). *The Sociology of Consumption: An Introduction*. London: SAGE Publications Ltd.
- Crewe, L. & Beaverstock, J. (1998). Fashioning the city: Cultures of consumption in contemporary urban spaces, *Geoforum*, 29(3), 287-308. [https://doi.org/10.1016/S0016-7185\(98\)00015-3](https://doi.org/10.1016/S0016-7185(98)00015-3).
- Crotty, M. (1998). *The Foundations of Social Research*. London: SAGE Publications Ltd.
- de Souza e Silva, A. & Frith, J. (2012). *Mobile Interfaces in Public Spaces: Locational Privacy, Control, and Urban Sociability* (1st ed.). London: Routledge. <https://doi.org/10.4324/9780203123966>
- Farrugia, D. (2014). Towards a spatialised youth sociology: the rural and the urban in times of change. *Journal of Youth Studies*, 17(3), 293–307. <https://doi.org/10.1080/13676261.2013.830700>.

- Farrugia, D. & Wood, B. E. (2017). Youth and Spatiality: Towards Interdisciplinarity in Youth Studies, *YOUNG*, 25(3), 209-218. DOI: 10.1177/1103308817712036.
- Featherstone, M. (1998). The Flâneur, the City and Virtual Public Life. *Urban Studies*, 35(5-6), 909-925.
- Featherstone, M. (2007). *Consumer Culture and Postmodernism*. London: SAGE Publications Ltd.
- Furlong, A. & F. Cartmel. (1997). *Young People and Social Change: Individualization and Risk in Late Modernity*. Buckingham: Open University Press.
- Georgiou, M. (2013). *Media and the City: Cosmopolitanism and Difference*. Cambridge: Polity Press.
- Glennie, P. (1998). Consumption, Consumerism and Urban Form: Historical Perspectives, *Urban Studies*, 35(5-6), 927-951. <https://www.jstor.org/stable/43084039>.
- Hatuka, T. & Toch, E. (2014). The emergence of portable private-personal territory: Smartphones, social conduct and public spaces. *Urban Studies*, 53(10), 2192-2208. <https://doi.org/10.1177/0042098014524608>.
- Hatuka, T., Zur, H. & Mendoza, J. A. (2020). The urban digital lifestyle: An analytical framework for placing digital practices in a spatial context and for developing applicable policy. *Cities*, 111, <https://doi.org/10.1016/j.cities.2020.102978>.
- Hesmondhalgh, D. & Meier, L. M. (2018). What the digitalisation of music tells us about capitalism, culture and the power of the information technology sector. *Information, Communication & Society*, 21(11), 1555-1570. DOI: 10.1080/1369118X.2017.1340498.
- Leccardi, C. (2005). Facing Uncertainty. Temporality and Biographies in the New Century. *YOUNG*, 13(2): 123–146.
- Leccardi, C. (2016). Youth Cultures in the New Century: Cultural Citizenship and Cosmopolitanism, In Feixa, C., Leccardi, C. and Nilan, P. (Eds.), *Youth, Space and Time: Agoras and Chronotopes in the Global City* (pp. 115-130). Leiden: Brill. DOI: [https://doi.org/10.1163/9789004324589\\_008](https://doi.org/10.1163/9789004324589_008).
- Lefebvre, H. (1991). *The Production of Space*. Oxford: Blackwell Publishing.
- Leurs, K. & Georgiou, M. (2016). Digital Makings of the Cosmopolitan City? Young People's Urban Imaginaries of London. *International Journal of Communication*, 10, 3689-3709. <https://ijoc.org/index.php/ijoc/article/view/4425/1736>.
- Martin, F. & Rizvi, F. (2014). Making Melbourne: Digital Connectivity and International Students' Experience of Locality. *Media, Culture & Society*, 36(7), 1016-1031. DOI: 10.1177/0163443714541223.
- Miles, S. (2000). *Youth Lifestyles in a Changing World*. Buckingham, UK: Open University Press.
- Mullins, P., Natalier, K., Smith, P. & Smeaton, B. (1999). Cities and Consumption Spaces. *Urban Affairs Review*, 35(1), 44-71. <https://doi.org/10.1177/10780879922184284>.
- Nowak, R. (2016). *Consuming Music in the Digital Age: Technologies, Roles and Everyday Lives*. Basingstoke: Palgrave Macmillan.

- Peng, Y. (2019) Sharing food photographs on social media: performative Xiaozhi lifestyle in Young, middle-class Chinese urbanites' WeChat 'Moments', *Social Identities*, 25(2), 269-287, DOI: 10.1080/13504630.2017.1414596.
- Robinson, C. (2000). Creating Space, Creating Self: Street-frequenting Youth in the City and Suburbs. *Journal of Youth Studies*, 3(4), 429–443. <https://doi.org/10.1080/713684388>.
- Rose, G. (2016). *Visual Methodologies: An Introduction to Researching with Visual Materials*. London: SAGE Publications Ltd.
- Skelton, T. & Valentine, G. (1998). *Cool Places: Geographies of Youth Culture*. New York: Routledge.
- Śledziewska, K. & Włoch, R. (2021). *The Economics of Digital Transformation: The Disruption of Markets, Production, Consumption and Work*. London: Routledge.
- Strauss, A. & Corbin, J. (1990). *Basics of Qualitative Research. Grounded Theory Procedures and Techniques*. Newbury Park, CA: SAGE Publications Ltd.
- Thompson, Z. (2015). *Urban Constellations: Spaces of Cultural Regeneration in Post-Industrial Britain* (1st ed.). London: Routledge. <https://doi.org/10.4324/9781315548876>.
- Turkle, S. (1999). Cyberspace and identity. *Contemporary Sociology*, 28(6), 643-648. <https://doi.org/10.2307/2655534>.
- White, R. D., J. Wyn & Robards, B. (2017). *Youth and Society*. 4th ed. Melbourne: Oxford University Press.
- Zukin, S. (1998). Urban lifestyles: Diversity and Standardisation in Spaces of Consumption, *Urban Studies*, 35(5-6), 825-839. <https://www.jstor.org/stable/43084034>.

# Knowledge sharing in online communities: Incentives and barriers

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## Abstract

With the development of information and communication technology (ICT), online environments have enabled users to establish online communities, where they can congregate and engage in various social interactions (such as discussion groups, bulletin board systems, etc.), both synchronously and asynchronously. Apart from purely social online communities, such as Facebook or MySpace, some communities evolve to share knowledge, forming online communities that often resemble communities of practice found in workplaces and educational institutions, where a common interest, identity, and a set of communication norms and structures are cultivated through interaction. These communities are also known as electronic knowledge networks. The success and proliferation of these networks compel organizations to establish and manage such communities to facilitate intra-organizational knowledge exchange. In this context, this paper endeavors, through a review of Greek and foreign-language literature and articles, to investigate the factors that motivate or inhibit knowledge-sharing behavior (explicit or implicit) in online communities. The resulting findings can assist developers and managers of online knowledge-based communities in effectively promoting online knowledge-sharing behaviors and enhancing their longevity.

**Keywords:** knowledge sharing, online communities, electronic knowledge networks.

## Introduction

The development of Information and Communication Technology (ICT) and the prevalence of the Internet have diversified how people communicate, provide, and receive information (Li, 2015:171; Rajabion, Wakil, Badfar, Mojtabavi Naeini & Zareie, 2019). Internet users, free from the constraints of space and time, can browse the Internet, meet other people randomly or intentionally, and share knowledge, information, ideas, and experiences (DeLaat, Lally, Lipponen & Simons, 2006; Shallen, Yusof, Mohammed, Zahari & Hamzah, 2020).

One of the technological developments that has altered communication patterns is the emergence of social media (Bala, 2014:2; Edwards, 2015). Social media serves as a valuable platform for facilitating knowledge sharing and communication, not only at the personal/individual level but also within organizations (Ahmed, Ahmad, Ahmad & Zakaria, 2018:1).

The utilization of social media for knowledge sharing has garnered considerable scholarly attention. While there has been extensive literature exploring the use of social media for knowledge sharing (Ihsaniyati, Sarwoprasodjo, Muljono & Gandasari, 2023:2283-1), further

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investigation is warranted into the factors that motivate or hinder knowledge sharing behavior within online communities. This study aims to conduct a literature review of research on the utilization of social media for knowledge sharing, particularly focusing on the factors influencing knowledge sharing behavior (explicit or implicit) within online communities.

Online communities represent one of the most prominent facets of social media, playing a pivotal role in the dissemination of data and information (Maharani & Hendriyani, 2017; Sour, Rahmani, Navimipour & Rezaei, 2019). As new tools for knowledge management, they are rapidly expanding (Yue & Zhang, 2016:491). These platforms provide individuals, groups, and organizations with a convenient way to share and seek information and knowledge on topics of interest (Hilverda & Kuttschreuter, 2018:1904; Jacobsen, Tudoran & Lähteenmäki, 2017:10), delivering this information promptly, accurately, and effectively (Kuttschreuter, Rutsaert, Hilverda, Regan, Barnett & Verbeke, 2014:11). Online communities transcend the boundaries of traditional communities, enhance the efficiency of online communication, and foster innovative methods for generating and disseminating organizational knowledge (Rajabion, Nazari, Bandarchi, Farashiani & Haddad, 2019). Furthermore, online communities promote interaction and the sharing of knowledge and experiences, serving as a key pillar for the sense of security among participants within organizations. With increasing numbers of individuals viewing online communities as effective communication channels and primary sources of information and knowledge, understanding the factors that can facilitate or impede knowledge sharing becomes imperative.

This paper is organized as follows: The first section explores the concepts of knowledge and knowledge management. The second section introduces online communities. The third section describes the process of knowledge sharing within these communities. The fourth section examines the motivations and barriers that influence participation in online communities. The paper concludes with a discussion and final conclusions.

### **Knowledge - Knowledge exchange**

In today's "knowledge economy" era, knowledge is recognized as a crucial organizational asset that requires appropriate management and communication to uphold the organization's competitiveness and enhance its efficiency (Colnar & Dimovski, 2017:147). Knowledge is an intangible asset (Bashir, Usoro & Khan, 2015:12) that can reside within individuals, organizational documents, knowledge management systems, processes, and activities, embodying rules, routines, and behaviors acquired through years of work experience (Fileri, 2010:15). The value of knowledge manifests when it is accessible, developed, and applied (North & Scharle, 2020:10) and can be enhanced when shared with others (Shallen et al., 2020:2).

Arntzen-Bechina and Leguy (2007:154) define knowledge as "a fluid combination of experiences, values, contextual information, expertise, and grounded intuition that provides a framework for evaluating and integrating new experiences and information." According to

Mihindu, Fernando, and Khosrowshahi (2008), processes related to knowledge—such as creation, recognition, storage, evaluation, exchange, transfer, acquisition, community learning, distribution, and dissemination—are highly interdependent knowledge management processes in which individuals or groups engage daily.

Knowledge management can be perceived as the process through which individuals create, transfer, and embrace knowledge across different levels of interactions or networks (Nair & Munusami, 2019:175). Knowledge management tools encompass policies, know-how, practices, and technologies that facilitate the exchange and transfer of knowledge. The primary organizational benefits include fostering connections among individual members to enhance, expand, and share their knowledge (Bashir et al., 2015:12).

In organizations, knowledge management is described as "an organizational process of creating a central source of knowledge that facilitates the acquisition, assimilation, distribution, integration, sharing, retrieval and reuse of internal and external, explicit and tacit knowledge to promote innovation in the organization" (Kaira & Priri, 2022:543).

Knowledge creation and sharing within organizations are fundamental components of knowledge management, contributing to the development of organizational value. Particularly, knowledge sharing—where individuals voluntarily and consciously exchange their knowledge, experiences, and skills (Abker, Mohamed, Ibrahim & Eltayeb, 2019:34), collaboratively generating new knowledge within organizations or departments—is among the foundational functions of any knowledge management initiative within specific organizations (Zheng, 2017:52; Zygouris & Papadopoulou, 2022:3799). This collaborative process facilitates cooperation, knowledge dissemination, acquisition, and the collective ownership of knowledge by multiple parties (Zhang, Ma & Lyu, 2021:1511). Furthermore, it is crucial for translating individual knowledge into organizational knowledge (van den Hooff & de Ridde, 2004). Individuals engaging in knowledge exchange must understand the conditions under which knowledge exchange occurs and the potential benefits they stand to gain. Additionally, they must possess the appropriate motivation to transfer knowledge (von Krogh, Nonaka & Aben, 2001). Incentives encourage stakeholders to share their knowledge and experiences, thereby enhancing organizational innovation and excellence.

Knowledge, whether tacit or explicit, constitutes a critical organizational asset. The sustainability of an organization relies on its ability to acquire, store, and utilize knowledge effectively. To gain a competitive edge, every organization must focus not only on selecting and recruiting employees with the requisite knowledge but also on implementing procedures and practices to leverage the existing knowledge within the organization (Jusoh & Alfawareh, 2019:1). Moreover, fostering a culture of knowledge sharing is essential. This can be achieved by acknowledging and rewarding employees who actively share their knowledge and by providing the necessary resources to facilitate their involvement. Additionally, cultivating a culture of knowledge sharing entails creating a collaborative environment where employees feel empowered to contribute their knowledge, leading to enhanced organizational performance

and competitiveness (Budrytė & Vainauskienė, 2023:25-26). Often, employees possess knowledge and experiences that remain unexpressed. However, when incentives are provided and tacit knowledge is captured, the potential to enhance organizational learning increases. A crucial element is transforming individual learning into organizational learning.

In the first generation, knowledge sharing tools were primarily designed to address challenges associated with temporal and geographical distances among workers. In the second generation, knowledge exchange tools take on a "socio-technical" nature, aiming to diminish social distance within the workplace (Lee, Wang, Yeoh, Ikasari, 2020:1).

### **Online communities**

According to Aristotle, humans are inherently social beings. Throughout history, individuals have formed small or large groups to fulfill common needs and pursue shared objectives. The defining characteristic of these groups or communities is social interaction (Hatzis, Grivopoulou & Robolas, 2020:78).

In the first definition, these groups live in the same geographical area, are self-sufficient in economic, religious, social and other aspects, and are strictly separated from other groups. Contemporary authors emphasize the importance of belonging, emotional bonds and mutual support among members and the common culture they share, while ignoring the strictly territorial aspect (Cărtărescu, 2010: 81).

A community can exist in virtual or physical spaces, or a combination of both, where individuals with similar interests, objectives, and experiences gather to share, connect, exchange ideas, and collaborate towards common goals. Groups with specific interests also communicate in cyberspace through email, forums or bulletin boards, newsgroups, and chat rooms (Abuhamdieh, 2006:23). Social media platforms can facilitate the emergence of such communities and provide ongoing support to sustain them (Faraj, von Krogh, Monteiro & Lakhani, 2016:4).

Online communities represent a form of electronic structure enabling Internet users to connect, communicate and collaborate. Similar to offline communities, online communities consist of individuals who share common backgrounds, values, or interests and engage in regular interactions. Each participant can be a sender and receiver of information from different cultural backgrounds. Online communities enable global knowledge exchange (Bashir et al., 2015:12).

Faraj, Jarvenpaa, and Majchrzak (2011:1224) define online communities as "open collectives of dispersed individuals whose members are not necessarily known or identifiable but have common interests and care about their individual and collective well-being".

Members of these communities nurture and sustain their relationships through computer-mediated communication (Gruzd, 2018), guided by their own set of norms and requirements, including engagement, moderation, and management (Bond, 2020). The growth and

effectiveness of online communities hinge on the number of active members and their level of participation (Hjelm & Stålbom, 2023:3). For sustainable development, a major challenge is to ensure that participants voluntarily contribute and share knowledge. To achieve this goal, many online communities provide anonymity services to encourage members to participate more in knowledge sharing activities (Lee, 2021:1).

Rheingold (1993, as cited in Papadhmhtriou & Lionarakis, 2009:41) coined an additional term "virtual communities" to describe groups of individuals engaging in public discussions over an extended period, gradually forming emotional connections and establishing networks of human relations.

Online communities have existed on the Internet for more than two decades. Existing literature shows that members of online communities communicate, exchange information and share knowledge through the Internet (Akhavan, Nabizadeh, & Rajabion, 2017), and the main reasons that motivate people to join the community are seeking social support and the exchange of information and experience (Al-Khasawneh et al., 2023:2; Sari & Othman, 2018:378). These communities extend beyond the confines of traditional settings and enhance the efficacy of online communication interactions (Rajabion et al., 2019:366). Interaction within online communities can take various forms, including face-to-face meetings with an online group or a combination of both (Ford, Korjonen, Keswani & Hughes, 2015:2). This versatility suggests that online communities offer added value by virtue of their ubiquity, enabling users to share knowledge anytime, leveraging internet technology and connectivity (Ogbamichael & Warden, 2018). Consequently, they are perceived as informal tools for enhancing knowledge sharing (Tang & Yang, 2005:500).

The success of online communities depends largely on the willingness of participants to share and exchange knowledge with others. Therefore, one of the challenges of online communities is to retain and motivate members to contribute knowledge. Many online communities fail because members are unwilling to participate in the knowledge sharing process (Sari & Othman, 2018:378).

As user-members increasingly utilize complex new web services (Web 2.0) for real-time communication, content creation, and file exchange, the online communities they form are evolving into second-generation communities (community 2.0). Within Web 2.0 environments, individuals have access to various communication channels such as forums, social networks, blogs, and communities, enabling them to contribute their knowledge and skills while also learning from others (Al-Qadhi, Md Nor, Ologbo & Knight, 2015; Lai, Huang & Hung, 2018).

It is important to highlight the advantages of online communities.

Factors such as time saved when searching for information on the Internet, collaborative problem solving during economic crises, available support systems, and user-employee satisfaction and loyalty significantly contribute to the healthy development of both the community and the organization (Richmond, 2020).

## **Knowledge sharing in online communities**

Knowledge sharing entails the deliberate behavior and choice of individuals to voluntarily externalize or disseminate knowledge, as well as the capacity of knowledge recipients to internalize or assimilate this knowledge (Zhang et al., 2021:1510-1511). Within organizations, the primary objective of knowledge sharing is to leverage accessible knowledge to enhance employee performance, effectiveness, and the coordination of organizational procedures (Lenart-Gansiniec, 2019:220). Abkers et al. (2019:34) note that knowledge sharing among employees facilitates the absorption, comprehension, and applicability of knowledge by others within the organization.

Online communities facilitate a novel approach to knowledge sharing, significantly broadening the scope of traditional communities (Li, 2015:171). They provide platforms for collaboration by facilitating the exchange of both implicit and explicit knowledge (Faraj & Shimigu, 2018:1593), thereby enhancing the efficacy of online communication interactions (Li, 2015:171; Rajabion et al., 2019:366).

In these communities, the creation and dissemination of knowledge are entrusted to the users. Every registered user has the ability to share information and knowledge, fostering the productive flow of knowledge within the community (Shalleh et al., 2020:2). The process of knowledge sharing entails the knowledge source utilizing the online community as a mechanism to effectively transfer their knowledge. This process enables the recipient to develop the necessary understanding, facilitating the generation of solutions to problems (Sharratt & Usoro, 2003:189).

Participation in online communities is voluntary and characterized by a high degree of freedom, with individuals themselves determining the content and type of knowledge shared within them (De Laat, 2006). The more active the members, the more frequent the knowledge exchange between users (Zhang, Ma & Lyu, 2021:1510). Many organizations recognize online communities as crucial for knowledge management and actively support their development to achieve business goals (Hsu, Ju, Yen & Chang, 2007:153). The use of online communities for knowledge sharing in large organizations is increasing (Bashir et al., 2015:12). The increase in their use is particularly evident when they operate in highly uncertain or ambiguous environments (Zhang et al., 2021:1511). Furthermore, organizations create online communities to facilitate the knowledge sharing process among their employees (Hwang, Singh & Argote, 2015:1593). Many authors point out that large organizations consciously recruit members from different societies, countries, and cultures who bring different ideas and cultural values to the workplace (Bashir et al., 2015:12).

Organizations can derive significant benefits from knowledge sharing through online communities. As individuals share their expertise and experiences, new knowledge is generated, which can enhance organizational processes, clarify goals, and lead to more effective decision-making. The resulting new organizational knowledge can then be leveraged to foster

innovation, improve performance, and enhance competitiveness (Budrytė & Vainauskienė, 2023:19-20). Knowledge sharing within online communities enables organizations to identify innovative solutions and practices, thereby improving the effectiveness and efficiency of human resources.

### **Motivations and barriers to participation in online communities**

In online environments, knowledge sharing is intricately connected to the values and norms upheld within online communities. Individuals contribute to these values by adhering to community rules (Keating & Straub, 2020:2). The extent of knowledge sharing within online communities is influenced by the motivations driving individuals to participate, as well as the barriers hindering their engagement. Motivations and barriers to knowledge sharing in online communities arise concurrently within people's actions (Hew & Hara, 2007:2311). In this study, motivations refer to the factors that activate and guide individuals' behavior towards sharing knowledge.

Motivations for knowledge sharing in the online context can generally be categorized into six main groups: reciprocity, personal gain, altruism, team commitment, familiarity with technology use, and extrinsic goals (Hew & Hara, 2007:2311). In communities where knowledge sharing is central, encouraging individuals to share knowledge and increasing their motivation to do so, as well as enhancing the frequency of knowledge sharing, are key considerations in the online knowledge exchange process (Yilmaz, 2016:374). When employees perceive that a community meets their interests and needs, provides a pleasant experience, and offers rich and high-quality knowledge or resources, they are more likely to be satisfied with the community and inclined to participate actively. Consequently, the more active the members of an online community, the greater the frequency of knowledge flow among its users (Zhang et al., 2021:1510). Therefore, it is essential to identify the factors that either encourage or hinder individuals' behaviors in the knowledge sharing process (Yilmaz, 2016:374).

Antikainen and Väättäjä (2010:445-446), categorized motivations for participating in online communities into three categories: a) intrinsic motivations, such as ideology, joy, fun, entertainment, interest in the subject of the community, learning, sharing knowledge, improving skills, b) extrinsic motivation, such as a sense of efficacy, technology-related user needs, rewards, organizational recognition, reputation, increased professional status, and c) social motives, such as altruism, reciprocity, care for the community, friendship and recognition from other members.

Barriers to knowledge sharing can be defined as factors that limit an individual's behavioral intention to share knowledge (Hew & Hara, 2007:2312). Recently, Hjelm and Stålbom (2023:12) after an overview of the relevant literature listed schematically the possible obstacles to the exchange of knowledge. First, they listed all the barriers to knowledge sharing. Then, they categorized the barriers into four categories of factors: individual, organizational, cultural

and technical factors. In the end, they noted the broadest category that summarizes all thirteen barriers they came up with in their study (Figure 1).



**Figure 1:** Model summarizing individual, organizational, cultural & technical barriers to knowledge sharing.

Kacperska and Łukasiewicz (2020:11) categorized knowledge sharing barriers into three categories:

*Organizational barriers* include the absence of a transparent incentive system that rewards knowledge sharing, an "outdated" organizational culture, the lack of positive examples from organizational leadership, insufficient evidence of benefits from knowledge sharing, rigid organizational hierarchies, and inadequate processes or an unsupportive work climate.

*Individual barriers* encompass differences in knowledge level and experience, time constraints, perceived risks associated with knowledge sharing, personal biases or interpersonal conflicts, as well as gender, age, and cultural disparities.

*Technological barriers* may involve a lack of training in utilizing modern technologies for knowledge sharing or a misalignment between expectations and technical capabilities.

Rajabion et al. (2019:337) have identified and categorized the factors influencing knowledge sharing in online communities. These factors included satisfaction, motivation, usefulness, ease of use, social capital, member attachment, e-loyalty, culture, online learning, willingness, self-efficacy, commitment, psychological safety, altruism, reciprocity, fairness, social support, rewards, reputation, pleasure in helping others, social interaction, identification and shared vision.

Hew and Hara (2007:2312) also identified six general categories of barriers that can inhibit knowledge sharing in online communication environments: technology, lack of knowledge to share knowledge, competition, factors relating to the community itself, their personal attitude and confidentiality issues. Employees, as noted by Ardichvili, Page, and Wentling (2003:64), may be reluctant to contribute knowledge to the organization due to fears of potential criticism

or concerns about inadvertently providing trivial, imprecise, or irrelevant contributions that could mislead other community members, to the detriment of the organization.

Trust emerges as the most critical factor for knowledge sharing within online communities, as emphasized by Al-Qadhi, Md Nor, Ologbo, and Knight (2015:154) and Fullwood, Rowley, and McLean (2018:1). Individuals are more inclined to share knowledge when they perceive others as trustworthy, as they are less apprehensive about the misuse or exploitation of shared knowledge. Studies by Chang and Chuang (2011), Lee and Hyun (2018), and Kumi and Sabherwal (2019) have demonstrated that trust and reputation motivations significantly promote knowledge sharing among users in online communities. Trust, reputation, and reciprocity motivations positively influence both the quantity and quality of knowledge sharing. A higher level of trust among community members, coupled with a strong pursuit of status and reputation within the community, and a robust sense of reciprocity, correlates with increased frequency of knowledge sharing within the community. Moreover, an emphasis on integrity, accuracy, and professionalism in shared knowledge further enhances knowledge sharing (Zhang et al., 2021:1519).

## **Conclusions**

This study aimed to identify the factors influencing knowledge sharing in online communities, which are widely adopted by organizations for knowledge management purposes. Online communities offer environments where individuals within organizations can converge based on common roles, expertise, or shared interests, facilitating interactions. They play a crucial role in fostering social networks among individuals, enhancing both individual employee performance and organizational effectiveness. ICT serves as a supportive factor for knowledge, information, and experience exchange within online communities, offering numerous advantages. Existing online platforms facilitate and enhance knowledge sharing by overcoming time and space constraints, thus improving access to information and knowledge among individuals who possess it. However, barriers to knowledge exchange exist, stemming from factors that inhibit an individual's intention to share knowledge. These barriers manifest at individual, organizational, cultural, and technological levels.

The efficiency of online communities yields positive outcomes, such as time savings and collaborative problem-solving. Furthermore, increased activity among members within an online community fosters a more frequent flow of knowledge among its participants, enhancing interaction, externalization of tacit knowledge, and organizational innovation. However, individuals may refrain from contributing knowledge due to various reasons, often rooted in self-interest. Therefore, organizations must cultivate a culture of knowledge sharing. This can be achieved by acknowledging and rewarding individuals who actively share their knowledge, providing appropriate resources, and encouraging participation. Additionally, the implementation of training programs can significantly raise awareness among employees regarding the importance of participating in knowledge-sharing communities, while also



enhancing their knowledge and skills at a specific level. When organizations create conditions for optimal exchange, storage and transfer of human resource knowledge and experience, their competitiveness and efficiency increase. Without the development of knowledge management and online communities, organizations have a large amount of knowledge and experience that remains untapped.

Through online communities, the parties involved share their know-how and experiences, improve the organizational processes in the organization, resulting in more effective achievement of goals. In order to reduce barriers to knowledge sharing in online communities, it is necessary to develop trust and a positive and supportive framework for human resources to externalize tacit knowledge. Then there are chances that the tacit knowledge will turn into explicit and this in turn into organizational knowledge. An organization's organizational culture when functioning positively increases the prospects for knowledge sharing through online communities and creates conditions for promoting organizational innovation and effectiveness. Incentives from the leadership of organizations to human resources will promote more effective sharing of knowledge and experience and drive it to achieve the goals of organizations.

## References

- Abker, A. Y., Mohamed, A. T., Ibrahim, S. B., & Eltayeb, T. K. (2019). Knowledge Acquisition and Knowledge Sharing as Determines of Organizational Competitive Advantage. *American Journal of Business, Economics and Management*, 7(1), 32-39.
- Abuhamdieh, A. (2006). Knowledge Transfer In Virtual Communities. *Review of Business Information Systems*, 10(4), 23-37.
- Ahmed, Y. A., Ahmad, M. N., Ahmad, N., & Zakaria, N. H. (2018). Social media for knowledge-sharing: a systematic literature review. *Telematics and Informatics*, 37, 72-112.
- Akhavan, P., Nabizadeh, M., & Rajabion, L. (2017). Introducing knowledge management pattern at national level applying grounded theory method and fuzzy dematel. *VINE Journal of Information and Knowledge Management Systems*, 47(3), 372-394. <https://doi.org/10.1108/VJIKMS-05-2016-0022>
- Al-Khasawneh, M., Al-Haddad, S., Sharabati, A.-A.A., Al Khalili, H. H., Azar, L. L., Ghabayen, F. W., Jaber, L. M., Ali, M. H., & Masa'deh, R. (2023). How Online Communities Affect Online Community Engagement and Word-of-Mouth Intention. *Sustainability*, 15, 11920. <https://doi.org/10.3390/su151511920>
- Al-Qadhi, Y. H, Md Nor, K., Ologbo, A. C., & Knight, M. B. (2015). Knowledge sharing in a multi-nationality workforce: Examining the factors that influence knowledge sharing among employees of diverse nationalities. *Human Systems Management*, 34(3), 149-165. doi:10.3233/HSM-150844
- Arntzen-Bechina, A.A., & Leguy, C. A. D. (2007). An insight into knowledge flow in biomedical engineering science. *The Electronic Journal of Knowledge Management*, 5(2), 153–160.
- Antikainen, J. M., & Vääätäjä, H. K. (2010). Rewarding in open innovation communities - how to motivate members. *International Journal of Entrepreneurship and Innovation Management*, 11, 440-456. <https://doi.org/10.1504/IJEIM.2010.032267>

- Ardichvili, A., Page, V., & Wentling, T. (2003). Motivation and barriers to participation in virtual knowledge-sharing communities of practice. *Journal of Knowledge Management*, 7(1), 64–77. <https://doi.org/10.1108/13673270310463626>
- Bala, K. (2014). Social media and changing communication patterns. *Global Media Journal-Indian Edition*, 5(1), 1-6.
- Bashir, S., Usoro, A., & Khan, I. (2015). Knowledge sharing in virtual communities: a comparison of three different cultures. *International Journal of E-Business Development*, 5(1), 12-20. Article 2. <http://www.academicpub.org/ijed/paperInfo.aspx?paperid=16433#Abstract> [accessed 20 August 2024].
- Bond, M. (2020, December 16). What is an Online Community? The Basics & Benefits. *higher logic*. <https://www.higherlogic.com/blog/what-is-an-online-community/> [accessed 20 April 2024].
- Budrytė, M., & Vainauskienė, V. (2023). Virtual Communities of Practice as a Knowledge Sharing Tool: Recommendations for International Business. *Management of Organizations: Systematic Research*, 89(1), 15-30. <https://doi.org/10.2478/mosr-2023-0002>
- Cărtărescu, I. (2010). Utility of Online Communities – Ways One Can Benefit From One’s Online Life. *Journal of Comparative Research in Anthropology and Sociology*, 1(2), 79-91.
- Chang, H. H., & Chuang, S. S. (2011). Social capital and individual motivations on knowledge sharing: participant involvement as a moderator. *Information & Management*, 48(1), 9-18. doi:10.1016/j.im.2010.11.001
- Colnar, S., & Dimovski, V. (2017). Knowledge management initiatives benefits for the Slovenian public sector. *Management: journal of contemporary management issues*, 22(Special Issue), 145-161.
- Cristofaro, C. L., Reina, R., Ventura, M., Melina, A-M., & Vesperi, W. (2022). Knowledge management in virtual community: some implications in COVID-19 pandemic. ITAIS 2022 Proceedings. 24. <https://aisel.aisnet.org/itais2022/24> [accessed 25 August 2024].
- De Laat, M. (2006). *Networked learning*. Apeldoorn, Netherlands: Politie academie.
- De Laat, M., Lally, V., Lipponen, L., & Simons, R-J. (2006). Analyzing student engagement with learning and tutoring activities in networked learning communities: a multi-method approach. *International Journal of Web Based Communities*, 2(4), 394-412.
- Edwards, M. (2015). How Social Media Has Changed How We Communicate. <https://fowmedia.com/social-media-changed-communicate/> [accessed 20 April 2024].
- Faraj, S., Jarvenpaa, S. L., & Majchrzak, A. (2011). Knowledge collaboration in online communities. *Organization Science*, 22(5), 1224–1239. <https://doi.org/10.1287/orsc.1100.0614>
- Faraj, S., & Shimizu, T. (2018). Online Communities and Knowledge Collaborations. In R. Aldag (Eds.), *Oxford Research Encyclopedia of Business and Management (pp.1-20)*. Oxford University Press.
- Faraj, S., von Krogh, G., Monteiro, E., & Lakhani, K. R. (2016). Online Community as Space for Knowledge Flows. *Information Systems Research, Articles in Advance*, 27(4), 1–17. doi:[10.1287/isre.2016.0682](https://doi.org/10.1287/isre.2016.0682)
- Filieri, R. (2010). *Overcoming Knowledge Sharing Barriers through Communities of Practice: Empirical Evidence from a Big Automotive Supplier*. U.K.: Cambridge Scholars Publishing.
- Ford, J., Korjonen, H., Keswani, A., & Hughes, E. (2015). Virtual communities of practice: can they support the prevention agenda in public health?. *Online Journal of Public Health Information*, 7(2), e222. doi: 10.5210/ojphi.v7i2.6031
- Fullwood, R., Rowley, J., & McLean, J. (2018). Exploring the Factors That Influence Knowledge Sharing between Academics. *Journal of Further and Higher Education*, 9486, 1–13.

- Gruzd, A. (2018). Online Communities. In Alhajj, R., Rokne, J. (Eds.), *Encyclopedia of Social Network Analysis and Mining* (pp.1171-1181). Springer. doi:10.1007/978-1-4614-6170-8\_81
- Hatzis, I., Grivopoulou, A., & Robolas, P. (2020). The role of learning communities in teacher education Vocational Training Institutes: Empirical field research. *International Journal of Educational Innovation*, 2(6), 76-87.
- Hew, K. F., & Hara, N. (2007). Knowledge Sharing in Online Environments: A Qualitative Case Study. *Journal of the American Society for Information Science and Technology*, 58(14), 2310-2324. <http://dx.doi.org/10.1002/asi.20698>
- Hilverda, F., & Kuttschreuter, M. (2018). Online information sharing about risks: The case of organic food. *Risk Analysis*, 38(9), 1904–1920.
- Hjelm, E., & Stålbom, A. (2023). *Barriers to Knowledge sharing: An investigation of Practice Area Networks at WSP Sweden (Thesis)*. Department of Business Studies, Uppsala University.
- Hsu, M.-H., Ju, T. L., Yen, C.-H., & Chang, C.-M. (2007). Knowledge sharing behavior in virtual communities: The relationship between trust, self-efficacy, and outcome expectations. *International Journal of Human-Computer Studies*, 65(2), 153–169. <https://doi.org/10.1016/j.ijhcs.2006.09.003>
- Hwang, E. H., Singh, P. V., & Argote, L. (2015). Knowledge Sharing in Online Communities: Learning to Cross Geographic and Hierarchical Boundaries. *Organization Science, INFORMS*, 26(6), 1593-1611. doi: 10.1287/orsc.2015.1009
- Jacobsen, L. F., Tudoran, A. A., & Lähteenmäki, L. (2017). Consumers’ motivation to interact in virtual food communities—The importance of self-presentation and learning. *Food Quality and Preference*, 62(12), 8–16.
- Jusoh, S., & Alfawareh, H. (2019). Empirical study of knowledge sharing among multinational academicians. *BAU Journal - Science and Technology*, 1(1), Article 9. doi:[10.54729/2959-331X.1010](https://doi.org/10.54729/2959-331X.1010)
- Ihsaniyati, H., Sarwoprasodjo, S., Muljono, P., & Gandasari, D. (2023). The Use of Social Media for Development Communication and Social Change: A Review. *Sustainability*, 15, 2283. <https://doi.org/10.3390/su15032283>
- Kacperska, E., & Łukasiewicz, K. (2020). The Importance of Trust in Knowledge Sharing and the Efficiency of Doing Business on the Example of Tourism. *Information*, 11(6), 311. <https://doi.org/10.3390/info11060311>
- Kaira, W., & Phiri, J. (2022). A Model for Improved Knowledge Management Performance in Higher Education Institutions in Developing Countries: A Case of Zambia. *Open Journal of Business and Management*, 10, 543-563. doi:[10.4236/ojbm.2022.101030](https://doi.org/10.4236/ojbm.2022.101030)
- Keating, B. W., & Straub, D. (2020). A taxonomy of knowledge sharing in online communities. [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3725223](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3725223) [accessed 20 April 2024].
- Kumi, R., & Sabherwal, R. (2019). Knowledge sharing behavior in online discussion communities: examining behavior motivation from social and individual perspectives. *Knowledge Process Management*, 26(2), 110–122. doi:10.1002/kpm.1574
- Kuttschreuter, M., Rutsaert, P., Hilverda, F., Regan, Á., Barnett, J., & Verbeke, W. (2014). Seeking information about food related risks: The contribution of social media. *Food Quality & Preference*, 37, 10–18.
- Lai, H-M., Huang, Y-W., & Hung, S-Y. (2018). A Meta-analysis of Knowledge Sharing in Virtual Communities: The Moderating Effect of Membership Types. In Uden, L., Hadzima, B., Ting, IH. (eds), *Knowledge Management in Organizations. KMO 2018. Communications in Computer and Information Science* (vol 877, pp.83-93), Springer, Cham. [https://doi.org/10.1007/978-3-319-95204-8\\_8](https://doi.org/10.1007/978-3-319-95204-8_8)

- Lee, A. R. (2021). Investigating Moderators of the Influence of Enablers on Participation in Knowledge Sharing in Virtual Communities. *Sustainability*, 13, 9883. <https://doi.org/10.3390/su13179883>
- Lee, K. H., & Hyun, S. S. (2018). The effects of tourists' knowledge-sharing motivation on online tourist community loyalty: the moderating role of ambient stimuli. *Current Issues in Tourism*, 21(13), 1521–1546. doi:10.1080/13683500.2016.1145197
- Lee, A. S. H., Wang, S., Yeoh, W., & Ikasari, N. (2020). Understanding the Use of Knowledge Sharing Tools. *Journal of Computer Information Systems*, 61(5), 458-470. <https://doi.org/10.1080/08874417.2020.1752850>
- Lenart-Gansiniec, R. (2019). Understanding knowledge sharing in virtual communities. In Weber, S., Truschkat, I., Schröder, C., Peters, L., Herz, A. (eds), *Organisation und Netzwerke. Organisation und Pädagogik*, 26. Wiesbaden: Springer VS. [https://doi.org/10.1007/978-3-658-20372-6\\_20](https://doi.org/10.1007/978-3-658-20372-6_20)
- Li, J. (2015). Knowledge sharing in virtual communities: A social exchange theory perspective. *Journal of Industrial Engineering and Management*, 8(1), 170-183. <https://dx.doi.org/10.3926/jiem.1389>
- Maharani, R. S., & Hendriyani, H. (2017). The Influence of Motivation and Social Capital to Knowledge Sharing in Online Communities: Study on Female Daily Online Community. In *Indonesia International Graduate Conference on Communication (IndoIGCC) Proceeding*, 1(2), 500-518.
- Mihindu, S., Fernando, T., Khosrowshahi, F. (2008). Knowledge processing, codification and reuse model for communities of practice. In Johannesson, P., Arabnia, H.R. and Shahzad, M.K. (Ed), *Special Issue: Information & Knowledge Engineering, Ubiquitous Computing and Communication Journal*, Jan 2008
- Nair, V., & Munusami, C. (2019). Knowledge management practices: An exploratory study at the Malaysian higher education institutions. *Journal of Research in Innovative Teaching & Learning*, 13(2), 174-190.
- North, K., & Scharle, A. (2020). *European network of public employment services: Practitioner Toolkit on Knowledge Management*. Luxembourg: Publications Office of the European Union.
- Ogbamichael, H. B., & Warden, S. (2018). Information and knowledge sharing within virtual communities of practice. *South African Journal of Information Management*, 20(1), a956. <https://doi.org/10.4102/sajim.v20i1.956>
- Papadimitriou, S., & Lionarakis, A. (2009). The Role of the Professor-Advisor and the development of his support mechanism in Distance Education. In *Proceedings 5th International Conference in Open & Distance Learning*, 5(2A), 38-55. Athens, Greece. doi:10.12681/icodl.437
- Rajabion, L., Nazari, N., Bandarchi, M., Farashiani, A., & Haddad, S. (2019). Knowledge sharing mechanisms in virtual communities: A review of the current literature and recommendations for future research. *Human Systems Management*, 38(4), 365-384. doi:10.3233/HSM-190516
- Rajabion, L., Wakil, K., Badfar, A., Mojtavavi Naeni, S., & Zareie, B. (2019). A new model for assessing the impact of ICT and digital knowledge on students' thoughts and beliefs. *Journal of Engineering, Design and Technology*, 17(5), 943-959. <https://doi.org/10.1108/JEDT-01-2019-0008>
- Richmond, S. (2020). The Importance Of Online Communities In 2020. *Forbes*. <https://www.forbes.com/councils/forbestechcouncil/2020/08/26/the-importance-of-online-communities-in-2020/> [accessed 20 August 2024].
- Sari, H., & Othman, M. (2018). Factors Affecting Participants' Knowledge-Sharing Behaviors in Online Communities: a Systematic Review. *International Journal of Engineering & Technology*, 7(4.35), 378-382. <https://doi.org/10.14419/ijet.v7i4.35.22766>
- Shallen, M. S., Yusof, H. S. M., Mohammed, N. H., Zahari, A. S. M., & Hamzah, S. F. M. (2020). Knowledge Sharing in Online Community: A Review. *Journal of Physics: Conference Series*, 1529. doi:10.1088/1742-6596/1529/2/022052

- Sharratt, M., & Usoro, A. (2003). Understanding Knowledge-Sharing in Online Communities of Practice. *Electronic Journal on Knowledge Management*, 1, 187-196.
- Souri, A., Rahmani, A. M., Navimipour, N. J., & Rezaei, R. (2019). Formal modeling and verification of a service composition approach in the social customer relationship management system. *Information Technology & People*, 32(6), 1591-1607. <https://doi.org/10.1108/ITP-02-2018-0109>
- Tang, J-H., & Yang, H-L. (2005). User role and perception of requirements in a web-based community of practice. *Online Information Review*, 29(5), 499-512.
- van den Hooff, B., & de Ridder, J. A. (2004). Knowledge sharing in context: The influence of organizational commitment, communication climate and CMC use on knowledge sharing. *Journal of Knowledge Management*, 8(6), 117-130. <https://doi.org/10.1108/13673270410567675>
- von Krogh, G., Nonaka, I., & Aben, M. (2001). Making the most of your company's knowledge: A strategic framework. *Long Range Planning: International Journal of Strategic Management*, 34(4), 421–439. [https://doi.org/10.1016/S0024-6301\(01\)00059-0](https://doi.org/10.1016/S0024-6301(01)00059-0)
- Yilmaz, R. (2016). Knowledge sharing behaviors in e-learning community: Exploring the role of academic self-efficacy and sense of community. *Computers in Human Behavior*, 63, 373–382. doi:[10.1016/j.chb.2016.05.055](https://doi.org/10.1016/j.chb.2016.05.055)
- Yue, D., & Zhang, H. (2016). Research on the influencing factors of knowledge sharing in online virtual community. In *Proceedings of the 2016 3rd International Conference on Materials Engineering, Manufacturing Technology and Control*. DOI:10.2991/icmemtc-16.2016.95
- Zhang, J., Ma, Y., & Lyu, B. (2021). Relationships Between User Knowledge Sharing in Virtual Community with Community Loyalty and Satisfaction. *Psychology Research and Behavior Management*, 14, 1509-1523. doi: 10.2147/PRBM.S33113
- Zheng, T. (2017). A Literature Review on Knowledge Sharing. *Open Journal of Social Sciences*, 5(3), 51-58. doi:[10.4236/jss.2017.53006](https://doi.org/10.4236/jss.2017.53006)
- Zygouris, F., & Papadopoulou, S. (2022). The Added Value of Knowledge Management in the Operation of Public Organizations. *International Journal of Scientific Research and Management*, 10(08), 3797-3806. doi: [10.18535/ijstrm/v10i8.em07](https://doi.org/10.18535/ijstrm/v10i8.em07)

# The effect of gamification in the field of tourism and social media

## Gamification, tourism and social media

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### Abstract

The current study investigates the impact of gamification on social media and in the field of tourism and the intercultural communication. It aims to present and analyze the theories that have been formulated around gamification and provide answers regarding its contribution to tourism and social media. It is noted that the elements of gamification have been used more in education and health and less in the tourism industry. It also highlights all the opportunities that gamification offers when tourists visit places for holidays and businesses. At the same time, through the research, it is established that with the use of elements of gamification, the loyalty of users on social media increases while tourism is promoted more directly and efficiently. Additionally, this research is trying to tackle the need for innovative strategies to enhance user engagement and interaction within the tourism industry through the integration of gamification elements. The specifications of this problem may include the lack of personalized experiences for tourists, limited user participation in social media platforms related to tourism, and the need for increased customer loyalty and satisfaction. The challenges that we are aiming to address in this manuscript involve identifying effective gamification techniques that resonate with tourists, understanding the impact of gamified experiences on user behavior and decision-making in the tourism sector, and exploring the potential benefits and drawbacks of incorporating gamification in social media marketing strategies for tourism businesses. By addressing these challenges, our research aims to contribute valuable insights to the field and offer practical recommendations for industry stakeholders. Furthermore, gamification provides new opportunities to promote tourist destinations and improve interaction with people on social media in various regions. The present study is a theoretical and descriptive approach. It is also explanatory research. In particular, every research related to or with the topic was researched and evaluated through Scopus and Google Scholar. Found 12 scientific articles that were published between 2020 and 2022.

**Keywords:** Gamification, Tourism, Social Media, Digital Marketing, Intercultural Communication, Human Computer Interaction

### Introduction

Gamification has a significant impact on the tourism sector as it enhances engagement, interactivity, and personalization, while also contributing to data collection (Abou - Sho and Soliman, 2021). When implemented correctly it can create immersive travel experiences,

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benefiting both tourists and tourism businesses. However, it is vital to strike a balance between the benefits of the moral part and possible challenges.

At the same time, one-way gamification can impact the tourism sector is by encouraging tourists to visit lesser-known destinations or engage in sustainable practices. For example, a gamified app could offer rewards or badges to tourists who visit eco-friendly attractions or use public transport instead of private vehicles.

At the same time, gamification can be used to promote local businesses and increase tourism spending. By offering incentives or discounts through platforms that use gamification, tourists are encouraged to explore local shops, restaurants, and services, thereby boosting the local economy.

Overall, gamification has the potential to positively impact the tourism sector by increasing tourist engagement, promoting sustainable practices, enhancing the overall experience, and driving economic development in local communities ( Abou - Sho and Soliman, 2021).

Gamification can be a powerful tool for marketing and promoting tourist destinations. Interactive games and challenges can attract visitors. Social media campaigns with gamified elements can go viral and reach a wider audience. It is also noted that tourism businesses can collect valuable data through gamified applications and platforms, including user preferences, behavior patterns, and feedback. (Abou - Sho and Soliman , 2021).

This data can be used to improve services, adjust marketing strategies, and improve the overall tourist experience. Of course, it can be used to promote responsible and sustainable tourism. Tourists are rewarded for environmentally friendly actions such as using public transport or reducing waste. However, both destinations and businesses that embrace gamification often gain a competitive advantage. Gamification can have many advantages, it is important to consider possible disadvantages, such as addiction to applications or excessive tourism in certain areas. Also, data privacy and security issues must be addressed to protect tourist information.

### **Community tourism in emerging cities using gamification**

Nuanmeesri 's research (2022) aims to develop community tourism in emerging cities by applying the gamification approach to improve the level of products and services in offline and online operations. Mobile app and website development focuses on promoting and advertising tourist attractions, accommodations, restaurants, hotels, and local businesses. The algorithm was developed based on data collected from tourists, staff of tourist attractions, and local businessmen as a whole. Selected local businesses that met the application standards were showcased by reward pin icons displayed on Google Maps. Reward pin icons representing businesses provide valuable information to tourists. The app created by Nuanmeesri (2022), predicted the practicality and convenience of a new mobile app that integrated social gaming with technology. B is location-based, measuring tourist satisfaction levels and recycling

behavior. The research focuses on the development of applications for both players, especially allowing local entrepreneurs to play a key role in updating information in systems for application in adaptive tourism recommendations. Tourists act as seekers of community tourism and create the impetus for entrepreneurs to develop their enthusiasm and build the standard of products and services in cities to be on par with big cities. This research magnifies Thailand's tourism business opportunities in the new normal under the COVID19 pandemic. This application can boost Thailand's economy with the development of digital technology. Many Thai businesses benefit from its exploitation, such as accommodation, restaurants, local shops and souvenir shops. In terms of methodology, gamification was applied to offline and online activities to promote goal achievement through which rewards or pins were presented on Google maps in the developed applications. There are also rewards such as freebies or extra discounts for tourists who used the app and recorded the locations they visited or were endorsed by local businesses. Both the content and design features of the apps were evaluated by five experts who had expertise in information technology or tourism development. Then, the developed applications were presented to the forty-five samples consisting of tourists, local businesses, and tourism development officials who were interested in the application (Nuanmeesri, 2022). Their learning outcomes were assessed with a pre-training test and a post-training test. The results showed that their learning outcomes after the training were better than before the training. The result showed that users rated the app's overall effectiveness in raising community tourism standards at the highest level. The proposed algorithm was used to improve the suggested travel packages based on the historical travel log and visit locations obtained from the system. It appeared that both rates were consistent, referring to visits from the eighty-five tourists who used the app. As a result, an indirect adaptive tourism recommendation was made for tourists about current tourism. The development of mobile games and web applications has helped the public sector to boost the tourism industry in emerging cities, especially local businesses or entrepreneurs. The tourism development agency had recorded and updated information about local businesses and how they regularly improved their business standards. Gamification has motivated many local businesses to have a goal and achieve it by having pins as rewards displayed in the app. It also helped users to identify standard local businesses and brought more profits for them. Gamification has also been applied to offline activities conducted by the public sector, for example, training, evaluation, research, brainstorming, and discussion with tourists. These were integrated with electronic technology, which was low-cost and simple, to record income and show expenses (Nuanmeesri, 2022).

### **The effect of gamification on tourist engagement**

Gamification can have a positive impact on customer loyalty in the tourism industry and the intercultural communication. By incorporating gamification elements such as rewards, challenges, and leaderboards into the customer experience, businesses can boost engagement and encourage repeat visits. Gamification can create a sense of fun and excitement, making customers stay loyal to a particular tourism brand or destination. Additionally, it can foster a



sense of achievement and satisfaction when customers complete tasks or earn rewards, further enhancing their loyalty. However, it is important to note that the effectiveness of gamification in increasing customer loyalty may vary depending on the specific application and the preferences of individual customers (Abou - Shouk and Soliman, 2021). The Abou - Shouk study and Soliman (2021), relate to the adoption of gamification by travel agencies. At the early stage of gamification adoption in tourism, this study investigates the traditional factors influencing adoption intention and the impact of gamification on customer loyalty and brand awareness and loyalty. Travel agencies are an important component of the travel and tourism industry and most tour packages are sold and operated by them. Thus, the study provides important insights to travel marketers and travel planners in travel agencies to understand the factors that predict customer engagement, the growth of brand awareness and loyalty, and the progress of marketing efforts. Researchers examining actual or intended technology adoption in tourism and the human computer interaction, typically use the Technology Acceptance Model (TAM), Theory of Reasoned Action (TRA), Theory of Planned Behavior (TPB), Unified Theory of Technology Acceptance and Use (UTAUT), or the extended versions of these models for predicting adoption behavior (Abou - Shouk and Soliman, 2021). UTAUT is an integrated model that incorporates the important common variables born from previous theories to predict technology adoption intention. UTAUT has four dimensions that predict technology adoption intention: performance expectancy, effort expectancy, social influence, and facilitating factors. The research uses UTAUT to predict the factors influencing the intention to adopt gamification. One outcome of gamification adoption is engagement, and it acts as an antecedent of brand awareness and brand loyalty. Therefore, the current study integrates previous research on gamification adoption, customer engagement, brand awareness, and brand loyalty to predict the antecedents and consequences of gamification adoption in the tourism sector. Using UTAUT, this study examined the antecedents and outcomes of gamification adoption intention in the category 'A' travel agencies in Egypt. Overall, according to the findings, all hypotheses were confirmed. The empirical findings showed that performance expectancy has a positive effect on the behavioral intention to adopt gamification applications in Egyptian travel agencies. The use of game applications has a substantial impact on company performance in terms of improving marketing activities and competitiveness. These benefits could then improve the intention to use gamification applications for effective tourism marketing in these businesses. It is also revealed that behavioral intention to adopt gamification applications in travel agencies was significantly influenced by effort expectancy, which in turn positively affects performance expectancy. Furthermore, the results showed that there is a significant and positive relationship between social influence and game adoption intention in travel agencies in Egypt. In addition, the findings of the study demonstrated that there is a positive association between facilitating conditions and behavioral intention to use game applications and gamified websites. To adopt gamification for tourism marketing purposes, tourism businesses (e.g. travel agencies) in Egypt need to pay more attention to provide all the requirements of financial and skilled human

resources, as well as substantial support that helps create platforms and gamification applications to be effective.

### **The effects of gamification on the psychology of tourists**

The study by Kim et al., (2021) examined the impact of two game features, a) letterboxing (i.e., winning stamps from hidden places) and b) extrinsic rewards (gifts), to capture the effect of gamification on tourists' psychological outcomes in a park maze. A total of 1,203 participants were divided into four conditions using an experimental field, resulting from the factorial combination of letterbox and extrinsic rewards. The main effects of letterbox inducing intrinsic motivation. The results show that there are significant interaction effects between letterboxes and rewards on tourist flow. Overall, it appeared that gamification is an innovative practice for offering unique experiences to users by enhancing psychological outcomes. A growing number of hospitality and tourism organizations are adopting game-based design arrangements to deliver their products and services. Gamification has become an inevitable component of space design and marketing strategies. Based on the phenomenon, this study aimed to evaluate the effectiveness of gamification in the tourist attraction of the maze park with a field experiment of 1,203 visitors (Kim et al., 2021). Examining two elements of gamification, letterbox, and extrinsic rewards, this study investigated its effects on tourism attraction related to intrinsic and extrinsic motivation and the psychological effect of fun, flow, enjoyment, and satisfaction (Kim et al., 2021).

The field experiment was run to estimate the effect of creating a mailbox by obtaining six stamps from hidden places and the extrinsic rewards of obtaining a bottle of water and chocolate. The findings show that the presence of mailboxes in attractions stimulates the intrinsic motivation of visitors, enhancing their psychological outcomes such as fun, enjoyment, and satisfaction. In contrast, rewards were only significant for fun, while other psychological effects of flow, enjoyment, and satisfaction were not as effective. Therefore, it is concluded that providing intrinsic motivation better facilitates higher engagement in activities that cause more fun and enjoyment. This result is relevant to previous literature that intrinsic motivation plays a key role for pure pleasure game users, regardless of the presence of rewards (Kim et al., 2021).

Regarding the marginal effect of the existence of extrinsic rewards in increasing positive psychological outcomes, it is due to the lack of psychological attachment to the rewards in the context of the game. Results show that using mailboxes and extrinsic rewards has lower positive psychological outcomes (eg, fun, satisfaction) compared to those without extrinsic rewards. Another explanation is that the mission to achieve the rewards could cause psychological stress on visitors. The opposite of rewards is that visitors are under pressure to complete the mission to earn rewards (reference). In other words, visitors will not be fully engaged in the game mechanics as they lose the rewards if they fail to complete the mission. In particular, if visitors start to feel any pressure, the rewards will only feel like a task to complete, and consequently, the positive expectations from the implementation of gamification will be significantly reduced.

Kim's findings et al., (2021), confirm that simply adopting gamification elements is not always practical.

In addition, the results show a significant interaction between mailbox and participant flow rewards. Extrinsic rewards are shown to supersede the positive impact of the letterbox along with participant flow. This finding reveals that the use of extrinsic rewards can undermine positive letterbox effects. In other words, such rewards dampen tourists' positive emotions induced by other elements of the game, designed to enhance their intrinsic motivation. It is explained by the term, overjustification effect, as consumers' intrinsic motivation to perform a task is reduced due to expected extrinsic incentives. These findings are in line with previous literature. If participants understand that recognition will be obtained from external sources and/or rewards, their intrinsic motivation is transformed into extrinsic motivation. Ideally, people should be interested in a particular task first, regardless of the prize, and earn rewards based on their achievement. However, this expectation will be subverted if they obsess only about the reward and not the task. As mentioned earlier, it appears that intrinsic motivation is reduced by rewards. Offering a reward is a well-known game element for attracting people. However, the reward system is not the desired response to elicit visitor motivation, commitment, and satisfaction for the tourist attraction experience (Kim et al., 2021).

### **Gamification and visitor engagement**

La Cuadra et al., (2020), in their research, dealt with gamification and visitor engagement. Experiences are the basis of the tourism sector and the creation of unique and unforgettable moments allows differentiation from the competition. Their research aimed to analyze the effects of the experience of visiting a zoo, the emotions experienced by visitors, and how they influence (positive and/or negative) behaviors. At the same time, the aim was to investigate whether an innovation could be used to contribute to user engagement. To test the psychometric properties of their constructs, univariate and multivariate normality of the observed variables were tested based on the skewness and kurtosis of the observed variables using SPSS software. Then, a confirmatory factor analysis was performed on the eight measurement scales under study using the robust maximum likelihood method. Several changes were introduced following various criteria to improve the original measurement model.

Once the psychometric properties of the first-order model were verified, a structural equation model was completed with the ultimate goal of contrasting the eight hypotheses that ultimately formed the model (La Cuadra et al., 2020).

As presented, out of the five experiential modules, two of them are very important to excite tourists during the visit. Sensory experiences go a long way in enhancing emotions, as this is an animal park that offers visitors the chance to see wild animals coexisting with other compatible species, just like in nature. In addition, the experiences of emotions contribute significantly to the improvement of sensation. The intensity of the relationship is even greater since the emotions during the visit are allowed to enhance the feelings of the visitors

(entertainment, mood, etc.). In contrast, three experiential modules do not seem to contribute to making the tourist experience more emotional: cognitive experiences (the visitor's curiosity is not sufficiently awakened), functional experiences (since everyone could take pictures, no functional advantages were perceived), and relational experiences (significant interest in purchasing souvenirs or interacting with others has not been demonstrated); With the effects of emotions, a positive and significant relationship with loyalty (positive attitudes) is observed. More excited tourists will engage more positively with the park than less excited tourists. In contrast, emotions do not significantly affect the negative behaviors of claims and complaints (negative involvement). Both excited and unenthusiastic tourists would express their non-conformities and complaints without canceling each other out. This may be because tourists tend to deal with the negative aspects more than the positive ones. Instead, the results lead to the conclusion that more and less excited tourists can complain equally. Both faithful and non-faithful tourists air grievances and claims without negating each other (La Cuadra et al., 2020).

### **Review platforms and gamification**

Bravos et al., (2021) surveyed platforms related to tourism reviews that use game elements. Tourism and hospitality review platforms use gamification to motivate people to create content that other users make. The Bravo et al., study (2021) propose and test a model based on RAMP. (Relationship-Autonomy-Principle-Purpose) framework for analyzing the impact of gamification on individuals' psychological need satisfaction, motivation, and intention to create user-constructed content. Using data from a sample of 266 US-based registered TripAdvisor reviewers, findings showed that interacting with gamified elements promotes psychological need satisfaction and controllable motivation. In parallel, feelings of mastery and purpose promote autonomous motivation from both types of motivation, only autonomous has a significant impact on the intention to create content on the evaluation platform. Lately, tourism and hospitality review platforms have started implementing gamification features to motivate reviewers to create content. This empirically demonstrates the driving force of gamification. As expected, interacting with motivational features causes reviewers to develop feelings of relatedness, autonomy, mastery, and purpose. However, only craft and purpose significantly increased autonomous motivation to create content on the platform. It is also important to note that the findings showed that the length of time reviewers have been registered with TripAdvisor, and the number of points they have accumulated on TripCollective, do not significantly affect the intention to create user-generated content. This is an interesting finding given that some previous studies have suggested that gamification suffers from a “novelty effect”. The Bravo et al., study (2021), showed that both experienced and inexperienced reviewers are equally susceptible to creating user-generated content on the gaming platform.

## **AR and its contribution to tourism and gamification**

Lent and Marciniak (2020), carried out research regarding the gamification technology and augmented reality (AR) in the tourism industry. The city of Bydgoszcz in Poland was chosen as the target object, which does not have the most popular characteristics of sun, sand, and sea. Gamification and AR technology demonstrate educational and motivational properties, the goal of Lent's research and Marciniak's (2020) was to analyze the potential of increasing the tourism of the city by creating a special tourism game based on the location. The researchers focused on investigating whether such a game would have a chance to be an unforgettable tourist experience and whether tourists would return to the city.

The survey was conducted between 16.06 and 30.06.2019 through an online survey as this tool allowed access to a larger number of foreign tourists. Ultimately, 123 questionnaires were collected, but only 115 of them contained all the data needed to perform the analysis. The selection of the sample was made at the level of 227 valid questionnaires, for this reason, the research carried out can be considered indicative but not representative.

The criteria that determined the adequacy of the questionnaires for the study were age and ethnicity.

The research found that foreign tourists are interested in experiencing different tourism resources of the city, so a mobile game could be a useful tool for them, as gamification and augmented reality are considered to have strong motivational and educational properties. The majority of respondents preferred to travel in groups, which is important for planning a game.

The survey also revealed that many of the tourists would stay overnight in the city due to their preference for a game that would last more than one day (85.1% of all respondents and 82.35% of sample group members). . At the same time, the sample group shows a strong positive attitude towards the application of AR in a mobile game. 80.9% of respondents believe it would have a positive impact on the game's appeal. The described augmented reality tourism game would rather encourage or encourage the return of 90.2% of them. However, for 48.8% of the sample group the game has the opportunity to be an unforgettable tourist experience and 46.3% answered "probably yes".

The insights provided by the research lead to the conclusion that a location-based mobile game (using gamification and AR techniques) is an unforgettable experience. In addition, the development of such a game and its introduction to the market would increase the potential of foreign tourism in the destination, encouraging tourists to return to the place (78% answered "probably yes" and 12.2% "definitely yes").

Foreign tourists tend to show a positive attitude towards mobile tourism games that apply gaming techniques and use augmented reality technology. In addition, the characteristics of an ideal mobile tourism game could enhance the tourism attractiveness of Bydgoszcz (Lent and Marciniak, 2020).

## **Significant gamification trends in the tourism industry**

Several trends have emerged in the application of gamification within the fields of tourism and social media. One of the most significant trends is the increasing emphasis on personalization and customization. Gamified applications are now leveraging user data to tailor challenges, rewards, and content to individual preferences, significantly enhancing user engagement and satisfaction. Another important trend is the integration of augmented reality (AR) and virtual reality (VR) to create immersive gamified experiences. These advanced technologies provide users with interactive and engaging ways to explore tourist destinations and share experiences on social media, transforming how users interact with digital content. Social interaction and community building have also become focal points in gamification strategies. Social media platforms and tourism apps are incorporating features that encourage collaboration, competition, and community engagement (Lent and Marciniak, 2020). This focus on fostering social connections enhances user interaction and loyalty, making the platforms more attractive and vibrant. The use of data-driven insights and analytics to refine gamification strategies is another crucial trend. By leveraging big data and analytics, tourism and social media platforms can understand user behavior better, optimize gamified elements, and continuously improve the overall user experience. There is also a growing awareness of sustainability and ethical considerations in gamification (Bravo et al., 2021). Gamification is increasingly being used to promote sustainable tourism practices and responsible behavior on social media. Furthermore, ensuring the ethical use of gamification is becoming paramount to avoid manipulative tactics and ensure user trust. The demand for cross-platform and omnichannel experiences is on the rise. Users expect seamless and connected experiences across multiple platforms, such as mobile apps, websites, and social media platforms, driving the need for integrated gamification strategies that provide a consistent user experience (La Cuadra et al., 2020).

The emergence of blockchain technology and cryptocurrencies is also influencing gamification. Blockchain offers transparency and security for rewards and incentives, while cryptocurrencies provide new avenues for rewarding users, such as through digital tokens. Enhanced user feedback mechanisms are being utilized to gather valuable insights and improve services. Gamified surveys, feedback loops, and user-generated content mechanisms help organizations continuously refine their offerings based on user input. There is also a trend towards promoting health and well-being through gamified experiences. Tourism apps are encouraging physical activity and exploration, while social media platforms are using gamification to support mental well-being initiatives. Collaborations and partnerships between tourism boards, tech companies, and social media platforms are becoming more common (Kim et al., 2021). These collaborative efforts lead to innovative gamified experiences that benefit from combined expertise and resources, ultimately enhancing user engagement and satisfaction. Additionally, gamification is being used to manage and respond to crises. During crises such as pandemics or natural disasters, gamification can provide timely information, promote safe practices, and maintain user engagement even in challenging times. Lastly, there is a trend

towards cultural and localized gamification. Customizing gamified elements to reflect local cultures and traditions can deeply engage users and promote cultural understanding, making gamified experiences more relevant and impactful. Incorporating these trends into the review of gamification's effect in tourism and social media provides a comprehensive overview of the current state and future directions of this dynamic field, highlighting both the opportunities and challenges that lie ahead (Abou - Shouk and Soliman, 2021).

### **Gamification in tourist guide applications**

The Tourist app Guide is a mobile application which is useful for everyone who goes on vacation. Through the app, visitors easily discover the most attractive places using the maps as the app suggests the top destinations for visitors to visit. Hence, visitors mustn't have to waste their time searching for information about the place and location details. Researchers Yong et al., (2021), who created the app, implemented the following game elements, point, reward, and challenge. The challenge or mini-game, such as quizzes, will make visitors visit a location to find the answers. Visitors can also get some reward based on the points they collect for each of the correct answers they give. Therefore, the application is developed to provide information about the attractions to the users and to encourage and motivate the users to visit the various places. The methodology used to develop the Tourist application Guide is prototyping. The software was developed in phases including initial requirement, design, prototyping, customer evaluation, review, update, and final system development. As a result of the engagement evaluation of the developed application, the challenges of the developed Tourist Guide application are not very attractive to the user. Therefore, in the future, the app should improve its performance and store big data for more challenges to improve the travel and entertainment experience. Adding more gamification elements, such as leaderboards, badges, and levels, would be helpful to make the app more competitive and able to capture the attention of potential users (Yong et al., 2021).

### **The challenges of eco gamification for tourism**

When it comes to the potential of gamification, the tourism industry relies on some good and bad cases. As a successful case, it is the example of the Costa Cruise Company where gamification was used to inform travel agents, retailers, and sales staff about existing offers in tourist destinations. To achieve this, the company used an e-learning platform with game mechanics to engage its target audience through a game. The Marriott Hotel also successfully used the recruitment strategy to reach younger candidates for the hospitality industry. On the other hand, Disneyland is cited as a failed case of games entering the tourism context. The company developed a score tracking system to rank and display, on a panel, the work speed of the cleaning crew, in which those who organized sheets, towels, and pillows the fastest were named with their performance ranking (Souza et al., 2020). However, the system did not live up to the expected objective of creating healthy competition among workers. Instead, it was the

cause of creating negative effects on the team. It is noted that gamification does not always use the moral part and this has been a reason for criticism from researchers and game developers, mainly due to the careless use of game mechanics and elements. For example, the term "pointsification" relates to the reduction of gamification in a points system, without taking into account more effective functions, such as intrinsic and extrinsic motivation, aimed at engaging users in long-term gamified actions. From a different perspective, "gamipulation" refers to the malicious use of game design elements to manipulate user behavior without their consent (Souza et al.,2020). These terms show the ambiguity between the ideas of a constructive tool for users and a source of tension, with dangerous effects on a person's mental and social well-being. Interviews with technology company providers, and current and potential buyers shed light on some of the benefits that eco-gamification can bring to the tourism sector, as well as the challenges that both buyers and providers must face to implement it. From their research Souza et al., (2020), identified six main benefits of eco-gamification: the promotion of "green" behavior and sustainable tourism, the easier transmission of complex information through entertainment, rewarding users for good practices, improving engagement and the tourist experience, reaching new target groups to avoid over-tourism. On the other hand, respondents pointed out that lack of investment, resistance to new technologies/ideas, low eco-consciousness of tourists, and distraction from issues that matter are the main obstacles they face when planning to sell or adopt the eco-gamified tools.

Eco-gamification can be used as a strategic tool to overcome the challenges that tourism brings to destinations and companies. Its application for environmental purposes serves tourism activities well, especially in terms of strategic planning and management towards the SDGs. Regarding the benefits and challenges of eco-gamification, empirical evidence shows that eco-gamification takes on different roles for buyers and providers. Buyers see eco-gamification as an alternative solution to overcome challenges, such as involving tourists in environmental actions, while having the opportunity to reach new customers. Meanwhile, providers are more concerned about the superiority of buyers' technological resistance and perceive eco-gamification as a facilitator to address sustainability issues in tourism.

Challenges such as lack of investment and distraction from the issues that really matter have been identified and show diverging and converging views. Regarding the lack of investment, the perspectives are different: although buyers cite the high value of the technology and the fact that it can quickly become obsolete, providers cite pressure from buyers, who demand low prices, even in extremely customized solutions.

Effective eco-gamification depends on supply and demand and, at the same time, on the responsibility of different stakeholders (providers, buyers, players) throughout the value chain, through a broad business-to-business logic. At the same time, the results suggest that young people may be more concerned and prone to action, while also being more receptive to eco-gaming and technology. Moreover, as the interviewees argued, eco-gamification is a powerful



tool for combining fun and seriousness, but, again, care is needed so that people do not forget the real purpose (Souza et al., 2020).

Furthermore, the research findings indicate several benefits and potentials of (ecological) gamification on the tourism experience and tourists' engagement with the destination, citizens, and host community. Sustainable destinations are good for tourists as well as locals. A smart eco-gamification strategy will help to avoid hypertourism, for example, the dispersal of tourists from crowded attractions. This can promote collective thinking, based not only on competition but also on cooperation. In this context, the results of the study have practical implications for tourist destinations, game companies, tourism organizations, and the local community. Therefore, a deeper understanding of the challenges and benefits presented by developers and buyers can help design customized eco-gamified tools for destinations, increasing the likelihood of environmental actions being used by different audiences (Souza et al., 2020).

### **The use of gamification as a strategy to improve tourist behavior and support sustainable tourism**

The research of Frías-Jamilena et al., (2022) aims to determine whether gamification can contribute to improving the sustainability of tourism destinations. It seeks to determine whether gamified environmental interpretation has a greater effect on tourists, in terms of their pro-environmental knowledge, attitude, and behavior than a non-gamified version, whether these variables are influenced by psychological distance, and whether psychological distance moderates the effect of environmental interpretation. The results show that the effect of environmental interpretation on tourists differs according to psychological distance. This effect is more pronounced when the participant perceives that the destination is close. However, in the case of gamified environmental construal, regulatory interpretive adaptation is found, which intensifies the effect on pro-environmental knowledge, attitude, and behavior among those for whom psychological distance is greater. Analytically, the main objective of tourism managers is to maximize the competitiveness of their destinations and environmental sustainability is a key factor mainly because it is necessary for the development of long-term tourism activities. Moreover, it has been proven as reported by Frías-Jamilena et al., (2022), that tourists damage the environment in many different ways even to the extent that they may lead the local population to completely reject the tourist activity. The paper also sought to determine whether this effect can be moderated by the tourist's psychological distance.

Overall, the results indicate that a) the type of environmental interpretation design exerts a significant effect on pro-environmental learning, attitude, and behavior (as also found in previous studies). That is, the form of the interpretation experience affects the outcomes of that experience, and the gamified environmental interpretation yields better results than the non-gamified version in terms of pro-environmental knowledge, attitude, and behavior. This finding is consistent with other studies that demonstrated the positive effect of gamification on pro-environmental behaviors such as recycling, using less polluting transportation methods, etc.

From the results of Frías-Jamilena 's et al., (2022), research, it emerged that the emotional connection between gamification and tourists is demonstrated through their gamified experience or more specifically, through enjoyment and intrinsic motivation. Enjoyment is an emotional outcome of gamification, and numerous studies demonstrate the importance of emotions in influencing environmental interpretation. When a person performs an activity for the simple satisfaction of performing the activity itself and no external forces are influencing their will intrinsically motivated behaviors tend to lead to deep commitment. At the same time, if gamification is successful in inducing intrinsic motivation, then pro-environmental behavior will be sustained and will not decrease even in the absence of extrinsic stimuli such as fines, rewards, or legal regulations. At the same time, the results show that tourists for whom the destination is distant show inferior results in terms of pro-environmental learning, attitude, and behavior. For this tourist profile, the environmental interpretation experience will be less effective, regardless of the design type. Additionally, psychological distance exerts a moderating effect on the relationship between gamification and pro-environmental learning, attitude, and behavior. When the individual exhibits greater psychological distance, a gamified environmental interpretation experience produces a significantly greater effect on pro-environmental learning, attitude, and behavior than the non-gamified version. However, when they present psychological closeness, there are no significant differences between the gamified and non-gamified versions in terms of their respective effects on pro-environmental learning, attitude, and behavior. This can be explained by the fact that both types of environmental interpretation provide the same basic service (Frías-Jamilena et al., 2022).

## **Conclusions**

Gamification can have a positive impact on tourism and social media by enhancing engagement, promoting experiences, and enhancing loyalty among users. When used carefully and ethically, gaming strategies can create win-win situations for tourists, businesses, and social media platforms. Gamification can contribute to user engagement. Game techniques such as challenges, badges, and rewards encourage tourists and social media users to actively participate and interact with the content. This engagement can lead to longer app or website sessions and increased social media interactions (Yong et al., 2021). At the same time, as emerged from the literature review, customer-user loyalty is increasing. Game elements such as rewards programs and points can foster a sense of loyalty among tourists and social media followers. Users are more likely to return to destinations or social media platforms that offer rewards and incentives. It is noted that through gamification, the experiences of tourists are also improved. Gamification can be used to promote and enhance tourism experiences. For example, tourists can participate in location-based games that encourage exploration and discovery of new places. Gamification has not only improved tourist engagement but also provided innovative ways to explore destinations, learn about cultural heritage, and share experiences. By transforming traditional tourism activities into interactive and immersive experiences,

gamification has the potential to attract a broader audience, travelers who seek unique and interactive experiences. On social media, gamified challenges can encourage users to share their travel experiences by creating user-generated content. At the same time, as our research showed, the user-generated content itself is significantly affected by gamification. Gamification in social media can encourage users to create and share content related to tourism experiences. Social media platforms that employ gamification techniques have observed increased user activity, content creation, and community building. The sense of community and social interaction fostered by gamified elements encourages users to remain active and engaged, contributing to the platform's growth and vibrancy (Frías-Jamilena et al., 2022). Hashtags, challenges, and contests can encourage users to share photos, videos, and reviews, which can serve as valuable promotional material. In addition, tourism businesses and social media platforms can collect valuable user data through gamified interactions. This data can be used to personalize recommendations, advertisements, and content, providing users with more relevant information and experiences. Gamification contributes to educational and cultural engagement (Souza et al., 2020). Gamification can be used to educate tourists about the history, culture, and attractions of a destination. Interactive quizzes, augmented reality apps, and virtual tours can make learning about a place more engaging and enjoyable. Furthermore, the sustainability of tourism is based on gamification. Gamification can promote responsible and sustainable tourism practices. Tourists and social media users can be rewarded for environmentally friendly actions such as using public transport or supporting local businesses, thus encouraging more sustainable travel and lifestyle choices. There are also, challenges and ethical issues (Lent and Marciniak, 2020). Moreover, the findings of this research suggest that the success of gamification in tourism and social media is largely dependent on the thoughtful design and implementation of gamified elements. It is essential for tourism and social media marketers to understand their audience's preferences and behaviors to create engaging and meaningful gamified experiences. The balance between fun and functionality is crucial to ensure that gamification enhances rather than detracts from the user experience (Yong et al., 2021).

Future research should continue to investigate the long-term effects of gamification in these fields and explore new and emerging gamification techniques. Additionally, examining the ethical implications of gamification and its impact on user behavior will be critical as the use of these strategies becomes more prevalent (Souza et al., 2020). Ultimately, gamification presents a powerful tool for transforming the tourism and social media landscapes, offering innovative ways to engage users, enhance experiences, and foster a sense of community. As technology continues to evolve, so too will the opportunities for gamification, promising exciting possibilities for the future of tourism and social media interaction.

## References

- Abou- Shouk, M., & Soliman, M. (2021). The impact of gamification adoption intention on brand awareness and loyalty in tourism: The mediating effect of customer engagement. *Journal of Destination Marketing & Management*, 20, 100559.
- Bravo, R., Catalan, S., & Pina, JM (2021). Gamification in tourism and hospitality review platforms: How to RAMP up users' motivation to create content. *International Journal of Hospitality Management*, 99, 103064.
- Frías-Jamilena, DM, Fernández-Ruano, ML, & Polo-Peña, AI (2022). Gamified environmental interpretation as a strategy for improving tourist behavior in support of sustainable tourism: The moderating role of psychological distance. *Tourism Management*, 91, 104519.
- Kim, YN, Lee, Y., Suh, YK, & Kim, DY (2021). The effects of gamification on tourist psychological outcomes: an application of letterboxing and external rewards to maze park. *Journal of Travel & Tourism Marketing*, 38(4), 341-355.
- La Cuadra, MTD, Vila-Lopez, N., & Hernandez-Fernández, A. (2020). Could gamification improve visitors' engagement?. *International Journal of Tourism Cities*, 6(2), 317-334.
- Lent, B., & Marciniak, M. (2020). *Enhancing tourism potential by using gamification techniques and augmented reality in mobile games*. In Proceedings of the 34th International Business Information Management Association Conference (IBIMA).
- Nuanmeesri, S. (2022). Development of community tourism enhancement in emerging cities using gamification and adaptive tourism recommendation. *Journal of King Saud University-Computer and Information Sciences*, 34(10), 8549-8563.
- Roinioti, E., Pandia, E., Konstantakis, M., & Skarpelos, Y. (2022). Gamification in Tourism: A Design Framework for the TRIPMENTOR Project. *Digital*, 2(2), 191-205.
- Souza, VS, Marques, SRBDV, & Verissimo, M. (2020). How can gamification contribute to achieving SDGs? Exploring the opportunities and challenges of ecogamification for tourism. *Journal of Hospitality and Tourism Technology*, 11(2), 255-276.
- Yong, E., Baharum, A., Tanalol , SH, Deris , FD, & Noor, NAM (2021). Gamification for tourist guide application. *Transactions on Science and Technology*, 8(3-2), 335-342.

## **Foreword to the second thematic: Data-Driven Innovations in Modern Societies**

Maria Matsiola\*

The second thematic is titled “Data-Driven Innovations in Modern Societies” and consists of four chapters exploring innovative technologies and methodologies that transform societal dynamics in communication, education, and virtual interaction.

The first paper involves a study that explores a modified Card Sorting method to investigate user mental models and evaluate the usability of a big data environmental MIT website. It is titled “Visualization of Big Environmental Data using the Card Sorting method” and unlike traditional Card Sorting, the method was adapted to assess information visualization by presenting interfaces on cards and using categories to describe their screen placement. The adapted method highlighted two critical usability issues, leading to one proposed improvement while the findings suggest that this approach enhances visualization of user mental models and offers designers a valuable tool for evaluating their work.

The second paper is titled “Communication and “smart public space”: Opportunities, challenges and supporting IoT Technologies” and it examines communication and IoT technologies as key enablers for the “smart public space” that may provide applications and services for improving essential aspects of the modern public space. A case study about the design and development (PoC) of a system of applications for the “smart public space” is presented, based on computer vision and IoT technologies, demonstrating its features and its contribution to crowd management and the safety, accessibility and overall experience of public space users. The opportunities along with the challenges of “smart public space” are further discussed.

The third paper presents the Metaverse technology as a digital metamorphosis of reality and investigates the possibilities of shaping and experiencing urban social space within a fully or partially controlled virtual environment. The chapter is titled “Metaverse as a field of communication and networking in the digital domain: challenges and prospects”. Cities evolve into digital twins, blending cultural, social, technological, and economic elements while users engage with others and objects in lifelike interactions, fostering exchanges at personal, professional, and political levels. This integration is supported by technologies like AI, IoT, AR, robotics, and cloud computing. The study highlights the Metaverse's role in enhancing communication, urban digitization, and collective decision-making, while showcasing applications across diverse fields. It offers a fresh perspective on immersive interactions in cyberspace during the Fourth Industrial Revolution.

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The fourth and last paper of the second thematic, is titled “The Boarding School (Pondok Pesantren) Education Student Character. Development and Intercultural Communication: The anxiety/uncertainty management theory”. This work focuses on how the boarding school (pondok pesantren) affects the student’s Character Development and Intercultural Communication with anxiety/uncertainty management theory. It aims, through collected observation behavioral experiments data and literature review, to investigate the relations between the boarding school system and the intercultural communication among students with different cultural background focusing on the importance of education of boarding school effects on the student character development.

# Visualization of Big Environmental Data using the Card Sorting method

Valsamou Vasiliki\*

## Abstract

Card Sorting method is mainly applied to investigate the mental models of users, having no chance to visualize them. In this pilot study, the method is used to evaluate the usability of a big data environmental MIT website. In order to evaluate the visualization of the information, the method was modified. The cards presented the interfaces while the categories described the situ of interfaces on monitor's screen. Qualitative and quantitative evaluation methods were combined as follows: (a) Hypertext recording to investigate the workflow, (b) Think-Aloud method with users to define the evaluation scenarios, (c) two Tree Test to identify the problematic nodes, (d) SUS and finally (e) Cart Sorting. The sorting was on-line, remote, moderated & hybrid. The following questionnaire of the tool was adopted to evaluate the graphical approach and the designer's color pallet. The procedure pointed out two crucial differences from the existing design. One was proposed to improve usability. This modified Card Sorting method appeared to facilitate the visualization of mental models on the tool's screen, while designers' groups may use the modification to evaluate their work.

**Keywords:** Cart Sorting, Tree Test, visualization of mental models, usability, interface's situ evaluation, human computer interaction.

## Introduction

Card Sorting is a user-centered method of analysis workflow in web designing. According to Allison et al, only 7% of recent evaluation studies of websites include or refer to the Card Sorting method, mainly used as an architectural structure tester (Allison et al., 2019). Main purpose of the method is to investigate the several approaches a user-visitor anticipates to find information under a hierarchical structure. Methodology, acquires the participates to pill up cards scattered on a physical or digital table without reference to their visual position, as being stated by several usability investigators (Lamantia, 2003; Nielsen, 2024; Paul, 2008; Rugg & McGeorge, 2005; Spencer, 2009; Tankala & Sherwin, 2024) in addition to usability expert groups i.e.: NNgroup, Syntagm, Usability gov., Userlytics, Usertest etc.

On the other hand, Indices describe ideas that need a spherical analysis approach. Weightings are both statistically and participatory developed. According to Drago the latest statistical tense to indices developing is "Symbolic" and "Interval" composition (Drago, 2022; Drago, 2017).

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Moreira stated that beside the statistical approach of indice construction, human centered methods such as interviews, queries, public opinion (PO), budget allocation (BA), ad-hoc / subjective process based on expert opinion, have been used in success with weighting (Moreira, 2012; Saltelli, 2006).

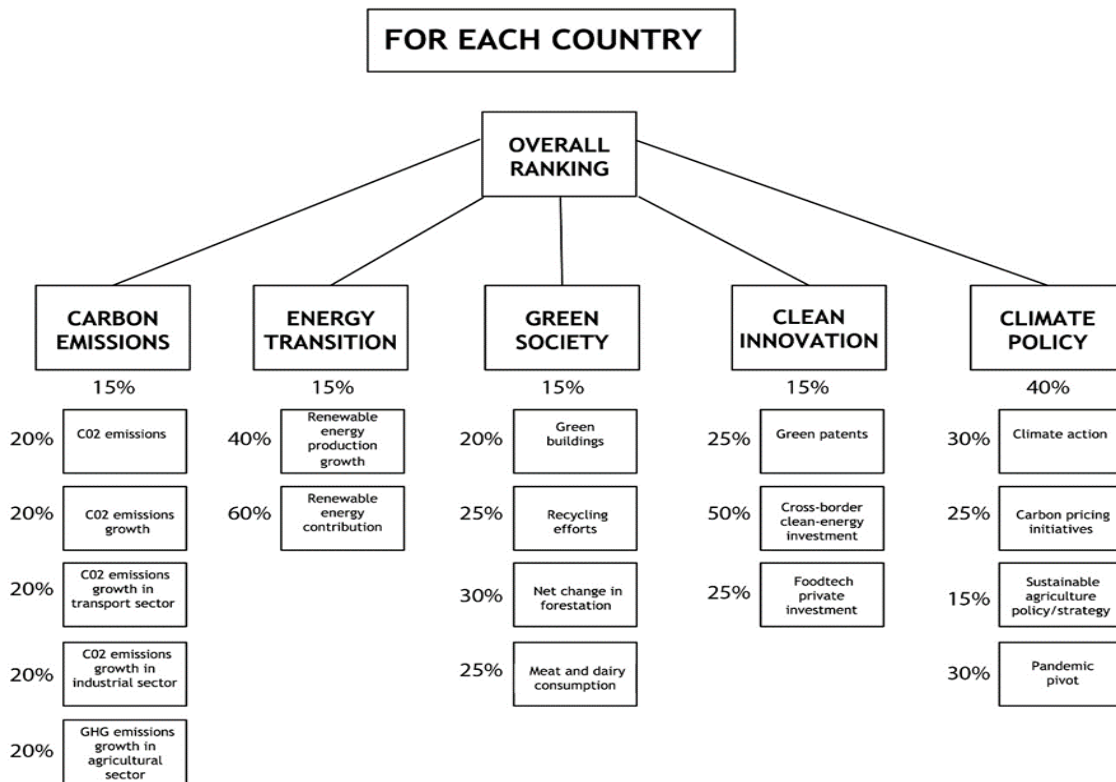
During the present postgraduate study, Card Sorting method was challenged to evaluate the visualization of “The Green Future Index 2021, MIT Review Technology, Insight” website (<https://www.technologyreview.com/2021/01/25/1016648/green-future-index>). On the first sight, it looked like a unique site for the use of Card Sorting method. The procedure led the Card Sorting to a differentiated application of the method adapted to the ability of the participants.

### **The query: What will the cards represent?**

Most postgraduate studies make use of open-source Card Sorting tools while few of them have free use (UXTweak, XSort, Kardsort, Figma, Miro 51%, Optimal workshop 43.52%) (Lee, 2021). These tools either have limitations of cards or participants per sorting (Optimal Workshop, UXTweak, UXMetrics) or unlimited cards, categories and participants with limitations of data time accessibility or lack of linked analysis (Figma, Miro) (Lee, 2021). On-line sorting complies with Rugg & Mc George description procedures severally verified by most Usability Groups through the years. In addition, tools with linked visualizations are most popular (Optimal workshop 43.52%, Maze, UXMetrics) (Lee, 2021). Tools mainly adopt directed manipulation tools i.e.: drag and drop of cards, gaining versatility of movement among the cards in separate piles forth and back the primarily and ending piles on the visual table. Most categories are named according to each participant’s hierarchical mental model (Tankala & Sherwin, 2024). Participants place the cards without reference to their design position (situ) on the media screen, i.e.: monitor’s, notepad or cell phone’s screen.

The Green Future Index 2021 data, as well been described in the linked report, derived from international government and organization data banks/lakes as: Word Bank, Bloomberg, FAO, IRENA etc. After homogenization, each Country’s score represented by a climax 1-10. Weighting proved most important to fulfill the scope of the index (fig.1). Several interviews of well-known sustainability experts, as stated in the report, led to an uneven percentage contribution of the 18 separate indexes to the five-pillar construction with a unique 40% percentage to Climate Policy pillar. Visualization of the 1824 data, of all the indexes including pillar and 76 country indexes fulfilled by a 6 pages dark mode website, connected by a category top menu. Each page was represented with a different color referred to information levels either on an interactive spatial visualization or an interactive country list with economic, spatial, score, rank criteria.





**Figure1:** Structure and weighting of the Green Future Index.

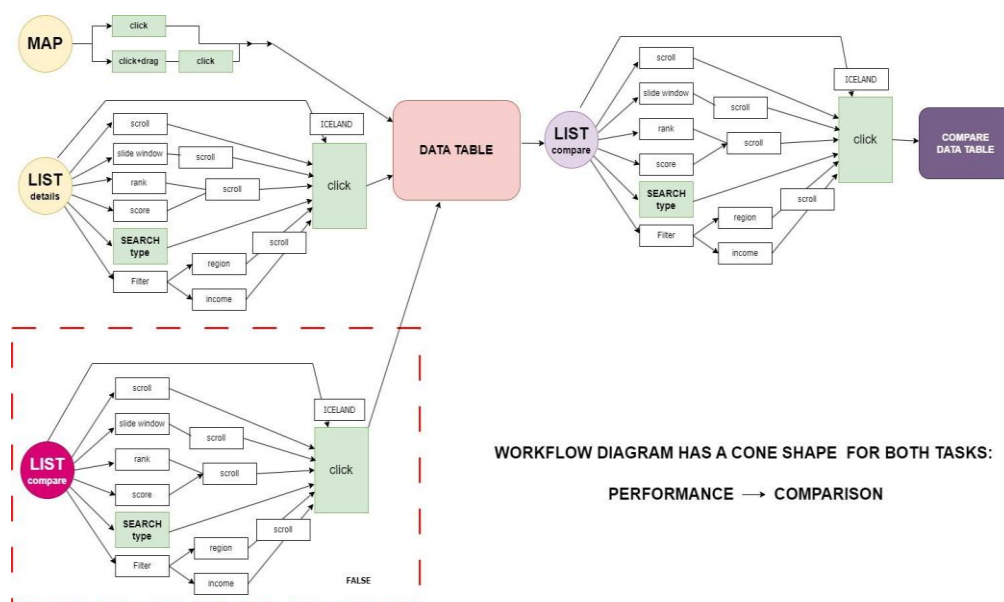
Evaluation of the website visualization refers either to graphical approach or architectural structure, i.e.: itineraries of hierarchy (Spencer, 2009:21; Styliaras et al, 2019:227-238). In order to make use of a free 20 card open-source tool, the 18 indexes looked like fitting in (Optimalsort, UXTweak). On the contrary, it has no sense to evaluate such a well-constructed Weighting of MIT specialist team, clearly described in the report. In addition, the participants should be aware of the procedure of indices construction, especially being experts in sustainability (Meadows, 1998). That wouldn't be handled by relevant seminars about the Green Future Index 2021 indexes and pillars construction, being inspired by the linked report. The participants should be already aware, ideally with an ecological background updated to Paris Agreement, which was difficult to gather within postgraduate study time limitations (United Nations, 2024). On the other hand, there was the obvious choice of 76 countries' representation on Card Sorting cards, but it was meaningless. Figma, Miro or Google slides tools were a fine choice to accomplish the procedure (Lee, 2021). Envisioning the procedure, participants had to group the 76 countries under their mental model's classification. Probable criteria would be that of spatial, score or economic criteria, which have already been applied. Extra criteria would lead to addition of extra columns or modification of existing column's visualization in the interactive country list. The visualization of the interactive global map wouldn't be affected, since the spatial criterion is mainly applied. Besides, the moderator wouldn't affect statistical analysis but only explanatory (Righi et al., 2013). So far as visualization interferes with the Design of a website, in addition to the present overwhelming amount of information, there was a challenge to test whether the Design of the website worked.

## Methodology

Previous research referring to Card sorting evaluation of spatial visualization websites, verified that Moderated Card Sorting had a significant importance in the correct organization and obtaining important comments during the classification (Nielsen & Chan 2024; Paul, 2008; Spencer, 2009:101; Tankala & Sherwin, 2024; Rugg & McGeorge, 2005). Lloyd et al. proceeded to participant’s sketching their mental model which appeared very effective and meaningful (Lloyd et al., 2008). Roth et al. tested the classification of map symbols into groups and their correct description. Participants were asked to register their verbal comments in relevant comments field (Roth et al, 2010). It is highly recommended to apply a tree test before a Card Sorting evaluation in order to identify problematic nodes (NNgroup, 2019; Sauro, 2012; Userlytics, 2024). According to usability experts, a concept such as visualization or sustainability need firm research before scenarios definition (Spencer, 2009; Tankala & Sherwin, 2024; Usability gov, 2022; Rugg & McGeorge, 2005). Hypertext registration was used in order to check existing terminology of hierarchy (Urh et al, 2014).

Making use of the above, the evaluation was carried out in two parts: Tree test and Card sorting, starting with an investigation of architectural structure and user’s notions about the website. Card Sorting was combined with qualitative and quantitative methods, so the evaluation workflow was described as follows:

Hypertext registration - to investigate the workflow. Website accomplishes two tasks: one of each country’s score (performance) and another of two countries' score comparison through all indexes, pillars and indice (comparison). The workflow is diagrammatically depicted on fig.2. It’s obvious that the workflow does not have the shape of a tree but that of two connected pyramids, i.e.: a cone, while the visitor has the opportunity to find information via several direct manipulation tools plus complicated routes.



**Figure 2:** Hypertext registration of “The Green Future Index 2021”, for the evaluation. (January 2023)

2- User’s Cognitive walkthrough Thinking-Aloud - to define scenarios. Five computer experts were observed under the “Thinking-Aloud” method to spot the most representative countries to evaluate by tree test (Nielsen, 2012). Finally, for the performance task, Australia was chosen thanks to the separate huge spot on the opposite side of the map. Participants had to choose between list or map and what direct manipulation tool in order to appear Australia’s Data Table. France and Italy were the two countries to combine performance for their neighborhooding spots, tempting users to click the map rather than the list to find the comparison. Participants were pleased to ask about well-known countries while comments started to reveal the problematic nodes. The two scenarios for the tree test were formed after several tool specifications (Optimal workshop, Usertest) as follows:

***Task 1 - Performance:*** *You are at the homepage of our website. You want to have the overall ranking performance of Australia. Where will you find it?*

***Task 2 - Comparison:*** *You are at the homepage of our website. You want to have the overall ranking performance of France and compare it with Italy's. Where will you find it?*

After the pre-research, an open invitation via Google forms, was forwarded to student association, where 10 postgraduate students of Graphic Arts and Multimedia accepted to participate in the Sorting, urging the sorting to evaluate visualization via design evaluation (fig.3). Usability experts clearly state that a limit of 50 participants is highly recommended to investigate a concept such as visualization, either for tree test or the card sorting (Spencer, 2009:76; Tullis & Wood, 2004). The amount of 10 participants characterized the research as a pilot one, which led to Optimal Workshop usability platform for: Tree test and card sorting in free open source has a limit of 10 participants, two tasks for the tree test plus 10 participants, 20 cards, unlimited categories for open or hybrid sorting. Both tests analyze data results with linked visualizations. Additionally, data and data analysis remains for use in the Optimal Workshop platform for a long time.

Card Sorting evaluation was conducted, in two (2) weeks (April 2023, 10-25), as follows:

A) Tree test: introduction to the website, short time interaction of the participants, running the tree test individually with the selected tool. A link of the tool tree test and a demo of the tree test procedure was separately forwarded.

B) After extensive interaction and individual investigation, a SUS for quantitative data gathering and Card Sorting was carried out individually. A Card Sorting tool and a google form link was separately forwarded.

Visual Art teacher 1
Visual Art teacher 2
Visual Art student 3
Graphic Art professional
Photographer professional
Technology professor 1
Technology professor 2
Computer Science teacher 1
Computer Science teacher 2
Computer Science teacher 3

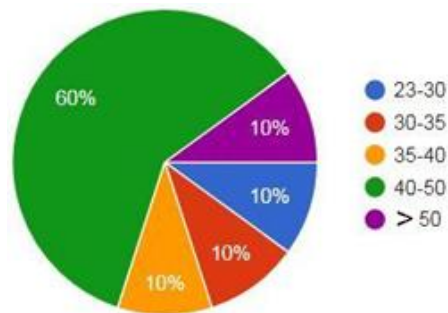


Figure 3: Demographic data of statistical sample.

### Tree test is hard to evaluated big data visualizations

In order to settle the tree test, appraised a demand to register the most possible routes of hypertext for the scenarios. Furthermore, pilot tests were conducted with chaotic results without similarity to in-vivo interaction with the website. In addition, the real interaction looked less chaotic and more specific. In order to test the tree test, it was decided to contact two tree tests, under the same scenarios. The first one in-vivo with real interaction with the website under data recording. The following tree test by the tool. Both tree tests were conducted remotely via the Optimal workshop platform, moderately via WebEx. Moderator explained the scenarios verbally in Greek, observed and recorded the procedure. Participants proceed separately to interact with tree test tool or the website. Data record of the first tree test was carefully registered in the platform of Optimal Workshop, with added nodes the participants had visited (i.e.: Russia) (fig. 4, fig.20). Both tree tests data were analyzed with linked visualizations which had to be compared (fig.17). As soon as the tree test finished, verbal comments pointed out the problematic nodes (fig. 21). Tree test proved to be a fine preparation for the next phase of evaluation workflow: the Card sorting. The main scope of the two tree tests was the participants to cope with the website and form their mental models as designers and user' experience. The whole procedure plus the origin of the participants as postgraduate students of Graphic Arts and Multimedia, concluded that the Cards could represent the interfaces of the pages, while the categories the design situ.

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Overall Ranking (GFI21)								
	↓ View Data							
		dataset						
			overall					
	↓ Download Report							
		pdf report						
	GEO MAP							
		scroll GEO MAP						
			zoom out GEO MAP					
			zoom in GEO MAP					
		India shape						
			Indonesia shape					
				Australia shape				
		South Africa shape						
			click+drag					
				Australia shape				
			delete South Africa data table					
				GEO MAP start point				
		France shape						
			data table					
				breakdown				
					data details			
				delete France data table				
					GEO MAP start point			
				mouse over				
					GEO MAP Italy shape			
					scroll country list			
						Iceland		

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						Denmark		
						Norway		
						Ireland		
						Finland		
						Costa Rica		
						New Zealand		
						Belgium		
						Nedelands		
						Germany		
						Sweden		
						Luxemburg		
						Canada		
						Austria		
						Singapore		
						United Kingdom		
						Spain		
						Switzerland		
						Uruguay		
						India		
						Italy		
						Kenya		
						Chile		
						Colombia		
						Morocco		
						Ethiopia		
						Czech Republic		
						Thailand		
						Portugal		

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						South Korea		
						Brazil		
						Kazakhstan		
						Poland		
						Australia		
						Mexico		
						Greece		
						Israel		
						Hungary		
				search/type				
					France			
					Italy			
					France, Italy			
		click +drag						
			click +drag					
				Australia shape				
			Kenya					
				click+drag				
					Australia shape			
		Italy shape						
		Russia shape						
			country list					
				search				
					France			
	country list							
		scroll country list						
			Iceland					
			Sweden					

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			Luxembourg					
			Canada					
			Austria					
			Singapore					
			United Kingdom					
			Spain					
			Switzerland					
			Uruguay					
			India					
			Italy					
			Kenya					
			Chile					
			Colombia					
			Morocco					
			Ethiopia					
			Czech Republic					
			Thailand					
			Portugal					
			South Korea					
			Brazil					
			Kazakhstan					
			Poland					
			Australia					
			Mexico					
			Greece					
			Israel					
			Hungary					
			United States					



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			Cameroon					
			United Arab Emirates					
			Philippines					
			Bulgaria					
			China					
			Taiwan					
			South Africa					
			Romania					
			Vietnam					
			Slovakia					
			Zambia					
			Angola					
			Nigeria					
			Uganda					
			Dominican Republic					
			Malaysia					
			Indonesia					
			Egypt					
			Argentina					
			Japan					
			Saudi Arabia					
			Ecuador					
			Ukraine					
			Hong Kong, China					
			Kuwait					
			Peru					
			Pakistan					
			Turkey					

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			Bangladesh				
			Guatemala				
			Ghana				
			Algeria				
			Russia				
			Iran				
			Paraguay				
			Qatar				
			Denmark				
			Norway				
			France				
				data table			
					breakdown		
						data details	
					delete France data table		
						GEO MAP start point	
					mouse over		
						scroll country list	
						Iceland	
						Sweden	
						Luxembourg	
						Canada	
						Austria	
						Singapore	
						United Kingdom	
						Spain	
						Switzerland	
						Uruguay	

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							India	
							Italy	
							Kenya	
							Chile	
							Colombia	
							Morocco	
							Ethiopia	
							Czech Republic	
							Thailand	
							Portugal	
							South Korea	
							Brazil	
							Kazakhstan	
							Poland	
							Australia	
							Mexico	
							Greece	
							Israel	
							Hungary	
							United States	
							Cameroon	
							United Arab Emirates	
							Philippines	
							Bulgaria	
							China	
							Taiwan	
							South Africa	
							Romania	

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							Vietnam	
							Slovakia	
							Zambia	
							Angola	
							Nigeria	
							Uganda	
							Dominican Republic	
							Malaysia	
							Indonesia	
							Egypt	
							Argentina	
							Japan	
							Saudi Arabia	
							Ecuador	
							Ukraine	
							Hong Kong, China	
							Kuwait	
							Peru	
							Pakistan	
							Turkey	
							Bangladesh	
							Guatemala	
							Ghana	
							Algeria	
							Russia	
							Iran	
							Paraguay	
							Qatar	

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						GEO MAP		
							Italy shape	
					search / type			
						France		
						Italy		
						France, Italy		
			Ireland					
			Finland					
			Costa Rica					
			New Zealand					
			Belgium					
			Nederlands					
			Germany					
		search / type						
			country list					
				Australia				
				France				
					data table			
						breakdown		
						search / type		
							Italy	
							France	
							France, Italy	
						GEO MAP Italy shape		
						delete France data table		
				Italy				
				France, Italy				
			compare					

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		Filters					
			Region				
				East Asia, Pacific			
					New Zealand		
					Singapore		
					Thailand		
					South Korea		
					Australia		
					Philippines		
					China		
					Taiwan		
					Vietnam		
					Malaysia		
					Indonesia		
					Japan		
					Hong Kong		
				Europe, Central Asia			
					Iceland		
					Denmark		
					Norway		
					France		
						data table	
							breakdown
							delete data table
							Italy shape
							scroll country list
							Iceland
							Denmark

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							Norway
							Ireland
							Finland
							Belgium
							Netherlands
							Germany
							Sweden
							Luxemburg
							Austria
							United Kingdom
							Spain
							Switzerland
							Italy
							Czech Republic
							Portugal
							Kazahstan
							Poland
							Greece
							Hugnary
							Romania
							Bulgaria
							Slovakia
							Ukraine
							Turkey
							Russia
						search / type	
							Italy
							France

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								Australia
								France, Italy
								Ireland
								Finland
								Belgium
								Netherlands
								Germany
								Sweden
								Luxemburg
								Austria
								United Kingdom
								Spain
								Switzerland
								Italy
								Czech Republic
								Portugal
								Kazakhstan
								Poland
								Greece
								Hungary
								Bulgaria
								Romania
								Slovakia
								Ukraine
								Turkey
								Russia
		Rank						



---

			change order 1-76 or 76-1					
		Score						
			change order 1-76 or 76-1					

**Figure 4:** In-vivo Tree test - 9 hierarchy levels - with the addition of the unexpected nodes of Russia, Kenya and Italy in red (.xls).

## **The Card Sorting - the timing**

The procedure of tree test lasted a week. Following, each participant had a week to personally, at his own will, interact with the website to form their personal opinion and mental model about the usability and visualization of the latter. The tree test closed, so participants were invited to run the SUS and Card Sorting. Sorting conducted individually within the 45 minutes time limit of WebEx free tool. The participants had to sort a pill of 20 digital cards representing the interfaces of one page of the Green Future Index 2021 website, such as:

1.GEO MAP, 2.COUNTRY LIST, 3.FILTERS/CRITERIA FOR COUNTRY LIST, 4.SEARCH, 5.COMPARE, 6.OVERALL RANKING, 7.GREEN SOCIETY, 8.CARBON EMISSION, 9.ENERGY TRANSITION, 10.CLEAN INNOVATION, 11.CLIMATE POLICY, 12.SPONSORS, 13.ABOUT INDEX - HIGHLIGHTS OF INDEX, 14.ABOUT - CONTACT WITH - ADVERTISE WITH MIT TECH.REVIEW, 15.FB-IN-INSTAGRAM-TWITTER, 16.DOWNLOAD REPORT, 17.VIEW DATA, 18.DATA TABLE / COMPARE DATA TABLE, 19.TITLE Description, 20.SUBTITLE Description.

They had to pill the cards into categories under the situ name. A hybrid sorting was conducted, thus categories under the name of RIGHT, LEFT, TOP MENU, LEAVE IT AS IT IS, NOT IMPORTANT, CENTER guided the participants. The moderator explained each time the procedure that the categories are the situ of the interfaces / cards. Verbal comments were registered and participants were encouraged to name the categories however they wanted without guidance. In order to evaluate the color of the indice and the pillars plus the color and the graphic manipulation of the problematic nodes, the tool's following questionnaire was adjusted to a 12 standard multiple choice of basic and complementary colors as shown in fig.5. The multiple choices were: RED, GREEN, BLUE, MAGENTA, YELLOW, CYAN, GRAY, WHITE, LIGHT, DARK, BOLD, FRAMED, HIGHLIGHTED / BLENDED plus a final open question for further suggestions. The questions referred to the problematic nodes, pillars, indice as follows:

***What color or graphic approach would you prefer for: 1. Overall Ranking (The Green Future Index), 2. Carbon Emission, 3. Energy Transition, 4. Green Society, 5. Clean Innovation, 6. Climate Policy, 7. Search, 8. Compare, 9. Data Table / Compare Data Table, 10. Title / Subtitle text, 11. Filters / Criteria.***

Questionnaire data was analyzed by the tool. Sorting Data were explanatory and statistically analyzed with connected visualizations.

Question 1 of 12

\* Με ποιο χρώμα ή άλλη γραφιστική επιλογή θα θέλατε να ξεκινάει ο διαδικτυακός τόπος THE GREEN FUTURE INDEX MIT TECHNOLOGY REVIEW INSIGHTS;

1.RED

2.GREEN

3.BLUE

4.CYAN

5.MAGENTA

6.YELLOW

7.WHITE

8.GRAY

9.LIGHT

10.DARK

11.BOLD

12.FRAME

13.HIGHLIGHT / BLENDING OPTIONS

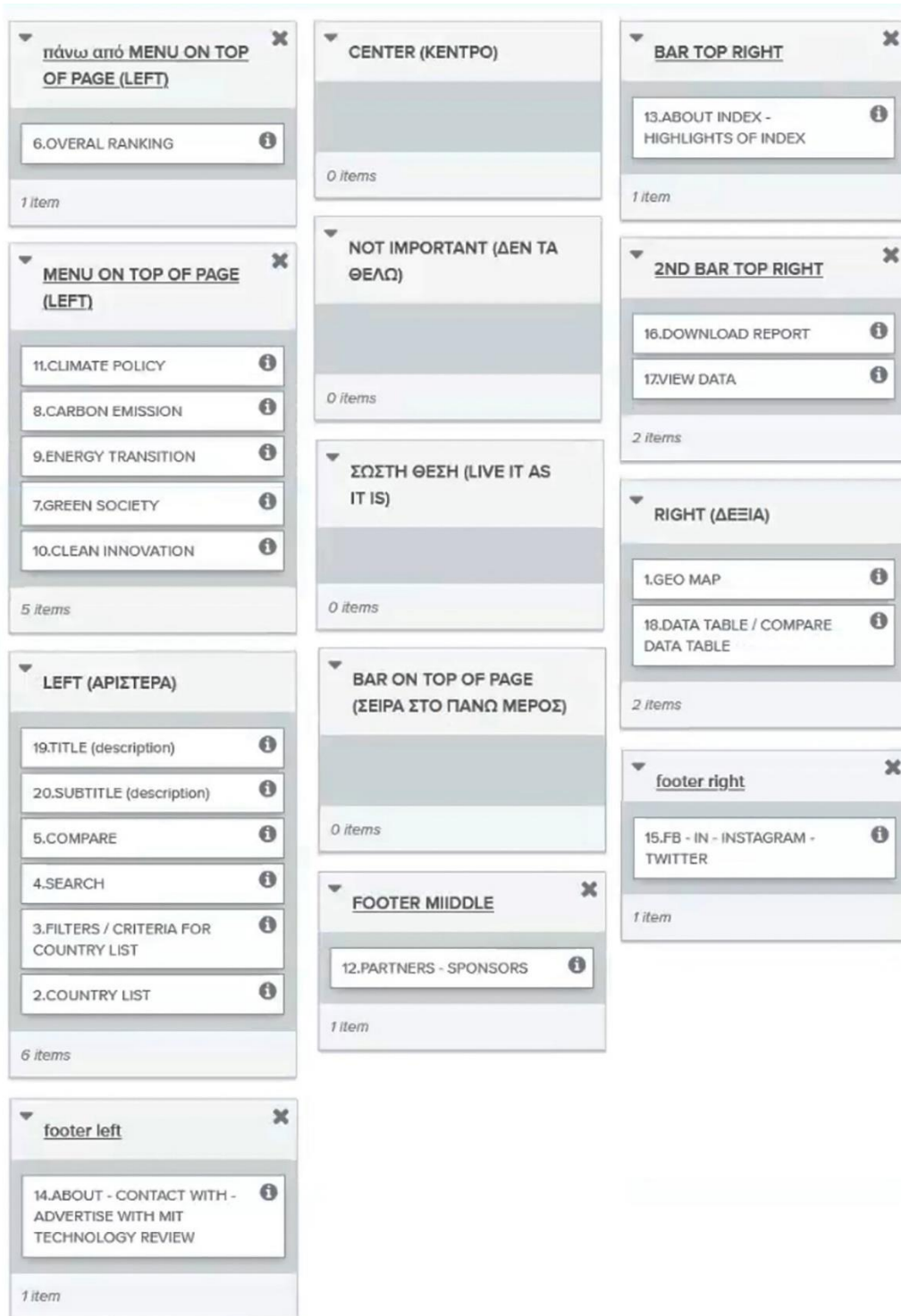
Other

Continue

**Figure 5:** Screen from the Questionnaire about Graphics (in Greek).

## Results: Mental models and homogenization

Through the sorting procedure, participants had the opportunity to pill the interfaces - cards into categories under the situ name, i.e.: FOOTER RIGHT, FOOTER CENTER, CATEGORY MENU, CENTER etc. Drag and drop procedure enabled the participants to place their categories to their physical position in order to visualize the sorting digital table in spatial mode, i.e.: to drag the category under the name RIGHT to the right side of the table, the category named FOOTER to the bottom etc. A participant's effort to visualize his mental model is depicted in fig.6. Additionally, participants freely created 42 situ - categories which had to be homogenized. Due to the small number of participants, moderator decided to sketch the mental models of participants - inspired by LLoyd's et al, making use of all the relevant data of sorting, questionnaire and participants comments (Lloyd et al., 2008) (fig.7). Few participants hesitate about the left or right position of the country list or map which led to multiple overwhelming mental models. The classification of interfaces-card among each situ, was of high importance, so had to be determined each time. The moderator had to verify whether, i.e.: in situ CATEGORY TOP MENU, which was prevailing among the generated categories, how the participants preferred the order of indice and pillars. 50% of the participants placed CLIMATE POLICY pillar next to GREEN FUTURE INDEX, in order to justify the 40% weighting.



**Figure 6:** Visualization of a participant's Mental model on the tool's screen

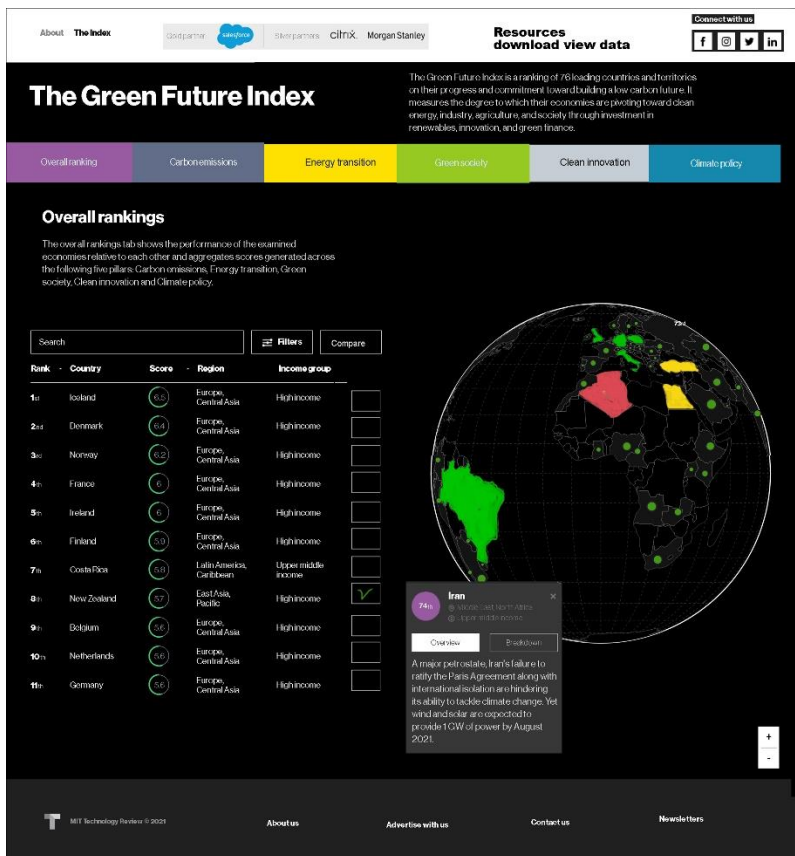
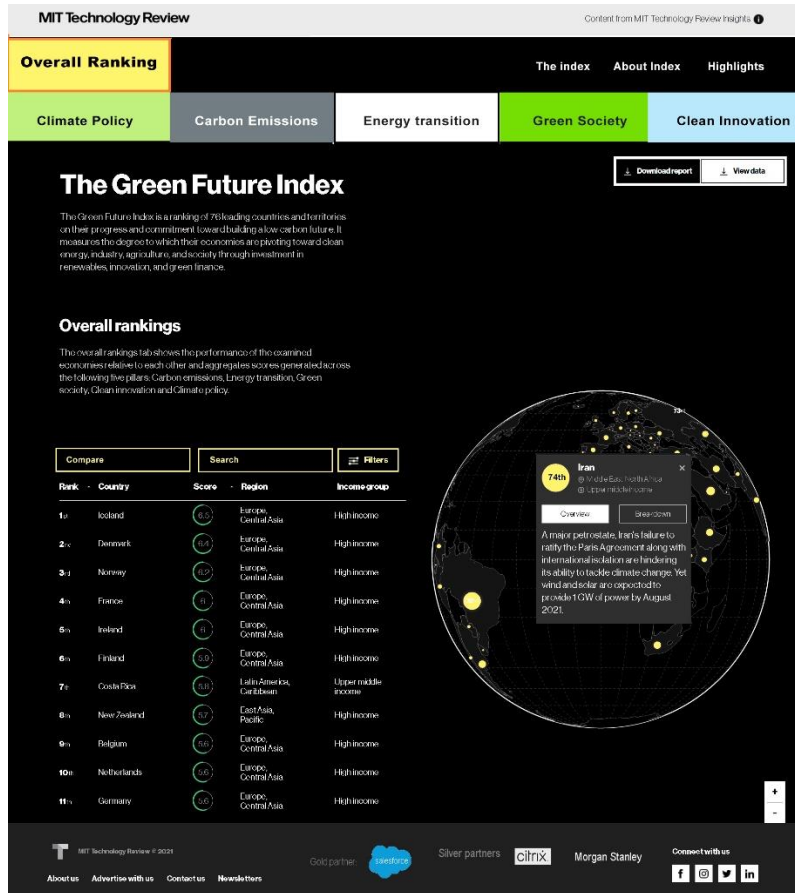


Figure 7: Visualizations of participant’s mental models via pixel editing.

After consideration the 42 categories minimized to 18, thus 16 while two were NOT IMPORTANT and NOT HOMOGENIZED (fig.8). Labeling of the categories was in Greek but homogenized categories in English. What is well noted about the primary names of the categories - category’s name in red (fig.8) - is the necessity to check page code and programming, i.e.: category name “be able to move via mouse”, “always on sight top of page”, “hover” etc.

UNSTANDARDIZED CATEGORY NAME	UNIQUE CARDS	STANDARDIZED CATEGORY NAME	UNSTANDARDIZED CATEGORY NAME	UNIQUE CARDS	STANDARDIZED CATEGORY NAME		
ΠΙΟ ΔΕΞΙΑ ΕΚΕΙ ΠΟΥ ΕΙΝΑΙ	1	ABOUT INDEX PLACE	HOVER BAR ON TOP	1	HOVER ON CATEGORY MENU		
ΕΚΕΙ ΠΟΥ ΕΙΝΑΙ, ΠΙΟ ΚΕΝΤΡΟ	1	ABOVE LIST	ΣΩΣΤΗ ΘΕΣΗ	20	LEAVE IT AS IT IS		
ΠΑΝΩ ΑΠΟ ΤΗ ΛΙΣΤΑ	3		LEFT	16	LEFT		
BAR ON TOP OF PAGE (ΣΕΙΡΑ ΣΤΟ ΠΑΝΩ ΜΕΡΟΣ)	7		RIGHT	6	RIGHT		
CENTER	8	CENTER TO PAGE	MENU ON TOP OF PAGE(LEFT)	6	PORTRAIT CATEGORY MENU		
ΚΕΝΤΡΙΚΑ ΣΤΟΝ ΚΕΝΟ ΧΩΡΟ ΑΝΑΜΕΣΑ ΣΤΗ ΛΙΣΤΑ ΚΑΙ ΣΤΟ ΤΕΛΟΣ ΟΘΟΝΗΣ - ΚΕΝΤΡΑΡΙΣΜΕΝΟ ΜΕ ΤΗ ΓΗ	1	CENTER ALWAYS	ΠΑΝΩ ΑΠΟ ΜΕΝΟΥ ON TOP OF PAGE (LEFT)	1	LEFT ABOVE CATEGORY MENU		
ΜΕΤΑΞΥ ΑΡΙΣΤΕΡΗΣ ΛΙΣΤΑΣ ΚΑΙ ΧΑΡΤΗ			2ND BAR TOP RIGHT	2	RIGHT UNDER CATEGORY		
ΝΑ ΒΓΑΙΝΕΙ ΔΙΠΛΑ ΣΤΟ ΚΟΥΜΠΙ COMPARE			ΠΑΝΩ ΑΠΟ ΤΗΝ BAR ON TOP OF PAGE	6	STABLE MENU		
ΘΕΛΩ ΝΑ ΤΟ ΜΕΤΑΚΙΝΩ ΟΠΟΥ ΜΕ ΒΟΛΕΥΕΙ			ΚΕΝΤΡΙΚΟ ΜΕΝΟΥ (ΜΕΝΟΥ ΒΑΡ)				
ΑΡΙΣΤΕΡΑ ΑΠΟ ΤΗ ΛΙΣΤΑ ΠΑΝΤΑ ΣΤΟ ΚΕΝΤΡΟ ΤΗΣ ΣΕΛΙΔΑΣ			RESOURCES				
ΠΑΝΩ ΚΕΝΤΡΟ ΣΕ ΚΑΘΕ ΣΕΛΙΔΑ	BAR TOP RIGHT						
ΚΑΤΩ ΔΕΞΙΑ	6	FOOTER	ΣΤΑΘΕΡΑ ΣΤΟ ΠΑΝΩ ΜΕΡΟΣ	3	UNDER CATEGORY MENU		
ΚΑΤΩ ΜΠΑΡΑ			ΣΤΑΘΕΡΑ ΣΤΟ ΠΑΝΩ ΜΕΡΟΣ ΔΕΞΙΑ ΚΑΤΩ ΑΠΟ ΤΟ ABOUT				
ΜΠΑΡΑ ΣΤΟ ΚΑΤΩ ΜΕΡΟΣ ΤΗΣ ΣΕΛΙΔΑΣ			ΣΤΑΘΕΡΗ ΜΠΑΡΑ ΠΑΝΩ ΠΑΝΩ				
FOOTER RIGHT			ΚΑΤΩ ΑΠΟ ΤΗΝ BAR ON TOP OF PAGE	3	NOT IMPORTANT		
FOOTER LEFT			ΑΚΡΙΒΩΣ ΚΑΤΩ ΑΠΟ ΤΗΝ ΜΠΑΡΑ, ΣΤΗ ΣΕΙΡΑ ΑΠΟ ΑΡΙΣΤΕΡΑ ΠΡΟΣ ΤΑ ΔΕΞΙΑ				
FOOTER MIDDLE			NOT IMPORTANT	3			
FOOTER ΣΕ ΤΡΕΙΣ ΣΤΗΛΕΣ			<b>UNSTANDARDIZED</b>				
ΚΑΤΩ ΚΕΝΤΡΟ					ΟΠΩΣ ΕΙΝΑΙ ΑΛΛΑ ΣΕ ΚΑΘΕ ΠΕΡΙΠΤΩΣΗ ΝΑ ΚΙΝΟΥΝΤΑΙ ΤΟ ΕΝΑ ΔΙΠΛΑ ΣΤΟ ΑΛΛΟ ΚΑΙ ΟΧΙ ΑΝΕΞΑΡΤΗΤΑ ΚΑΘΩΣ ΣΧΡΟΛΑΡΕΙ Η ΣΕΛΙΔΑ	2	
ΚΑΤΩ ΑΠΟ ΤΗ ΚΑΤΩ ΜΠΑΡΑ ΜΕΣΗ					ΣΤΗ ΛΙΣΤΑ ΠΑΝΩ ΣΤΗΝ ΕΠΙΛΟΓΗ ΤΗΣ ΧΩΡΑΣ ΜΕΤΑ ΤΟ ΟΝΟΜΑ ΤΗΣ ΧΩΡΑΣ	1	
					ΤΕΛΕΥΤΑΙΑ ΣΤΗΛΗ ΔΙΠΛΑ ΑΠΟ ΤΟ INCOME GROUP ΜΕ ΔΥΝΑΤΟΤΗΤΑ CHECK ΠΑΡΑΠΑΝΩ ΑΠΟ ΔΥΟ ΧΩΡΕΣ	1	

Figure 8: Homogenization matrix.

### Results: Explanatory and Statistic analysis

Table of arithmetical correlation in fig.9, links cards with homogenized categories, i.e.: interfaces with design situ (fig. 10). Color has been used to improve visual ability of the results (Lamantia, 2003). Results of the “LEAVE IT AS IT IS” category had to be added to results that verify the present design situ. After a controversy, it is clear that participants verified the present designing of the website, despite two crucial points. One about the situ of the data table, where 60% of the participants preferred to appear in the middle of the screen either to be mouse movable. The second finding was the overwhelming 70% of the participants, who were annoyed by the sponsors design situ, thus proposed to diminish their presence to the footer either center or right position.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1				1					2	2			4					1
2				1					2	3			2				1	1
3		1		1					3	3			2					
4		1		1					3	2			2			1		
5		1		1					2	2			1			1		2
6			5						3	1	1							
7			5						3	1			1					
8			5						3	1			1					
9			5						3	1			1					
10			5						3	1			1					
11			5						3	1			1					
12							7		2						1			
13	2						1		3						4			
14							4		5								1	
15							5		3						1		1	
16							1		4	1				1	3			
17			1				1		3	1				1	3			
18				1	5				2	1			1					
19				2					3	2					3			
20				1		1		1	3	2							2	

Figure 9: Matrix of Arithmetical Correlation (Altered Standardization Grid).

(<https://app.optimalworkshop.com/a/5ulk1001/optimalsort/results/f5b04973-d18e-4741-8687-de29ac9a6a7d#/t/results/analysisTools/standardisationGrid>)

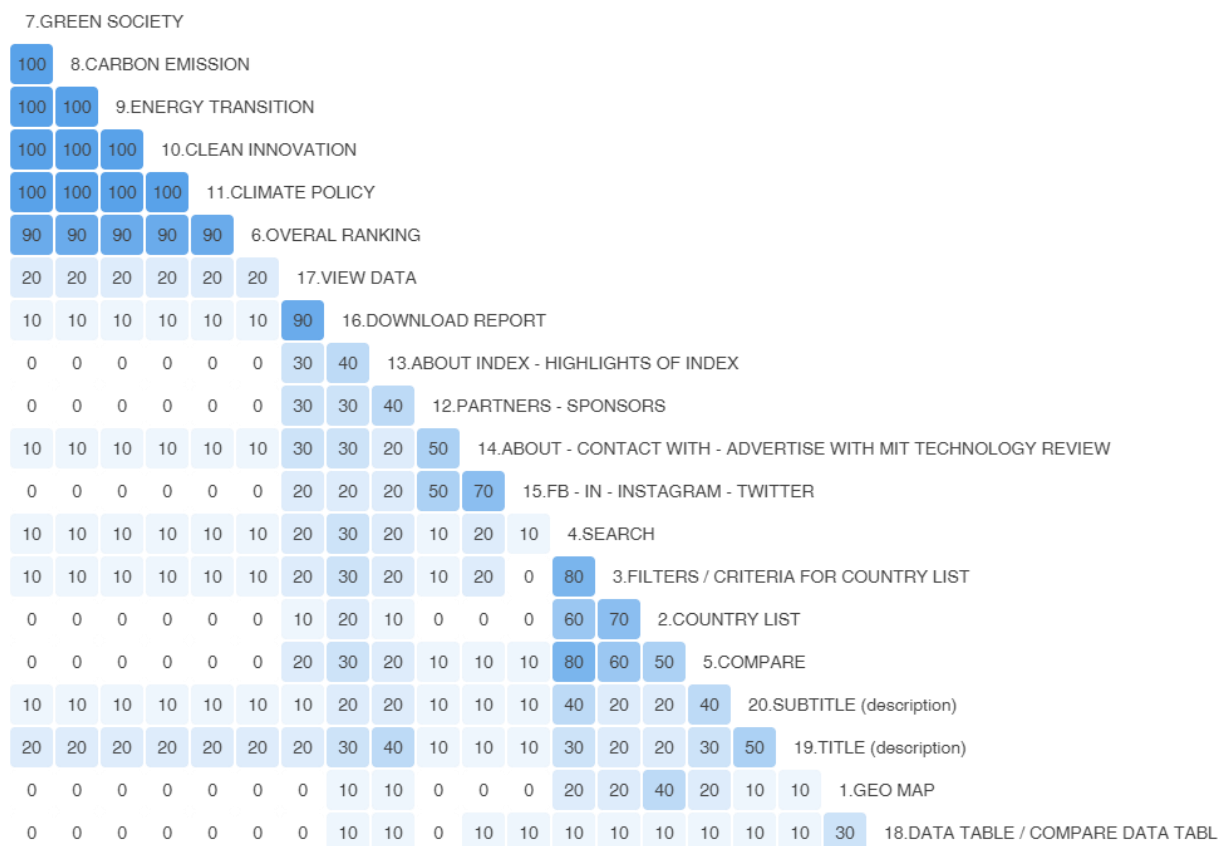
CARDS	STANDARDIZED CATEGORIES
1.GEO MAP	1. ABOUT INDEX PLACE
2.COUNTRY LIST	2.ABOVE LIST
3.FILTERS / CRITERIA FOR COUNTRY	3.CATEGORY MENU
4.SEARCH	4.CENTER (KENTPO)
5.COMPARE	5.CENTER ALWAYS
6.OVERAL RANKING	6.CENTER TOP
7.GREEN SOCIETY	7.FOOTER
8.CARBON EMISSION	8.HOVER ON CATEGORY MENU
9.ENERGY TRANSITION	9.LEAVE IT AS IT IS (ΣΩΣΤΗ ΘΕΣΗ)
10.CLEAN INNOVATION	10.LEFT
11.CLIMATE POLICY	11.LEFT ABOVE CATEGORY MENU
12.PARTNERS - SPONSORS	12.PORTRAIT CATEGORY MENU
13.ABOUT INDEX - HIGHLIGHTS OF	13.RIGHT
14.ABOUT - CONTACT WITH - ADVERTISE	14.RIGHT UNDER CATEGORY MENU
15.FB-IN-INSTAGRAM-TWITTER	15.STABLE MENU
16.DOWNLOAD REPORT	16.UNDER CATEGORY MENU
17.VIEW DATA	17.NOT IMPORTANT
18.DATA TABLE / COMPARE DATA	18.NOT STANDARDIZED
19.TITLE Description	
20.SUBTITLE Description	

Figure 10: Cards and standardized categories

Explanatory analysis results were verified by statistical analysis. Key point is the differentiation of data approach analysis: Explanatory analysis copes with the numerical appearance of interfaces in several situ while statistical analysis determines whether interfaces appear together

in groups to relevant design situ. Optimal workshop platform offered the opportunity to test visualization of interface-situ combination:

**Similarity matrix** - represents by percentage how interfaces overlapped in situ: 100% pillars and indice found to have a presence together. COUNTRY LIST overlapped 80% with SEARCH, COMPARE and FILTERS interfaces, Search with COMPARE 50-80%, SOCIAL MEDIA - ABOUT MIT - SPONSORS 50-70%. On the contrary, GEOMAP had a low percentage in combination other than that with DATA TABLE in situ appearance on top of the map 30% (same as present). VIEW DATA overlapped with DOWNLOAD REPORT up to 90%. Similarity matrix has no reference to categories-situ.



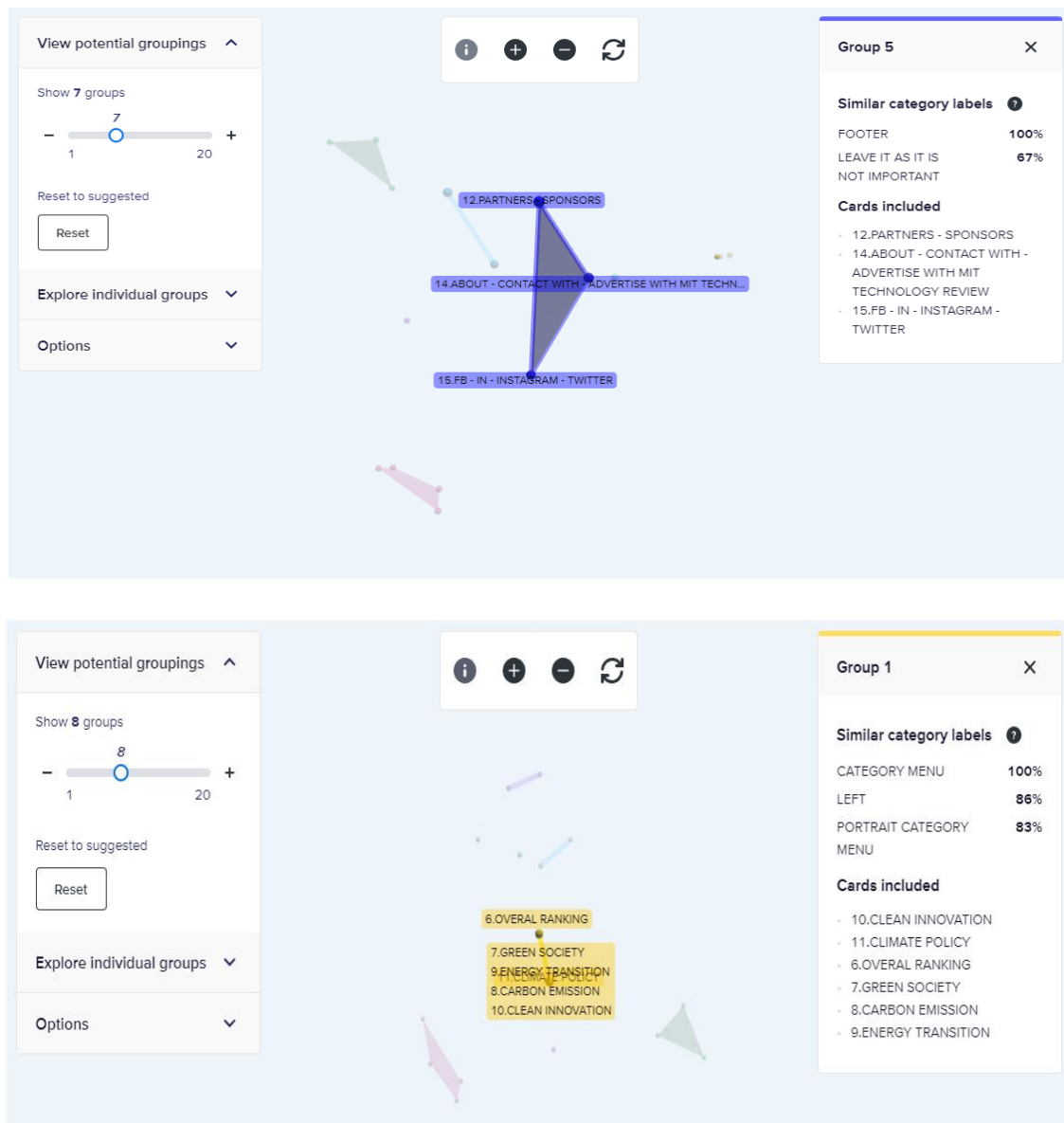
**Figure 11: Similarity Matrix.**

(<https://app.optimalworkshop.com/a/5ulk10o1/optimalsort/results/f5b04973-d18e-4741-8687-de29ac9a6a7d#/t/results/analysisTools/similarityMatrix>)

**3D cluster view**, had a different aspect of the interface- situ combination. Clusters represent the approximate number of situ a designer bears in mind to implement, while each cluster recites with a percentage, the possible combination of an interface to situ. Thus, for 7 different clusters-situ, a group of ABOUT MIT, SOCIAL MEDIA and SPONSORS interfaces seems to preferably appear to 100% in FOOTER, or 67% in LEAVE IT AS IT IS category (fig.12). 3D cluster view seems to offer an interesting exploration of design situ-interfaces linkage.



3D cluster view 

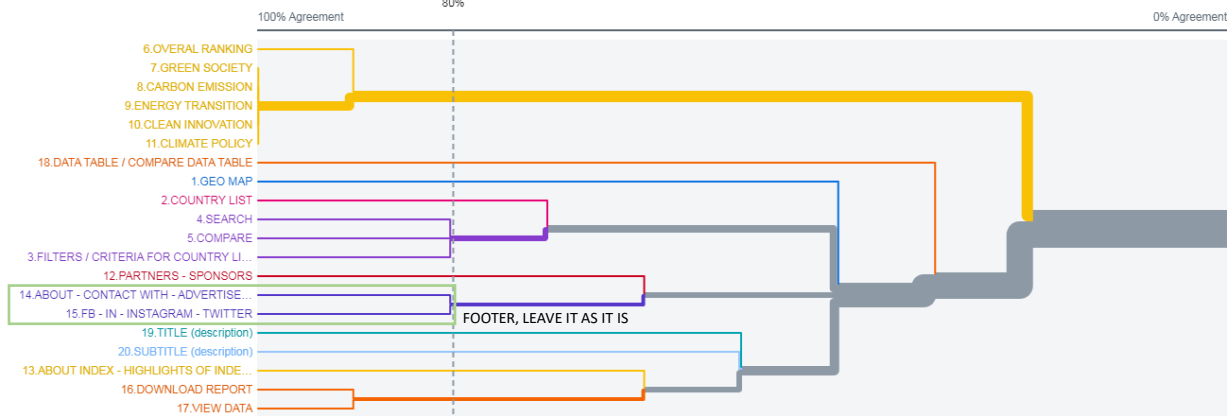


**Figure12:** 3D Cluster view.

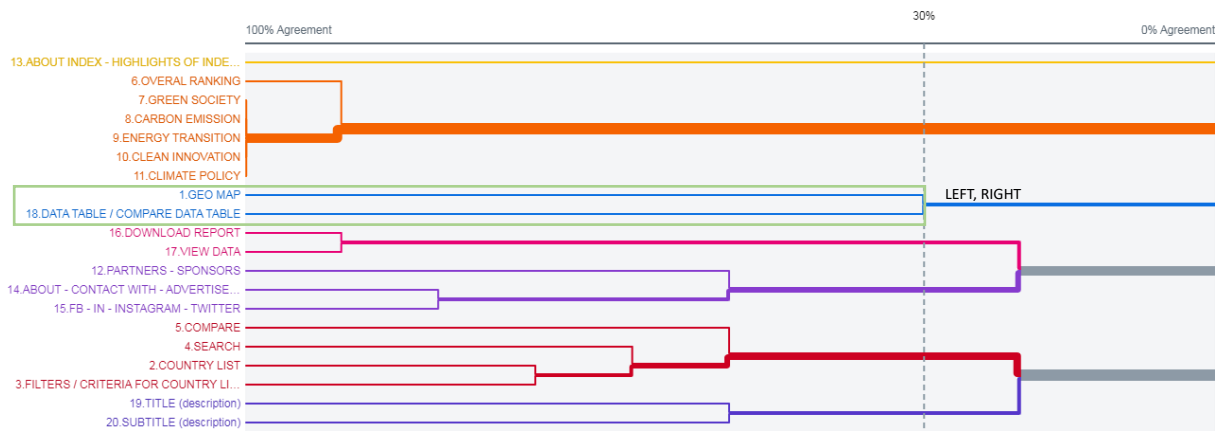
(<https://app.optimalworkshop.com/a/5ulk10o1/optimalsort/results/f5b04973-d18e-4741-8687-de29ac9a6a7d#/t/results/analysisTools/clusterView>)

**Dendrograms** - were more specific than similarity matrix, as soon as reveal an opportunity to link a percentage of participants to a combination of interface - situ. Best merge method or actual agreement method offered by the tool have similarities (Laubheimer, 2021).

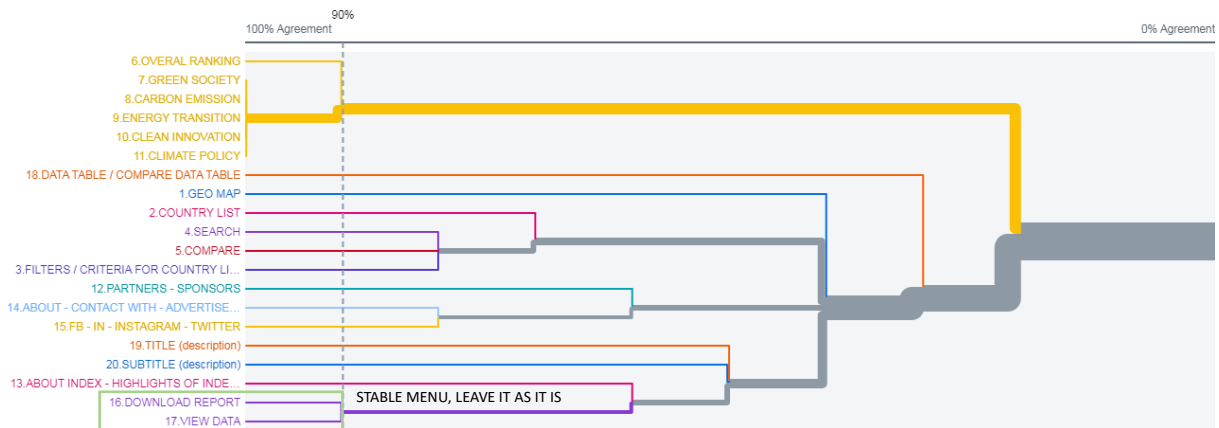
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**Best Merge.** 80% of participants verified the present situ of ABOUT MIT and SOCIAL MEDIAL.



**Actual Agreement.** 30% of participants verified the present situ of GEOMAP and DATA TABLE



**Best Merge.** 90% of the participants verified the situ of VIEW DATA and DOWNLOAD REPORT

**Figure 13:** Screens from Dendrogram Analysis.

(<https://app.optimalworkshop.com/a/5ulk10o1/optimalsort/results/f5b04973-d18e-4741-8687-de29ac9a6a7d#/t/results/analysisTools/dendrograms>)

**Results of the questionnaire: Color**

Raw data of the questionnaire were gathered in the matrix of fig14. Afterwards these were summed up to the interrelated matrix of fig.15. The preferred color either of indice and pillar/pages or graphical effects of problematic nodes: COMPARE, SEARCH and DATA-TABLE, is linked to percentage. Color has been used to visualize the relationships. It is made clear that: pillars of CARBON EMISSION, GREEN POLICY and CLEAN INNOVATION have a 90% agreement to more symbolic colors. Light gray for CARBON, light green for GREEN POLICY and light blue for CLEAN INNOVATION. ENERGY TRANSITION had a 60% and CLIMATE POLICY a 20% agreement of existing color. The GREEN FUTURE 2021 homepage color had a 40% agreement to sustainable green, though 40% accepted the existing purple stated to imply a consort of technology linked to MIT. Verbal comments pointed out that SEARCH as a problematic node had a visual flaw compared to the neighboring FILTER, as it lacked a hover command. In addition, the COMPARE interface was well hidden with a code error in emerging, with tiny letters on a dark background screen overwhelmed with information.

	GF121	CARBON EMISSION	ENERGY TRANSITION	GREEN SOCIETY	CLEAN INNOVATION	CLIMATE POLICY	SEARCH	COMPARE	DATA TABLE	TEXT	CRITERIA
RED	-	10%	20%	-	-	10%	-	-	SAME	-	-
GREEN	40%	-	10%	90%	-	20%	20%	10%	SAME	-	-
BLUE	10%	10%	20%	-	30%	30%	-	-	SAME	-	-
CYAN	20%	-	10%	-	60%	10%	-	10%		-	-
MAGENTA	10%	-	10%	-	-	10%	-	-		-	-
YELLOW	10%	20%	40%	10%	-	20%	20%	10%	LIGHTER MORE CONTRAST	-	10%
WHITE	-	-	10%	-	10%	0%	40%	40%		100%	70%
GRAY	20%	70%	10%	-	30%	20%	30%	10%		-	20%
LIGHT	50%	40%	40%	50%	50%	50%	40%	10%		-	10%
DARK	-	10%	-	-	-	10%	10%	-		-	-
BOLD	20%	-	-	-	-	-	10%	10%		-	-
FRAMED	-	-	-	-	-	-	80%	50%		-	90%
HIGH/ED	10%	10%	-	-	-	-	-	-		-	-
OTHER	40%	-	10%	10%	20%	50%	40%	60%		-	30%
	MIXTURE OF MIDDLE GRAY BLUE	MIXTURE OR LIGHT GRAY BLUE	MIXTURE OF MIDDLE TONE GRAY GREEN	MIXTURE OF LIGHT GRAY GREEN	MIXTURE OF MIDDLE TONE	MIXTURE OF MIDDLE TONE	SAME COLOR TO CATEGORY	BACKGROUND SAME COLOR TO CATEGORY	ANOIXTO ME ANTIOEΣH		GRAY BACKWARDS
	SAME PURPLE				PURPLE LIGHT	LIGHT RED	COLOR BACKWARDS	SAME COLOR TO CATEGORY	MORE CONTRAST TO BACKWARD GEOMAP		HOVER
	SAME PURPLE					PETROL	GRAY BACKWARDS	SAME	MOVE DOWN TO INCREASE VISIBILITY		
	SAME PURPLE					SAME	HOVER	BACKGROUND SAME COLOR TO CATEGORY			
						LIGHT GREEN		HOVER			

**Figure 14: Color questionnaire matrix**

(<https://app.optimalworkshop.com/a/5ulk10o1/optimalsort/results/f5b04973-d18e-4741-8687-de29ac9a6a7d#/t/results/questions>)

**COLOR: INTERRELATED TABLE**

LIGHT GREEN	90%	GREEN SOCIETY	framed	100%	search	
GRAY	90%	CO2 EMISSION		Hover - GRAY		80%
LIGHT BLUE	90%	CLEAN INNOVATION		LIGHT GREEN		20%
YELOWISH ORANGE	60%	ENERGY TRANSITION		LIGHT YELLOW		20%
LIGHT HOT BLUE	20%	CLIMATE POLICY	Green or category color	Next to country in list	compare	
LIGHT COLD BLUE	30%			Next to country out of list		
PETROL (SAME COLOR)	20%			Multiple choice from map		
LIGHT GREEN	10%			Check box		
DARK RED	10%			Link in data table		
YELOWISH ORANGE	10%	GREEN FUTURE INDEX HOMEPAGE	contrast	80%	Data table	
LIGHT GREEN	40%			center		move with mouse
LIGHT BLUE	30%					
MAGENTA VIOLET	30%					

**Figure 15:** Color visualized with percentage

**Results: SUS Scale**

According to Katsanos et al., SUS scale has a lowest average of 12 participants to justify the results (Katsanos et al., 2012). Although, the 10 participants gave a score of 52,25 % which stands far away from the average 70%, what was most important was their written comments about the usability of the website. They run the SUS questionnaire altered with an open question for their suggestions, according to their mental models as student designers. Written comments verified the verbal ones (fig.16). The original Greeks was translated into English via Google translator. It is clearly stated that most of them had a difficulty with the detection of COMPARE, furthermore their proposals to improve usability are depicted in matrix fig15.

Written comments of participants:

- Unreasonably complicated site
- Difficult to compare between countries and poor choice of colors
- Search should be more visible (for example by using the corresponding color of the menu). I would prefer the menu with different colors that suits best each category. The comparison should be between more than two countries. I cannot find the way.
- I would prefer the colors on the map to match the colors green, orange, red as used for the score, in order to get a better overall picture of what is going on.
- The list of countries should be in a different box and color to stand out from the search option.
- I would also like a Greek menu
- The categories need to be better organized (colors, layout) and be able to compare data from more than 2 countries.
- 1) Difficult or even impossible to find a way to compare, 2) Why should there be a possibility to compare more countries? 3) Weak visualization of the navigation menu, maybe different colors.
- It has problem with scrolling and the choice of colors could be better
- There is no symbolic use of the categories color, black and white is tiring for the eye.
- The search is not visible and should go somewhere on the top right. Compare should be entered in the data table as an option.

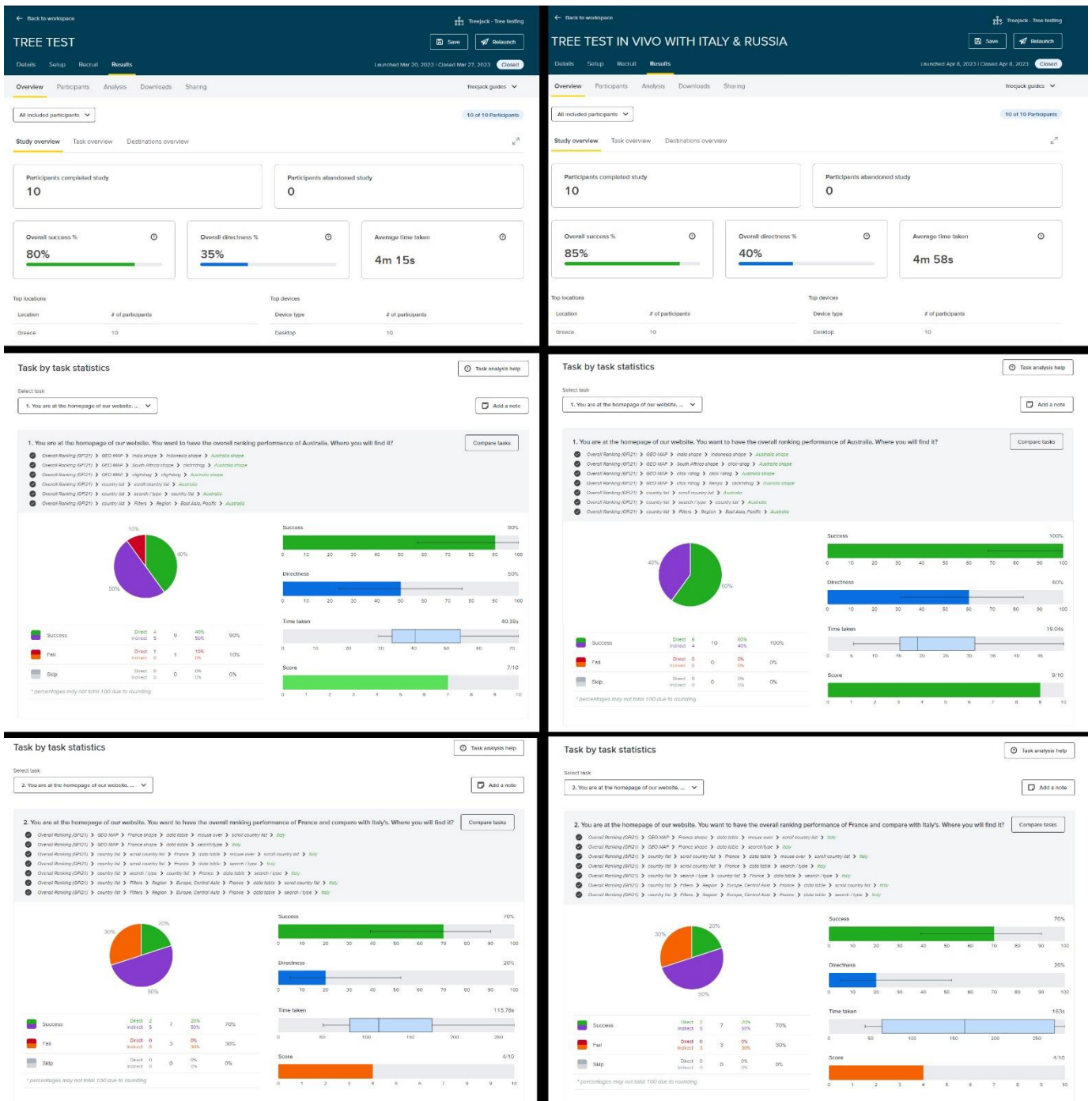
**Figure 16:** Table of the Participant's scriben comments.(

[https://docs.google.com/forms/d/11m-iYPV5bkdejZu8G8ChHXD\\_G5PCHX-Mlk-E8DuErXw/edit#responses](https://docs.google.com/forms/d/11m-iYPV5bkdejZu8G8ChHXD_G5PCHX-Mlk-E8DuErXw/edit#responses))

## **Results: Analysis with visualizations**

Study results are mostly cascading, while the workflow: HYPERTEXT - THINK-ALOUD - TREE TEST - SUS - CARD SORTING, ladders via results to the upper levels of evaluation. In the beginning, Hypertext registration pointed out the information network of country performance and comparison. Afterwards, User observation Think-Aloud method revealed the best countries to spot the problematic nodes in workflow in order to verify with the tree test.

Tree tests had a key role in participants' mental model formation in order to reveal them in the following Card Sorting. On the other hand, linked analysis of Optimal Workshop Tree test, evaluated the architectural structure of the site (fig.17). First Click was found to share between interactive spatial visualization (GEOMAP) and interactive COUNTRY LIST. The results of the two tests were relevant 40%-60% (fig 18). The lowest First Click is 30% granted to the GEOMAP interface by the tool: it is not real while participants had already run an in-vivo comparison task, so they had realized that there was no point to search for comparison under the GEOMAP branch on the tool. None of the participants' first click in-vivo included DOWNLOAD REPORT & VIEW DATA interfaces, despite their situ (20% was their first click by the tool). The in-vivo tree test needed extra nodes that had not been predicted (fig.20).



**Figure 17:** Tree Tests compared data analysis, as remain in Optimal Workshop platform. Compared results for both tasks.

<https://app.optimalworkshop.com/a/5ulk10o1/treejack/results/04cd3480-cdbe-445e-9a42-50ad3729b2af#/t/results/overview/studyOverview>

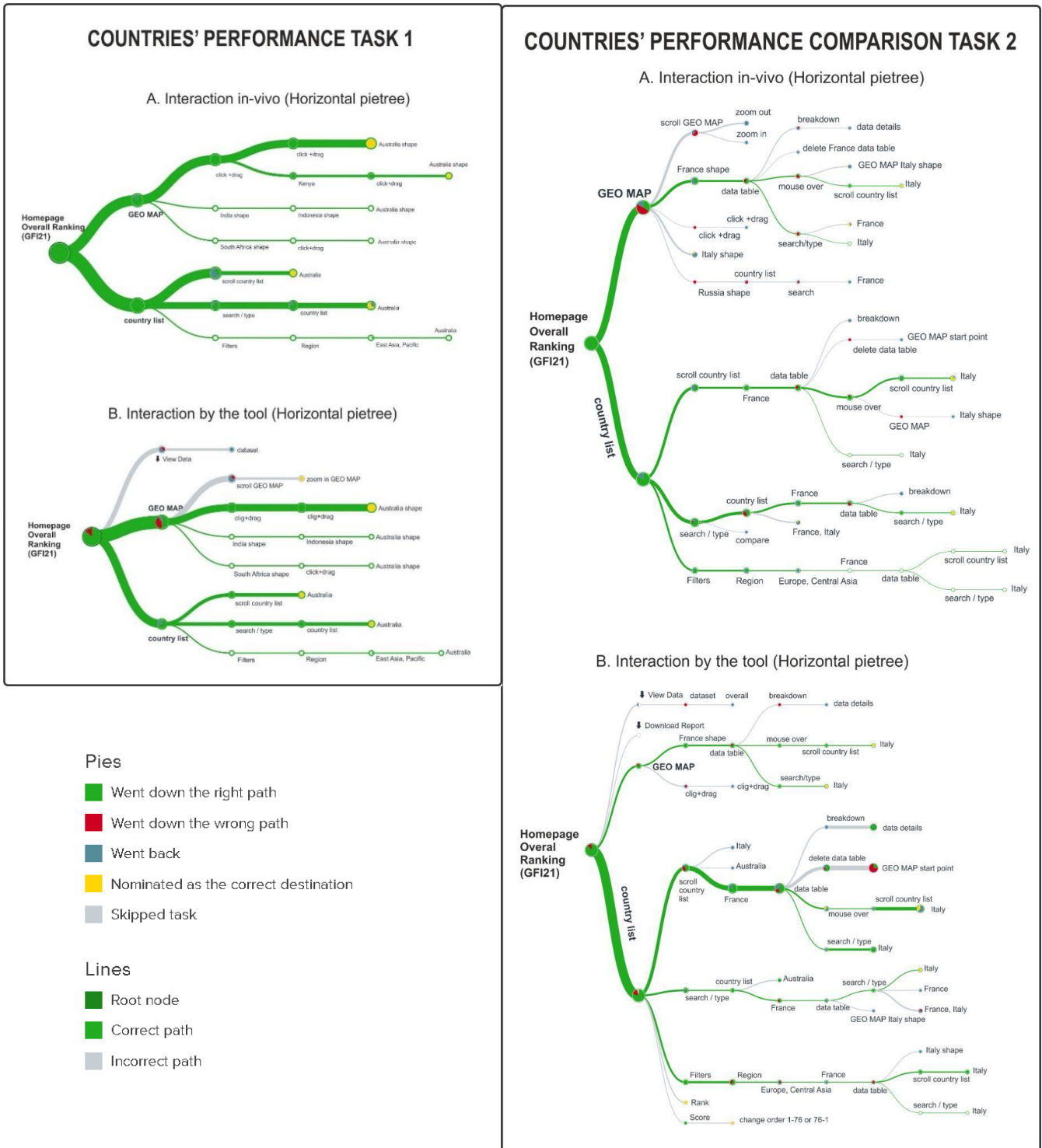
<https://app.optimalworkshop.com/a/5ulk10o1/treejack/results/f1d24ad6-b336-4bbb-bc5a-e649c4546c93#/t/results/overview/studyOverview>

First Click								
	Interaction by the tool				Interaction in-vivo			
	1st task		2nd task		1st task		2nd task	
	first	during	first	during	first	during	first	during
Download Report	-	-	-	10%	-		-	
View Data	20%	20%	-	10%	-		-	
Geo Map	40%	60%	30%	30%	40%	70%	50%	70%
Country List	40%	60%	70%	80%	60%	80%	50%	100%

**Figure 18:** First click. (<https://app.optimalworkshop.com/a/5ulk10o1/treejack/results/04cd3480-cdbe-445e-9a42-50ad3729b2af#/t/results/analysisTools/firstClick>)  
(<https://app.optimalworkshop.com/a/5ulk10o1/treejack/results/f1d24ad6-b336-4bbb-bc5a-e649c4546c93#/t/results/analysisTools/firstClick>)

Success				
	Interaction by the tool		Interaction in-vivo	
	1st task	2nd task	1st task	2nd task
Direct Success	40%	20%	60%	20%
Indirect Success	50%	50%	40%	50%
Direct Fail	10%	-	-	-
Indirect Fail	-	30%	-	30%
<b>Total success of Tree Test</b>	80% success with 35% directness		85% success with 40% directness	

**Figure 19:** Success Analysis. (<https://app.optimalworkshop.com/a/5ulk10o1/treejack/results/f1d24ad6-b336-4bbb-bc5a-e649c4546c93#/t/results/analysisTools/taskResults>)  
(<https://app.optimalworkshop.com/a/5ulk10o1/treejack/results/04cd3480-cdbe-445e-9a42-50ad3729b2af#/t/results/analysisTools/taskResults>)



**Figure 20:** The pie visualizations of the destinations (horizontal) for both tree tests.  
<https://app.optimalworkshop.com/a/5ulk10o1/treejack/results/04cd3480-cdbe-445e-9a42-50ad3729b2af#/t/results/analysisTools/pieTree>  
<https://app.optimalworkshop.com/a/5ulk10o1/treejack/results/fl1d24ad6-b336-4bbb-bc5a-e649c4546c93#/t/results/analysisTools/pieTree>



Visualizations via the pie tree of the destinations revealed the mental model way the participants used the offered tools to reach their goal. The performance task in-vivo interaction direct success destinations - after moderator's registration to Optimal Workshop platform tool - were:

Overall Ranking (GFI21)>GEOMAP>click+drag>click+drag>Australia shape ----- 50% (30% direct)

Overall Ranking (GFI21)>country list>scroll country list>Australia-----20% (20% direct)

Overall Ranking (GFI21)>GEOMAP>click+drag>Kenya>click+drag>Australia shape-----10% (10% direct)

The relevant direct success destinations by the tool were:

Overall Ranking (GFI21)>GEOMAP>click+drag>click+drag>Australia shape ----- 50% (10% direct)

Overall Ranking (GFI21)>country list>scroll country list>Australia-----20% (20% direct)

Overall Ranking (GFI21)>country list>search / type>country list>Australia-----20% (10% direct)

For the second task, the countries' performance comparison, the relevant results for in-vivo interaction direct success were:

Overall Ranking (GFI21) > country list > scroll country list > France > data table > mouse over>scroll country list > Italy-----40% (10% direct)

Overall Ranking (GFI21) > country list > search / type > country list > France > data table > search / type > Italy-----20% (10% direct)

Overall Ranking (GFI21) > GEO MAP > France shape > data table > mouse over > scroll country list > Italy-----10%

While, for the interaction by the tool were:

Overall Ranking (GFI21) < country list < scroll country list < France < data table < mouse over < scroll country list < Italy-----20%

Overall Ranking (GFI21) < country list < scroll country list < France < data table < search / type < Italy-----10% (10% direct)

Overall Ranking (GFI21) < GEO MAP < France shape < data table < search/type < Italy-----10%

Overall Ranking (GFI21) < GEO MAP < France shape < data table < mouse over < scroll country list < Italy-----10% (10% direct)

Overall Ranking (GFI21) < country list < search / type < country list < France < data table < search / type < Italy-----10%

Overall Ranking (GFI21) < country list < Filters < Region < Europe, Central Asia  
< France , data table < scroll country list < Italy-----(10%)

(<https://app.optimalworkshop.com/a/5ulk10o1/treejack/results/fld24ad6-b336-4bbb-bc5a-e649c4546c93#/t/results/analysisTools/destinations>)

(<https://app.optimalworkshop.com/a/5ulk10o1/treejack/results/04cd3480-cdbe-445e-9a42-50ad3729b2af#/t/results/analysisTools/destinations>)

The comments of the participants during the tool-tree test reflected that the participants had no previous experience of relevant tools, beside the link of the demo tree test of Optimal Workshop. The textual description of nodes either helped (i.e. search) or disturbed them (i.e. scroll up, zoom in). High percentage of indirect success (50%) in fig.19, is verified by the visualizations of the preferred routes in fig.20. Especially for the comparison task, it is clear that there is a high possibility of user’s drifting around the website until they reach their goal.

Comments of the participants were crucial to the Card Sorting procedure. Firstly, 3 participants revealed a relief about the countries involved in the query as well known, declaring their inconvenience with country spatial detection. Most important were the comments of the tree test, defining the problematic nodes, which could be arithmetically declared as:

A.	SEARCH	1/10	didn't see it at all
		2/10	used it automatically
B.	COMPARE	8/10	gone through without perception
C.	DATA TABLE	7/10	didn't realize that was the answer to task

**Figure 21:** The problematic nodes.

Thus, the problematic nodes were of high importance within card sorting. In order to enhance usability, the moderator insisted on their proposals as designers, which have been already depicted in fig.15 and fig.16.

During the Card Sorting, the procedure of drag & drop was found to be quite convenient to visualize the participant’s mental models (fig.6). That participant stated that he needed extra time to tidy up his categories in order to visualize them in a real place. In addition, all participants paid attention to the order the pillar interfaces would appear in the category menu. 50% preferred the climate policy pillar interface to move next to indice interface for the 40% weighting.

Card sorting’s two explanatory and statistical findings were considerate, with respect to the comments, to propose for the usability of the website. Color results could be taken under consideration for a more symbolic graphic approach of the website.

## Conclusions

The Electronic Media participants used to investigate the web site were most crucial. Moderator suggested a 24/7 computer in contrast to a laptop wi-fi. Most of them accessed the site via Google Chrome browser, while laptop lacked site stability of visibility. Suggestions such as addition of multiple languages choice and modification of data / comparison table situ are omitted via Microsoft Edge Bing browser. In order to reach a conclusion for the 60% finding of Explanatory and Statistical Analysis of Card Sorting about the situ of data table, it was highly recommended for the moderator to insist in browser and media usage. In relevant research, a moderator besides the registration of the hypertext should investigate and conclude about the best media or browser to evaluate a website. Participants should operate under certain circumstances. The website operation under various media or browsers could be stated in the moderator's / evaluator's essay. To conclude, while Google Chrome is mainly used (64.38%), there is a suggestion to improve the visibility of data table, with respect to the appearance situ, for the specific browser (Statcounter, 2024).

Regarding the second finding of Card Sorting, sponsors lie on the header, following the MIT website's specifications - which was stated correctly by a participant. The overwhelming 70% for the sponsors to degrade to the footer situ is not the point. It is most possible the lack of site visibility (Nielsen usability law No.1) that confused the participants. It was stated several times "it is annoying for the sponsors to remain visible all the time if the category menu disappears after scrolling". Inferentially, there is a necessity to modify the stability of the category menu visibility. MIT had already altered the website design in the following versions of the Green Future Index (The Green Future 2022, The Green Future 2023).

The alteration in Card Sorting procedure to evaluate graphic design was well approved by participants, while the procedure interfered mainly with the subject of their curricular studies. It seemed they enjoyed much to suggest alternative situ for the interfaces being an MIT web designer themselves. Probably the procedure will fit among the members of usability groups or website designers' associations. Definitely a vast number of 50 participants will positively affect the results since visualization is a concept most controversial. Definitely moderator should be more specific and firmer: Participants should make use of the specific media and browser suggested, otherwise the results should be excluded from research. During the procedure categories could be proposed, in order to minimize the vast number of categories, to alleviate moderator's work (42 categories for 10 participants). A Delphic Card Sorting could work (Paul, 2008). On the other hand, the procedure may help the IT's, since category onomatology pointed out a necessity to improve programming code. Finally, in order to visualize the participant's mental models, it is recommended to encourage them to tidy up the visual or physical table according to their spatial suggestions. The alteration will certainly work under this special participant's ability of designer's aspect.

Furthermore, Card Sorting found to be able to work with indices workflow construction, among human centered participatory methods (Drago, 2022; Moreira, 2012). The method could work within specific scientific groups aware of the separate indexes construction theory each time. Results probably will be similar to that of questionnaire, or focus group other than Card Sorting linked visualizations offer a perspective of statistical analysis.

## References

- Allison R., Hayes C., McNulty C. & Young V. (2019). A Comprehensive Framework to Evaluate Websites: Literature Review and Development of GoodWeb. *JMIR Form Res* 2019; 3(4):e14372 doi: 10.2196/14372
- Drago C., (2022). From the analysis of the composite indicators to the analysis of the symbolic composite indicators. Conference: The 24th International Conference on Computational Statistics (COMPSTAT 2022) 23-26 August 2022. Affiliation: University of Bologna. <https://www.researchgate.net> [accessed 15 September 2022]
- Drago C., (2017). Interval Based Composite Indicators. *SSRN*. DOI: [10.2139/ssrn.3038751](https://doi.org/10.2139/ssrn.3038751)
- Fincher S. & Teneberg J., (2005). Making sense of card sorting data. *Expert Systems. Willey on line library*. <https://doi.org/10.1111/j.1468-0394.2005.00299.x> [accessed 17 December 2022]
- GFI, (2021). The Green Future Index 2021. *MIT Technology Review Insights*. <https://www.technologyreview.com/2021/01/25/1016648/green-future-index/> [accessed 20 July 2022]
- Hudson W., (2005). *Everything You've Always Wanted to Know About Card Sorting*. Syntagm.com. <https://syntagm.co.uk/design/cardsort.pdf> [accessed 20 October 2021]
- Katsanos C., Tselios N., & Xenos, M. (2012). Perceived Usability Evaluation of Learning Management Systems: A First Step towards Standardization of the System Usability Scale in Greek. Conference: Proceedings of PCI 2012, Piraeus, Greece. DOI:10.1109/PCi.2012.38 [accessed 20 March 2021]
- Lamantia J., (2003 Aug. 26). Analyzing Card Sort Results with a Spreadsheet Template. *Boxes and Arrows*. <https://boxesandarrows.com/analyzing-card-sort-results-with-a-spreadsheet-template/> [accessed 20 December 2022].
- [Laubheimer](#) P., (2021). *How to Interpret Dendrograms from Card Sorting to Improve Information Architecture*. NNgroup. <https://www.youtube.com/watch?v=zmxW1c0DYmM&t=2s> [accessed 27 December 2022]
- Lee R., (2021 July 22). *19 Online Card Sorting Tools To Uncover User Mental Models (2023)*. User interviews. <https://www.userinterviews.com/blog/card-sorting-tools-ux-research> [accessed 28 December 2022].
- Lloyd, D., [Dykes, J.](#) & Radburn, R. (2008). Mediating geovisualization to potential users and prototyping a geovisualization application. *GIS Research UK*. Manchester, UK: April 2-4; 9-16. <https://openaccess.city.ac.uk/id/eprint/409/> [accessed 29 January 2023]
- Meadows D., (1998). *Indicators and Information Systems for Sustainable Development*. The Sustainability Institute, 1998. South Africa. <https://donellameadows.org/> [accessed 15 November 2022]
- Moreira S., (2012). Composite indicators of development - the importance of the weights. Conference Proceedings International Conference "New Challenges of Economic and Business Development" – 2012, Riga. Corpus ID: 111373009. <https://www.semanticscholar.org/> [accessed 20 November 2022]

- NNgroup, (2019, Nov 1). *Tree Testing to Evaluate Information Architecture Categories*. NNgroup. <https://www.youtube.com/watch?v=P0WDO76300Q> [accessed 4 December 2022]
- Nielsen J., (2012 January 12). *Thinking Aloud. The #1 usability tool*. NNgroup. <https://www.nngroup.com/articles/thinking-aloud-the-1-usability-tool/>. [accessed 15 January 2023]
- Nielsen J. & Chan M., (2024 January 26). *Mental Models*. NNgroup. <https://www.nngroup.com/articles/mental-models/> [accessed 2 February 2024]
- Paul L., (2008, November 1). A modified Delphi approach to a new card sorting methodology. *Journal of Usability Studies*, *4*(1), 7–30. <https://dl.acm.org/doi/10.5555/2835577.2835579> \_ [accessed 15 March 2023]
- Righi C., James, J., Beasley, M., Day, D. L., Fox, J. E., Gieber, J., & Ruby, L. (2013 March 1). “Card sort analysis best practices”. *Journal of User Experience*, *8*(3), 69–89. <https://uxpajournal.org/card-sort-analysis-best-practices-2/> [accessed 20 January 2023]
- Roth R., Finch B., Blanford J., Klippel A., Robinson A. & MacEachren A., (2010, November). Cart Sorting for Cartographic Research and Practice. Conference: International Symposium on Automated Cartography (AutoCarto). Orlando, FL. <https://www.researchgate.net/publication/267263187> [accessed 24 January 2023]
- Rugg G., & McGeorge P., (2005, July). The sorting techniques: a tutorial paper on card sorts, picture sorts and item sorts. *Expert Systems*. <https://doi-org.proxy.eap.gr/10.1111/j.1468-0394.2005.00300.x> [accessed 15 September 2022]
- Saltelli A., (2006 September 6). Composite Indicators between Analysis and Advocacy. *Sprinker link*, *81*, 65–77, (2007). DOI: [10.1007/s11205-006-0024-9](https://doi.org/10.1007/s11205-006-0024-9)
- Sauro, J. (2012, July 17). *Card Sorting + Tree testing: The science of great site navigation*. Measuring Usability. <https://measuringu.com/cardsort-tree-test/> [accessed 20 December 2021]
- Spencer D., (2009). *Creating Usable Categories*. New York, Brooklyn: Rosenfeld Media. <https://www.ipcinfo.org>. ISBN: 1-933820-02-0 [accessed 10 November 2021].
- Statcounter, (2024). *Browser Market share worldwide*. Globalstats. <https://gs.statcounter.com/> [accessed 21 February 2024]
- Styliaras G., |Dimou V., & Zeuglolis D. (2019). *Multimedia theory & tools*. Thessaloniki Greece: Tziola (in Greek)
- Syntagm, (2024). *Card Sorting – Introduction*. Syntagm – design for usability. <https://syntagm.co.uk/design/cardsortintro.html> [accessed 20 January 2024]
- Tankala S., & Sherwin K., (2024 February 2). *Card Sorting: Uncover Users' Mental Models for Better Information Architecture*. NNgroup. <https://www.nngroup.com/articles/card-sorting-definition/> [accessed 13 February 2024]
- Tullis T. & Wood L., (2004, June 7). How Many Users Are Enough for a Card-Sorting Study? Conference: Usability Professionals Association (UPA) 2004,(132) Minneapolis, MN. <https://www.researchgate.net/publication/254164354> [accessed 15 September 2022]
- United Nations, (2024). *The Paris Agreement*. United Nations. <https://www.un.org/en/climatechange/paris-agreement> [accessed 28 November 2022]
- Usability.gov, (2021). *Card Sorting*. Usability Gov. <https://www.usability.gov/how-to-and-tools/methods/card-sorting.html> [accessed 10 February 2022]
- Userlytics, (2024). *Optimize your information architecture with Tree-testing*. Userlytics. <https://www.userlytics.com/tree-testing/> [accessed 12 January 2024]

Usertest, (2023 September 8). Create a Card Sort. Usertesting University. <https://help.usertesting.com/hc/en-us/articles/360000662278-Create-a-Card-Sort> [accessed 20 January 2023]

Urh M., Baggia A. & Jereb E., (2014, March). Using a Modified Card Sorting Method for Website Interaction Improvement. Conference: 33rd International Conference on Organizational Science Development. Portorož, Slovenia. DOI: [10.13140/2.1.5031.7443](https://doi.org/10.13140/2.1.5031.7443) [accessed 19 February 2023]

# Communication and “smart public space”: Opportunities, challenges and supporting IoT Technologies

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## Abstract

In this paper we examine communication and IoT technologies as key enablers for the “smart public space”, where communication in collaboration with IoT technologies can satisfy business needs and provide applications and services for improving essential aspects of the modern public space such as the levels of safety, accessibility and overall experience of its users. After studying the literature about the concepts of communication and public space, their characteristics and recent evolution, we investigate the concept of the “smart public space” along with the most important components and technologies of Ubiquitous Computing and the IoT ecosystem. Furthermore, we present a case study about the design and development (PoC) of a system of applications for the “smart public space”, based on computer vision and IoT technologies, and we demonstrate its features and how it can contribute to crowd management and the safety, accessibility and overall experience of public space users. The “smart public space” brings with it not only opportunities for people and communication, but also challenges, such as the need for availability, quality of service, privacy and new ways to design and manage communication and digital applications for sustainable and useful causes.

**Keywords:** communication, smart public space, IoT, AI, computer vision, crowd management.

## Introduction

The emerging technologies of the Internet of Things (IoT) are transforming the way we perceive and interact with the physical realm. As part of the physical realm, the public space cannot remain unaffected by this evolution. In this paper we examine essential aspects of communication and IoT technologies that are affecting the modern public space, transforming it into an information rich, hospitable and smart environment for human activity, with new digital applications and services for the benefit of its users.

Since the last two decades, the Internet and the virtual world (Cyberspace) have already changed the way people interact, communicate, study or work in the digital sphere, from anywhere and anytime. Especially Social Media, as the virtual vessel for online social interaction, user content generation and digital communication, have led to the promotion of various interactions among users with different backgrounds, resulting in rich social exchange, new kinds of services and professions (digital experts, data analysts, etc.) and new fields for data driven research and decision making. Social Media can be defined as a variety of “user-driven platforms that facilitate diffusion of compelling content, dialogue creation, and

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communication to a broader audience. It is essentially a digital space created by the people and for the people, and provides an environment that is conducive for interactions and networking to occur at different levels (for instance, personal, professional, business, marketing, political and societal)” (Kapoor et al. 2018).

The Internet of Things is regarded as the next big step of the Internet evolution, bringing together the physical and the virtual world, where physical objects are being connected to the Internet at an unprecedented rate. This evolution promises to contribute to the quality of people’s lives and to the world’s economy in several domains and environments, by having significant consumer and business applications (e.g. in home automation, transportation, healthcare, industrial automation and emergency response to natural and man-made disasters where human decision making is difficult), (Al-Fuqaha et al. 2015). In effect, IoT enables physical objects to sense the environment, measure its features and help perform jobs by collaborating with one another and making decisions. This gives the objects smart new innovative roles to play in people’s lives. In order to accomplish this, IoT is exploiting several enabling technologies based on Ubiquitous Computing, embedded devices, communication technologies, sensor networks, cloud storage, big data and machine learning algorithms (McEwen et al. 2014). Following this new paradigm, smart objects present a degree of specialization to support domain specific applications; thus, supporting vertical markets. On the other hand, Ubiquitous Computing and analytical services support domain independent application services, for horizontal markets (Al-Fuqaha et al. 2015).

The physical public space has been seen so far as a vital part of social life, urban vitality, coexistence and inclusivity. The experts in the field of Urban Design have proposed goals and priorities for a modern people centric public space (Jacobs et al. 2011) that emphasize on its livability, the sense of identity and control over the public space they use, the access to opportunity, freedom to express themselves and extend their experience in the public space, as well as authenticity and meaning. In addition to this, community and public life is very important in order to encourage participation for all and to promote urban self-reliance in public space. Technology, wireless networks and smart mobile devices have already landed on the public space in the hands of their users, and many location-based applications share ratings and content, making public space a place of digital communication and interaction.

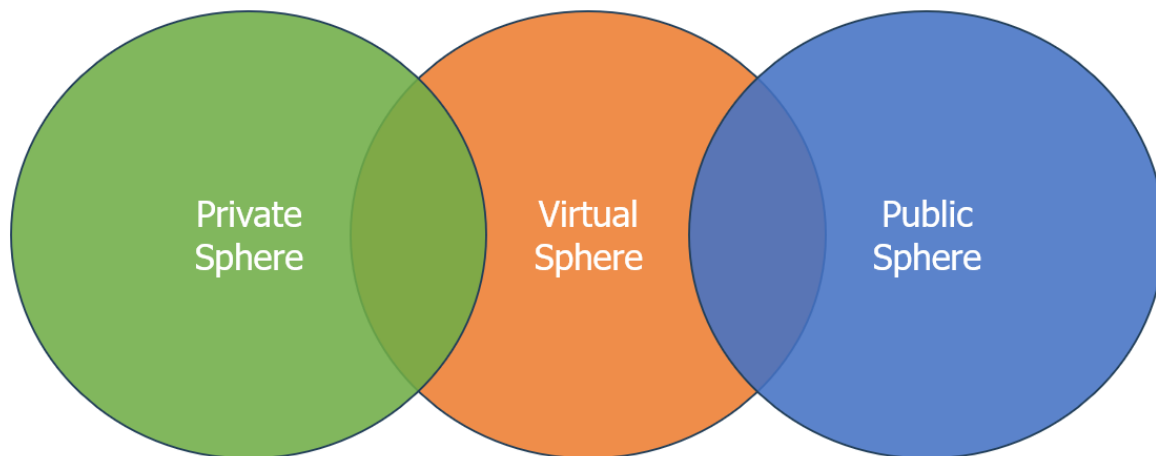
The purpose of this study is to demonstrate how IoT technologies and communication can become the next step for the intelligent emancipation of physical public space, transforming it into a smart public environment. This will be achieved by developing integrated, information rich and user-friendly applications that correspond to specific responsible business goals such as public safety, mobility and user experience. In addition to this, our aim is to bring new emphasis to the physical public space as opposed to the digital public space, and make a small contribution to the vision of its empowerment in order to reclaim its position and full potential in the lives of the people. In the context of this study, communication is not treated as a problem that expects a solution or improvement from IoT technologies. Instead, in our perspective,



communication serves primarily as one of the contributing factors in order to understand and plan ahead new innovative and useful IoT applications for the smart public space of the future.

### **The communication context**

Communication functions as a necessary component for human interaction in order to convey meanings and create culture, technology and social ties. We can distinguish 3 main communication environments, each revealing discrete behaviors and relationships among humans: a. The private sphere, b. the public sphere and c. the virtual sphere (Figure 1).



**Figure 1:** Communication environments

Communication occurs through communication channels that can be physical media (air, sound, paper and writing), electronic media or digital media. Obstacles for communication can be either the noise in the channel that hinders the correct receipt of the messages and the process of encoding or decoding of the messages that can have errors.

The most famous model explaining communication is the Laswell formula for the process of communication, where there are roles for the sender (“Who?”), the message (“Says what?”), the medium (“In what channel?”), the receiver (“To whom?”) and the result of the communication (“With what effect?”). In the basic generalized graphic model of communication an event can be perceived by either a man or a machine, so technology is given a place to the communication process, as a destination of a message, or its originator, or both (Gerbner, 1956). Moreover, the development of communication can go along with the development of technology, since it has been suggested that context rich communication situations can arise with the development of technology (Hall, 1989).

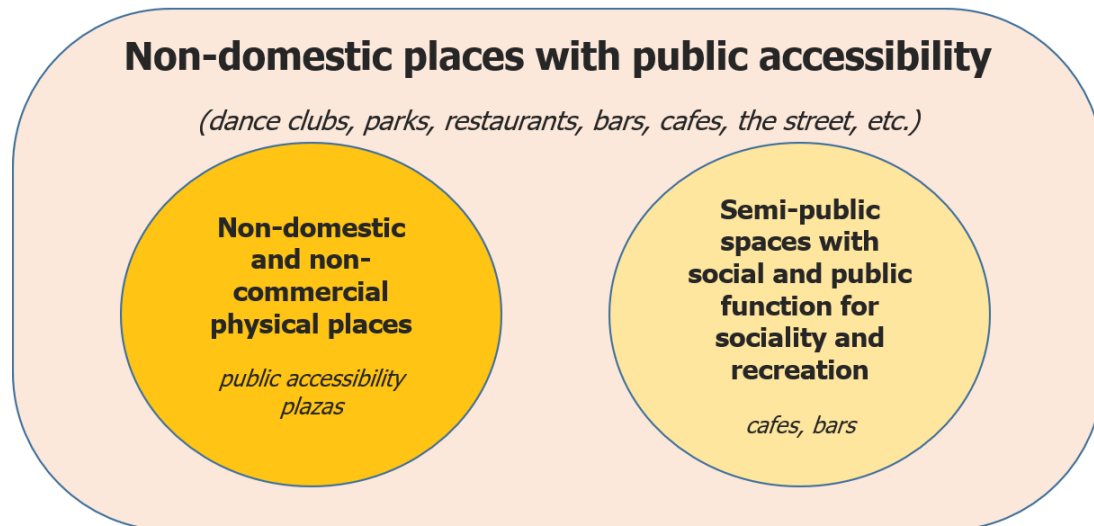
Modernity has brought with it the mass communication phenomena following the rise and spread of the mass society and mass media. Aspects of mass communication is the coverage of mass audiences with the proliferation of mass media (newspapers, TV, radio), journalism,

advertising, promotion and marketing. In the past few decades, we have witnessed the revolution of digital communication. In the beginning with email services, blogging, forums and groups and then with the burst of the social networking applications where there is a constant need for digital content, new digital formal and informal relations and interaction of the users (Castells, 2014). Technology innovation in smart applications and devices have made it possible for everybody to connect to services and to communicate. The discussion about the use of Internet and social media such as Facebook, WhatsApp, X (Twitter), YouTube, LinkedIn, Pinterest, and Instagram, and the kind of impact that they have on people's lives and on interpersonal communication and social interaction is open for research by several scientific fields that explore their positive and negative effects. Generally, the cost of interpersonal communication, the enriching communication channels and modes as well as Building Wider Social networks are regarded as main positive aspects of internet usage, whereas distracting attention, reducing social skills and increasing negative emotions are the main negative, however, the impact of Internet usage on interpersonal communications is still unclear (Li et al, 2022).

The newest evolution of communication is the rise of the IoT environment with new possibilities and opportunities brought about from the collaboration of the physical and digital worlds.

### **Public space as a medium**

Physical public space can be seen in many ways as a medium of human activities, which can be grouped into two main categories (Carmona et al, 2009): a. Activities for movement and transportation and b. social activities and activities of interpersonal communication. In a similar way, public space activities can be described as flows (movement, traffic) and concentration (Tuan, 2001). Public spaces can be defined as non-domestic places with public accessibility (Humphreys, 2010) and so they can have a variety of uses, like parks, restaurants, cafes, streets. When it comes to their commercial nature, public spaces can be either non-domestic and non-commercial physical places, such as publicly accessible plazas, or semi-public spaces with social and public function for sociality and recreation, such as cafes and restaurants (Figure 2).



**Figure 2:** Classification of public spaces (based on Humphreys, 2010)

Public space is “where you watch and you are being watched” and they bear meanings shown in uses, activities and functions of urban social life. The human behavior in public spaces can be explained through the concept of situation (Hall, 1989), in a variety of occasions such as celebration, events, demonstration, protest and social involvement, commercialization and promotion of services, products and new trends, free movement, recreation and leisure.

The physical public space has multiple aspects that are studied by many fields and disciplines including architecture and urban planning. Space seems to promote the “illusions of transparency, of natural simplicity, and of giving free reign” and, since it is socially produced (Lefebvre, 1991) can be seen as three different notions: first as spatial practice (how people observe ourselves and others within it), as representations of space (how architects and designers give meaning to it), and as representational space (its symbolic nature people experience).

Amongst the most important issues concerning the discussion about public space in modern cities are the large- scale building projects, the massive transportation systems, poor living environments, poor vision and effectiveness of urban planning policies (Jacobs, 1961), privatization of public space, loss of political importance (in favor of the space of electronic communication and the consequences that may have particularly to oppositional political movements) (Mitchell, 1995), and eventually loss of public life creating what Galbraiths described as “private affluence and public squalor“ (Galbraith, 1998).

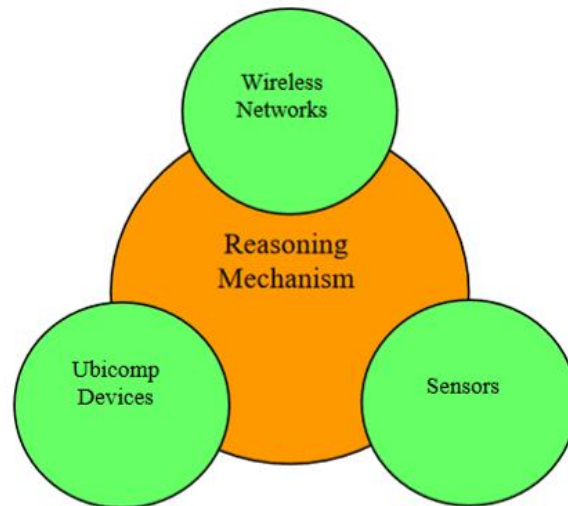
The most important attributes of the public space is the diversity of the cities in terms of the coexistence of people with very different backgrounds (Humphreys, 2010), such as race, class, religion, sexuality, education, political ideology and temperament. The diversity of the public space brings more social obstacles to interact or have a conversation in public with strangers, without common characteristics (Goffman, 1971). The public realm is a form of social space

distinct from the private realm and is essential for the life of the city and it a regio incognita where mostly strangers meet and interact in terms of occupational or other nonpersonal identity categories (for example, bus driver- customer) (Lofland, 1998). In authoritative regimes the public space is under constant surveillance and control in order to suppress freedoms and public expression. Public spaces incline or decline following the overall gentrification of urban landscapes and trends like tourism, and they also face the challenges brought by the privatization of public space.

Technology and public space have a long standing relationship since the public space is used as an environment for outdoor advertising and promotion of messages (e.g. screens, electronic billboards), because it can offer an information rich consumer's experience. The mobile technology has revolutionized the urban life as a "real-time" city (Townsend, 2000) breaking for the first time the limits for omnipresent communication in public space, with social networking promoting the flow of new kinds of information into public spaces and new social and spatial practices. It is argued that "mobile communication increasingly raises the issue of place as an influential factor in communication" (Humphreys, 2011) since mobile applications in smartphones already give access to location-based services and social networking and the users have the opportunity to send contextual information and ratings about the public space they visit in a way that the "communication about place and communication through place both emphasize aspects of the social production of space". In addition to this, it has been suggested that mobile services can be used to facilitate social interaction in public spaces (Humphreys, 2007). Some early examples of how mobile social networks can be used in the city public space has been the case of Dodgeball network ('check-in' messages to meet with friends on local places- Google Maps) and since then a long list of applications has emerged that add value to physical spaces, using geolocation, augmentation, meet ups, messaging and public space gamification (Pokèmon Go), etc..

### **"Smart cities" and the "smartization" of public space**

The "smart public space" is the public space that combines "smart" systems and services for addressing business goals, like mobility, the availability of means and services, facilitate us with suggestions of ways for movement and navigation, warn us to avoid unpleasant or dangerous situations, recommend ways to protect us from threats such as the pandemic or traffic congestion.



**Figure 3:** Components of Smart Spaces (Lupiana et al, 2009)

Technology today is even closer to the vision (Weiser, 1991) about a world with countless interconnected computers and technologies that “weave into the fabric of everyday life, to the point where they are no longer distinguishable from it”. Smart Spaces can be identified as UbiComp environments (Image 3), comprised of wireless networks, UbiComp devices, sensors and reasoning mechanisms, that can understand and react to human desires (Lupiana et al, 2009).

The infrastructure capable of accomplishing this vision is the “Internet of Things” which has been defined by International Telecommunication Union (ITU, 2005), as “the global infrastructure for the information society, supporting advanced services through the interconnection of (physical and virtual) things based on existing or emerging interoperability between information and communication technologies” (ITU, 2005).



**Figure 4:** The vision of Smart Cities

The smart public space can be seen as part of the broader picture of the smart city ecosystem (Figure 4). From the combination of smart things (devices, sensors and actuators) we have smart applications that connect, produce and share information, in broader smart systems that create smart ecosystems. Cloud computing and Artificial Intelligent play a pivotal role in the smart ecosystem. The IoT technologies of the “smart city” infuse information into its physical infrastructure to “improve convenience, facilitate mobility, add efficiencies, conserve energy, improve the quality of air and water, identify problems and fix them quickly, recover rapidly from disasters, collect data to make better decisions, deploy resources effectively, and share data to enable collaboration across entities and domains” (Nam and Pardo, 2011). The programme of Smart Cities includes: Institutional Factors, Public Safety, Government & Agency Administration, City Planning & Operations, Buildings, Technology Infrastructure and applications, Physical Infrastructure, Energy, Water, Transportation, People (Quality of life), Healthcare, Education, Economy, Environment (Harmon et al, 2015). According to Giffinger et al. (2007) the key dimensions of a smart city is economy, mobility, environment, people and governance while Thuzar (2011) finds most important the quality of life, sustainability of economic development, management of natural resources and convergence or economic, social and environmental goals. The key components of a smart city (Nam and Pardo, 2011) are the technology, the people (creativity, diversity and education) and the institutions (governance and policy).

The data drawn from the public space is processed and translated into information and services that enrich the experience of the people in the public space, gain their trust, resulting in the deepening and strengthening of the relationship between the public space and its users. Overall,

a smart city provides some level of interoperability and Internet-based government services as basic infrastructure for ubiquitous connectivity (Al-Hader et al., 2009).

The term “smart” and “smartness” in the smart city is realized only when an intelligent system adapts itself to the users’ needs (Albino et al., 2015). In addition, there is a concept of community that has been attributed to the smart city (Nam and Pardo, 2011) and as a result the technological applications aim at inspiring the sense of community among the citizens. In this way the members of the communities and institutions in a smart city should feel the desire to participate and transform their environment (“smart communities”). People who contribute in the smart city share common qualities such as affinity to lifelong learning, social and ethnic plurality, flexibility, creativity, cosmopolitanism, open-mindedness, and participation in public life (Nam and Pardo, 2011).

### **Supporting IoT technologies**

The technologies that support IoT (Al-Fuqaha et al., 2015) should be capable of interconnecting billions or trillions of heterogeneous objects through the Internet, so there is an increasing number of flexible layered architecture however there are not yet been converged to a reference model. The main proposed architecture consists of five layers: A. The Object layer includes sensors and actuators to perform different functionalities such as querying location, temperature, motion, acceleration, humidity, etc.. B. The Object Abstraction layer transfers data through various technologies (RFID, 3G, GSM, UMTS, WiFi, Bluetooth Low Energy, infrared, ZigBee, etc.) to the Service Management layer through secure channels. C. The Service Management or Middleware (pairing) layer pairs a service with its requester based on addresses and names and enables the IoT application programmers to work with heterogeneous objects without consideration to a specific hardware platform. D. The Application Layer provides the services requested by consumers or businesses and covers numerous vertical markets such as smart home, smart building, transportation, industrial automation and smart healthcare (Khan et al., 2012). Lastly E. the Business (management) layer manages the overall IoT system activities and services with the use of a business model, graphs, flowcharts, etc., makes it possible to monitor and manage all other layers and also supports decision-making processes based on Big Data analysis.

In an effort to form a holistic framework to build diverse Ubiquitous Computing systems for the IoT is the Smart DEI model (Poslad, 2011), which consists of Smart Devices, Environments and Interactions model and can also support different types of smart spaces, with the use of smart mobile devices (Poslad, 2011).

Overall, the core elements of IoT technologies and functionality have been categorized (Al-Fuqaha et al., 2015) into the following groups. First there is A. Identification of objects which uses both object ID and object address to identify objects within a communication network (addressing methods include IPv6 and IPv6). B. Sensing from objects within the network and sending the data to database, data warehouse or the Cloud. C. Communication between IoT

objects with protocols such as WiFi, Bluetooth, IEEE 802.15.4 (LR-WPAN), Z-wave and LTE-Advanced or more specific communication technologies like RFID (RFID tag and reader), NFC (Near Field Communication) used for active readers and passive tags and UWB (ultra-wide bandwidth) designed to support communications within a low range coverage area using low energy and high bandwidth. WiFi communication technology have a maximum range of 100 m and can allow smart devices to exchange information even without using a router. Bluetooth is used to exchange data between devices over short distances with more the energy saving short-wavelength radio (especially Bluetooth 4.1, that provides Bluetooth Low Energy, high-speed and IP connectivity). In addition, IEEE 802.15.4 standard is suitable for reliable and scalable IoT communications and LTE (Long-Term Evolution) standard and provides for high-speed data transfer between mobile phones based on GSM/ UMTS network technologies and LTE-A (advanced) offers higher throughput and lower latencies. D. Computation with all types of processing units (e.g. microcontrollers, SOCs, FPGAs), software applications, and hardware platforms (Arduino, UDOO, Raspberry PI, Beagle etc.) and also Cloud Platforms consist an important part of IoT real time computation of data, big data and knowledge retrieved from them. E. Services of IoT can be distinguished in four main categories: Identity-related Services are the most basic services that are used in all other types of services, Information Aggregation Services that summarize raw data, Collaborative- Aware Services that built on top of Aggregation Services to make decisions and Ubiquitous Services used to make services available anytime, anywhere and to anyone who needs them. Last but not least F. The Semantic functionality of IoT is supported by Semantic Web technologies (RDF, OWL, EXI) and offers the extraction of knowledge by detecting, analyzing data, defining needs and sending the right decision to the right resource.

Standards to support IoT technologies have been proposed by many institutions and organizations (W3C, IETF, IEEE, EPCglobal, ETSI). Prominent IoT application Protocols are CoAP (Constrained Application Protocol), to enable tiny devices with low power, computation and communication capabilities, MQTT (Message Queue Telemetry Transport), to connect embedded devices and networks with applications and middleware as an IoT and M2M (machine to machine) messaging protocol, XMPP (Extensible Messaging and Presence Protocol), used for multi-party chatting, voice and video calling, AMQP (Advanced Message Queuing Protocol), to support reliable communication in IoT, and DDS (Data Distribution Service), to offer high reliability and quality of service to real-time M2M communications. In addition to Application Protocols, IoT is supported by Service Delivery Protocols (Multicast DNS, DNS service discovery), by Infrastructure Protocols (RPL, 6LowPAN, IEEE 802.15.4 etc.) and other protocols and features to support other important aspects of IoT like security and interoperability (IEEE 1905.1) (Al-Fuqaha et al., 2015).

The systems of Ubiquitous Computing operate in three types of environments: ICT, physical and human environment (Poslad, 2011). Their core properties are their (1) distributed and networked nature, (2) the discrete or hidden way for human- computer interaction, (3) the high



level of context awareness, (4) the ability to operate autonomously and be self-governed up to an extent, (5) and the ability to handle multiple dynamic actions and interactions applying intelligent decision – making, with some form of artificial intelligence (AI) (Poslad, 2011). Ubiquitous Computing systems can operate in additional environments than distributed ICT systems mostly because they can work in human-centric personalized environments (personal, social and economic environments) interacting less directly with their users, and secondly that they can handle physical environments of living things (ecologies) and can sense more of the physical world. Artificial Intelligence in Ubiquitous Computing is used to handle incomplete and non-deterministic interactions, collaboration and richer interaction through the sharing of context, semantics and goals.

Machine Learning (ML) and Artificial Intelligent (AI) are part of the computational technologies used in IoT and have proven themselves to offer efficiency and scale and to serve in many application scenarios, especially in real time applications such as Computer Vision. As a data mining technique, ML aims to discover hidden information in data in order to train systems in many fields. Traditional Machine Learning approaches based on linear SVMs and Artificial Neural Networks (ANNs) are now giving way to the evolution of Artificial Intelligence and the development of Deep Learning strategies. Deep Learning (DL) is used in applications for automatic object detection, segmentation and classification. The most widespread Deep Learning architectures are Convolutional Neural Networks (CNN), which are able to classify images into multiple categories, learning their features automatically through convolutional layers that combine multiple non-linear processes. Critical to the success of a CNN is its training process which requires a large volume of samples to enter the system, large computing resources and a long time to complete, ensuring a significant prediction success rate.

Computer Vision is particularly flourishing today as one of the most dynamic precursors of the emerging era of Artificial Intelligence (AI). Computer vision is an interdisciplinary field of study of how computers can be trained to collect data, detect, process, "understand" and describe the visible world, track objects, and automate tasks that human vision system could not process. Computer vision extracts high-dimensional data from the real world for decision support (Huang, 1996) in real time and as a result it can support a lot of use cases in the smart public spaces. More specifically Computer Vision supports applications in the following fields (Xiao et al., 2019):

1. Recognition of objects contained in an image.
2. Object detection, to identify occurrences of semantic objects of a given class. Object detection can be either dedicated or generic object detection (Xiao et al., 2020).
3. Understanding a scene, through the search for the important parts of an image and their further analysis.

A driving force in the development of Computer Vision is the development of Deep Learning technologies, large-scale datasets as well as hardware acceleration that provides powerful

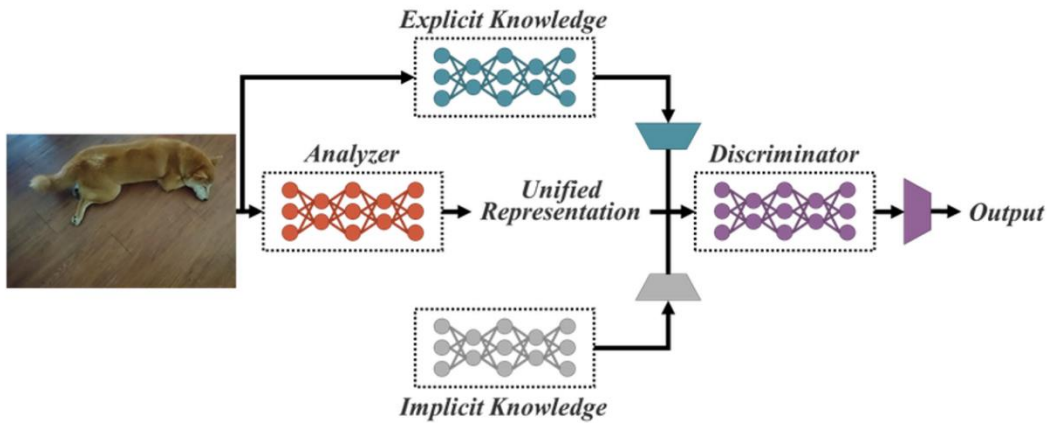
parallel computing architectures that allow efficient training and extraction large-scale inference in complex and multi-layered neural networks.

### **Case study: Smart mobility, safety and experience in Public Space**

The case study that we present demonstrates as thoroughly as possible many of the advanced IoT technologies that can support communication and “smart public spaces” in addressing business requirements. It involves the design and development (PoC) of a system of applications for the “smart public place” [26] which collects and processed in real time data about the crowding conditions of a given public space, triggering notifications when necessary in smart phones or smart screens placed on location.

The business objectives that the author tried to achieve is to improve conditions for mobility, to increase the level of safety and to facilitate the overall experience of the users in the public space. In order to succeed these goals, the author searched the literature about crowd management and respective technologies and found that computer vision is the most suitable direction we should implement. The general idea has been to use object detection and object tracking from a computer vision system in order to identify the number of people within a given public space and then to calculate the level of crowding of this public space. As the main use case, if there are more people than the accepted level, then there should be suitable notifications send to the smartphones and also to the smart screens placed on the walls of the public space preventing more crowding. So, the data that is collected is the number of people present at a given time in given public space and also the author decided that speed can play a role in the crowding level so it has been included in the calculation the average speed of people present which can, under certain circumstances, contribute in its crowding. The method that has been chosen amongst the available location systems (Krumm, 2010) as most suitable to collect the data is a camera, following the paradigm of computer vision. Alternative methods like calculating the number of people from smartphones present or using other sensors on the field proved to be much less cost effective.

As far as the technology of computer vision is concerned, YOLOR (You Only Look One Representation) (Wang et al., 2021) has met with all of the authors criteria, because it is among the fastest and most efficient technologies, it works in real time, it is compatible with existing equipment and, last but not least, it is available and relatively easy to learn and implement (repository Wang, 2021). YOLOR brings together implicit and explicit knowledge and constitutes a unified network with the goal of multitasking (Figure 5). Explicit knowledge refers to normal learning, which stems directly from the information which is being observed. Implicit knowledge refers to subconscious knowledge that utilizes prior knowledge or experience to recognize things and situations.



**Figure 5:** YOLOR use of Explicit and Implicit Knowledge

According to its creators, the introduction of Implicit knowledge into the model increases the efficiency of the methodology (AP: Average Precision) and makes YOLOR as efficient as any other modern object detection methodology (Figure 6).

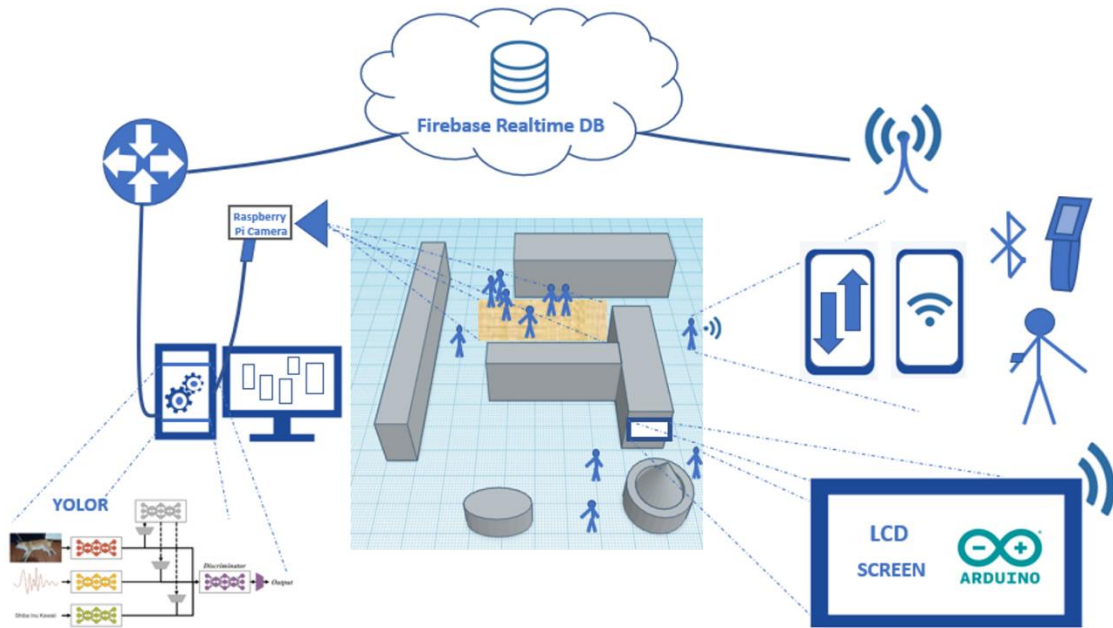
Method	pre.	seg.	add.	$AP^{test}$	$AP_{50}^{test}$	$AP_{75}^{test}$	FPS <sup>V100</sup>
YOLOR (ours)				55.4%	73.3%	60.6%	30
ScaledYOLOv4 [15]				55.5%	73.4%	60.8%	16
EfficientDet [13]	✓			55.1%	74.3%	59.9%	6.5
SwinTransformer [10]	✓	✓		57.7%	–	–	–
CenterNet2 [26]	✓		✓	56.4%	74.0%	61.6%	–
CopyPaste [6]	✓	✓	✓	57.3%	–	–	–

\* pre. : large dataset image classification pre-training.  
 \* seg. : training with segmentation ground truth.  
 \* add. : training with additional images.

**Figure 6:** YOLOR performance in comparison to others (Wang et al., 2021)

The researchers demonstrate that incorporating Implicit knowledge does not incur additional overhead by adding additional training data or additional annotation. The YOLOR has been trained with the MS COCO dataset, because it can be efficient with many different tasks including object detection, instance segmentation and multi-label image classification.

Finally, after examining several different categories of public spaces, the author concluded that the one that covers all our requirements and serves business needs of crowd management is the public space of a mall, where people walk freely in all directions and there are mixed uses for shopping, recreation, entertainment, events etc..



**Figure 7:** Design of the system of applications

Following the business objectives, the author has designed a system of applications that consists of four subsystems (Figure 7). First of all, there is the subsystem of data collection, where there is a camera or CCTV that captures frames from the public space in real time and send it to the subsystem for data processing.



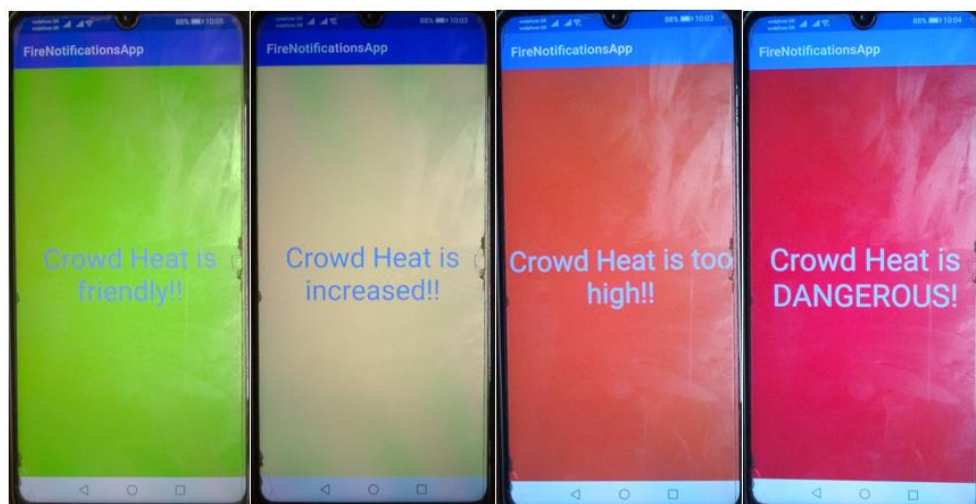
**Figure 8:** Testing YOLOR in laboratory environment

The subsystem for data processing processes the data with the computer vision algorithm (YOLOR) and calculates the crowding levels of the public space (Figure 9).



**Figure 9:** Processing of images in real time

The values of the crowding levels are then sent to the cloud realtime database (DB) and update it. Finally, there is the subsystem for the smart feedback, which is connected to the realtime DB and gets notifications when there is a change in the values of the crowding level. The smart feedback is implemented in two different forms. The first implementation is a smartphone application (Android) that connects to the realtime DB and fires notifications (changing colors, sounds and vibration) according to the levels of crowding in the public space.



**Figure 10:** Smart feedback in smartphone

The second implementation is a prototype of a smart screen (LCD I2C, 20X4) connected to the realtime DB through WiFi (NodeMCU, Node MicroController Unit) that shows messages according to the different levels of crowding in the public space. In real life this smart screen

could be a video wall inside the mall that would inform the visitors with suitable messages about the mobility and safety conditions in the spaces of the building.



**Figure 11:** Smart feedback in the smart screen

At this point it is best to mention the main assumptions for the project. First of all, some of technologies and tools used in object detection and tracking (Figure 12) are not mature enough and as a result are not suitable as enterprise solutions.



**Figure 12:** Logos of tools and libraries used

Moreover, the precision of prediction (coincidence) in the specific implementation was set at a low rate (possibility less than 50%) in order to have more detections. The tests were made in a laboratory set, taking video over video and it has not been tested in the real setting of a public space in a mall.

## **Opportunities**

Communication and IoT technologies as we have presented so far can become the key drivers for change, transforming the physical public space it into a smart ecosystem. One way to accomplish this is to exploit the data derived from the physical public space itself and to return it to its users in the form of a new generation of information rich services and applications. These applications, apart from achieving different kinds of business objectives, can enrich the experience that each individual gets from the public space (Kapenekakis, 2017) in a way that the smart public space can win back the trust of its users and create new stronger ties with them. Even among the users of the public space new innovative applications and services can empower the feeling of belonging and participation and to strengthen the motivation they share for communication and interaction. If the public sphere and the public space have in essence the same meaning (Sennet, 1999) provided that there is a minimal degree of social connection and cohesion within them, the “smartization” of public space with IoT technologies can contribute to achieving this social cohesion and re-activating people’s interest in public space with the help of data, application and service, which can attract the user’s engagement. In this context, new opportunities are emerging not only for the public sphere, which in recent years has experienced degradation due to social distancing and the parallel development of the digital public sphere of social media, but for the overall upgrading of the role of public space.

Apart from a new relationship between the public space and its users, the business objectives for mobility, safety, quality of life, social services, education, entertainment poise new opportunities for the application and UX designers, human computer interaction specialists and software developers in order to produce new pervasive services and applications. Interoperability between applications of similar business function is a major component of the new pervasive ecosystem that offers user friendly and seamless services to the individual.

Context- aware computing (Schilit & Theimer, 1994) consist another field of opportunity for the smart public space applications because it includes the exploitation of location information in order to adapt and make decisions according to location of use, the collection of nearby people and objects, as well as the changes to those objects over time. Overall, the environment context- awareness in Ubiquitous Computing comprises 3 main types: the physical environment context (based on physical world dimension or phenomena, such as weather), the human context (social context, activities, user experience etc) and the ICT context of virtual environment context (based on services available in the distributed system, locally or remotely), (Posland, 2011).

## **Challenges**

The “smart public space” as we have described it in this paper faces the challenges of the IoT technologies that enable it. The general IoT Challenges that consist are improving Availability, Reliability, Mobility, Performance, Management (manage the Fault, Configuration,

Accounting, Performance and Security (FCAPS) of these devices), Scalability, Interoperability (Al-Fuqaha et al, 2015). In terms of information security, the main challenges fall into the following categories: a) access control, b) privacy, c) policing, d) trust, e) mobile device security, f) middleware assurance, g) confidentiality and h) authentication. From the challenges above, we should especially emphasize on the ubiquitous nature of IoT that should always be met with a high quality of service which is critical for both service availability and user trust.

Additionally, the heterogeneity of the IoT environment, with the coexistence of too many smart objects and applications with different characteristics is another challenge which makes it very difficult to implement good practices to comply with adequate Privacy, Integrity and Availability in relation to the security of user data. Especially personal data protection in the public space is a very sensitive matter and should always be a first priority for the application designers, developers and administrators. Public Spaces differ from one another and one smart application designed for one public space can have unwanted effects if it is used to another Public Space without suitable adaptation (Business/ Feasibility study, Risk assessment, Data Protection Impact Assessment- DPIA, etc.).

The implementation of AI into many applications of the “smart public space” brings new challenges about the limits for its responsible use. The new AI regulation of the EU, the group of 20 Artificial Intelligence Guidelines (G20) of the Organization for Economic Cooperation and Development and its General Principles «Human G20» should be taken into account to draw the levels of risk in every new application that uses AI and to protect the interests of the users. In particular, sustainable development and prosperity, transparency and clarity, reliability, subject protection and security and accountability are the core principles to follow for AI. These principles empower the IoT which, in order to succeed in its role, requires international cooperation between companies, mobile telephony and internet providers, governments and also the users themselves to provide uninterrupted services with quality and secure features. The trend that is forming even among technological giants is the corporate responsibility of the technological organization to meet social responsibility and the sustainability of technological applications, positively activating the reflexes of society, leaving a positive imprint on the progress of people and societies.

Building context- aware applications (Schilit et al., 1994) has to deal with a significant aspect of this emerging mode of computing that is the constantly changing execution environment. This naturally consists a big challenge for IoT application designers and developers since the user location instance is mobile and is changing together with the user. In addition, many elements and factors can be regarded as relevant to the context, such as lighting, noise level, network connectivity, communication costs, communication bandwidth, and even social situations as well as context can also include the identities of the people around the user, the time of day, the season, the temperature (Brown et al., 1997) or even the user’s emotional state and focus of attention (Dey, 1998).



## Conclusions

The present paper researched the ways that communication and IoT technologies can collaborate in making feasible the vision of “smart public space”. More specifically, one main result of the paper has been to demonstrate how IoT technologies can be designed, configured and applied to a public space with certain characteristics and potentially transform it into an information richer and safer to use social and communication environment. We examined the literature and we demonstrated a case study of a system of applications, which is specially designed for the “smart public space” and combines in real time object detection methodologies and AI, wireless and mobile technologies, as a proof of concept that business needs such as mobility, safety and experience can be met by implementing suitable IoT technologies and communication.

Furthermore, another result of the paper has been to contribute in a better understanding of the opportunities and challenges for communication within the domain of “smart public space” as one of its enabling forces. Finally, since communication and IoT technologies are two main drivers of transformation for the “smart public space”, this paper conveys the expectations and aspiration for a physical public space that is friendly, inviting and worth living, has self-confidence and offers engaging and potentially life-saving applications and services for its users.

## References

- Albino, V., Berardi, U., & Dangelico, R. M. (2015). Smart cities: Definitions, dimensions, performance, and initiatives. *Journal of urban technology*, 22(1), 3-21.
- Al-Fuqaha, A., Guizani, M., Mohammadi, M., Aledhari, M., & Ayyash, M. (2015). Internet of things: A survey on enabling technologies, protocols, and applications. *IEEE communications surveys & tutorials*, 17(4), 2347-2376.
- Al-Hader, M., & Rodzi, A. (2009). The smart city infrastructure development & monitoring. *Theoretical and Empirical Researches in Urban Management*, 4(2 (11), 87-94.
- Brown, P. J., Bovey, J. D., & Xian Chen. (1997). Context-aware applications: from the laboratory to the marketplace. *IEEE Personal Communications*, 4(5), 58–64. doi:10.1109/98.626984
- Carmona, M., Heath, T., Oc, T. & Tiesdell, S. (2009). *Public Places Urban Spaces The Dimensions of Urban Design*. Oxford: Architectural Press
- Castells, M. (2014). *The impact of the internet on society: a global perspective*. Article from the book *Change*, 19, 127-148.
- Dey, A. K. (1998, March). *Context-aware computing: The CyberDesk project*. In Proceedings of the AAAI 1998 Spring Symposium on Intelligent Environments (pp. 51-54). Menlo Park, CA: AAAI Press.
- Doulaveras, N. (2022). *Measurement of crowd behavior parameters and feedback with the use of IoT technologies in the "smart public space"* (Publication No.171861) [MSc thesis, Hellenic Open

- University, abstract in english]. Hellenic Open University Apothesis Repository. <https://apothesis.eap.gr/archive/item/171861?lang=en>.
- Feng, X., Jiang, Y., Yang, X., Du, M., & Li, X. (2019). *Computer vision algorithms and hardware implementations: A survey*. Integration.
- Galbraith, J. K. (1998). *The affluent society*. Houghton Mifflin Harcourt.
- Gerbner, G. (1956). Toward a general model of communication. *Audio visual communication review*, 171-199.
- Giffinger, R., Fertner, C., Kramar, H., & Meijers, E. (2007). City-ranking of European medium-sized cities. *Cent. Reg. Sci. Vienna UT*, 9(1), 1-12.
- Goffman, E. (1971). *Relations in Public: Microstudies of the Public Order*. New York: Harper and Row.
- Hall, E. T. (1989). *Beyond Culture*. New York: Anchor Books.
- Harmon, R. R., Castro-Leon, E. G., & Bhide, S. (2015). *Smart cities and the Internet of Things*. 2015 Portland International Conference on Management of Engineering and Technology (PICMET).
- Huang, T. 1996. *Computer Vision Evolution and Promise*. CERN
- Humphreys, L. (2007). Mobile Social Networks and Social Practice: A Case Study of Dodgeball. *Journal of Computer-Mediated Communication*, 13(1), 341–360.
- Humphreys, L. (2010). Mobile social networks and urban public space. *New Media & Society*, 12(5), 763-778.
- Humphreys, L., & Liao, T. (2011). Mobile Geotagging: Reexamining Our Interactions with Urban Space. *Journal of Computer-Mediated Communication*, 16(3), 407–423. doi:10.1111/j.1083-6101.2011.01548.x
- ITU (2005). United Nation International Telecommunications Union – ITU, The Internet of Things, ITU Strategy and Policy Unit (SPU), Geneva, Switzerland, November 2005, 2005.
- Jacobs, A., & Appleyard, D. (2011). Toward an Urban Design Manifesto: Journal of the American Planning Association (1987). In *The City Reader* (pp. 574-585). Routledge.
- Jacobs, J. (1961). *The Death and Life of Great American Cities*. New York: Random House.
- Kapenekakis, I., & Choriantopoulos, K. (2017). Citizen science for pedestrian cartography: collection and moderation of walkable routes in cities through mobile gamification. *Human-Centric Computing and Information Sciences*, 7(1).
- Kapoor, K. K., Tamilmani, K., Rana, N. P., Patil, P., Dwivedi, Y. K., & Nerur, S. (2018). Advances in social media research: Past, present and future. *Information Systems Frontiers*, 20, 531-558.
- Khan, R., Khan, S. U., Zaheer, R., & Khan, S. (2012, December). *Future internet: the internet of things architecture, possible applications and key challenges*. In 2012 10th international conference on frontiers of information technology (pp. 257-260). IEEE.
- Krumm, J. (Ed.). (2010). *Ubiquitous computing fundamentals*. Chapman and Hall/CRC Press. ISBN: 978-1-4200-9360-5
- Lefebvre, H. (1991). *The production of space*. Oxford: Blackwell Publishers.

- Li, C., Ning, G., Xia, Y., Guo, K., & Liu, Q. (2022). Does the internet bring people closer together or further apart? The impact of internet usage on interpersonal communications. *Behavioral Sciences*, 12(11), 425.
- Lofland, L. H. (1998). *The public realm: exploring the city's quintessential social territory*. Hawthorne, N.Y., Aldine de Gruyter.
- Lupiana, D., O'Driscoll, C., & Mtenzi, F. (2009, June). *Defining smart space in the context of ubiquitous computing*. In *Ubiquitous Computing and Communication Journal. Special Issue on ICIT 2009 conference–Web and Agent Systems*.
- McEwen, A., & Cassimally H. (2014). *Designing the internet of things*. Willey, ISBN: 978-1-118-43065-1
- Mitchell, D. (1995). The End of Public Space? People's Park, Definitions of the Public, and Democracy. *Annals of the Association of American Geographers*, 85(1), 108–133. <https://doi.org/10.1111/j.1467-8306.1995.tb01797.xa>
- Nam, Taewoo & Pardo, Theresa. (2011). *Conceptualizing smart city with dimensions of technology, people, and institutions*. ACM International Conference Proceeding Series. 282-291.
- Poslad, S. (2011). *Ubiquitous computing: smart devices, environments and interactions*. John Wiley & Sons.
- Schilit, B. N., & Theimer, M. M. (1994). Disseminating active map information to mobile hosts. *IEEE Network*, 8(5), 22–32. doi:10.1109/65.313011
- Schilit, B., Adams, N., & Want, R. (1994, December). *Context-aware computing applications*. In 1994 first workshop on mobile computing systems and applications (pp. 85-90). IEEE.
- Sennet, R. (1999). *Η τυραννία της οικειότητας. Ο δημόσιος και ιδιωτικός χώρος στον Δυτικό πολιτισμό*. Εκδόσεις Νεφέλη.
- Thuzar, M. (2011). Urbanization in Southeast Asia: Developing smart cities for the future. *Regional outlook*, 96, 96-100.
- Townsend, A. M. (2000). Life in the Real-Time City: Mobile Telephones and Urban Metabolism. *Journal of Urban Technology*, 7, 85-104.
- Tuan, Y. F. (1977). *Space and place: The perspective of experience*. U of Minnesota Press.
- Wang, C., Yeh, I., & Liao, H. (2021) *Repository*, <https://github.com/WongKinYiu/yolor> [accessed 23 April 2024]
- Wang, C., Yeh, I., & Liao, H. (2021). You Only Learn One Representation: Unified Network for Multiple Tasks. ArXiv, abs/2105.04206.
- Weiser, M.D. (1991). The computer for the 21st century. *Human-Computer Interaction*, 933-940.
- Xiao, Y., Tian, Z., Yu, J., Zhang, Y., Liu, S., Du, S., & Lan, X. (2020). A review of object detection based on deep learning. *Multimedia Tools and Applications*, 79(33-34), 23729–23791.

# Metaverse as a field of communication and networking in the digital domain: challenges and prospects

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## Abstract

The purpose of this research is to present the Metaverse technology as a digital metamorphosis of reality and to investigate, based on literature review, the possibilities of shaping and experiencing urban social space within a fully or partially controlled virtual environment. In this context, the city transforms into its digital twin, with multiple identities and geographies, where cultural, social, technological, and economic components coexist. Users immerse themselves in this environment and interact with other users and objects in a manner similar to real life. Within a context of an as realistic and integrated as possible experience of a network of multiple exchanges, transactions, and communications at interpersonal, professional, commercial, and political levels, significance lies not only in shaping a user-friendly interface but also in the systematic digitization and integration of material world information with the use of innovative technical means based on Artificial Intelligence, Cloud Computing, Robotics, Augmented Reality, and Internet of Things principles. Conceptually, the properties of Virtual Worlds are examined, focusing on those characteristics related to the Metaverse, the contribution of the aforementioned tools to this effort, followed by examples of application areas across a wide range of activities. The Metaverse offers a renewed perspective on human communication and social relations through immersive interaction methods in the cyberspace, enhancing the digitization of urban environment, commerce, and politics, adaptability to new technologies in view of the Fourth Industrial Revolution, and a sense of participation and collectivity in decision-making.

**Keywords:** Metaverse, communication, networks, immersive interactions.

## Introduction

The concept of the Metaverse, an expansive digital realm where users interact and engage in various activities inside virtual environments, has garnered increasing attention in recent years. As the world becomes increasingly digitalized in multiple aspects of our everyday life, the Metaverse emerges as a captivating field of study, offering profound insights into the evolving landscape of communication and networking in the digital domain. With the onset of the COVID-19 pandemic, the necessity of virtual spaces for communication and collaboration has been underscored like never before. The pandemic forced a rapid shift towards remote work, virtual socializing, and online education, highlighting the importance of robust digital platforms that can facilitate meaningful interactions and connections. In this context, the Metaverse emerges as a critical path for exploration, offering pioneering solutions to the challenges posed by physical distancing measures and the limitations of conventional digital communication

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channels. By delving into its complexities as a field of communication and networking, researchers may uncover valuable insights into its potential to transcend geographical barriers, foster immersive experiences, and reshape the ways of connection and engagement in the digital, Anthropocene era. Moreover, studying the Metaverse allows us to anticipate and address the challenges inherent in its development, including issues of privacy, security, and accessibility. By considering its dynamics and implications for communication and networking, we can harness its transformative prospective to create inclusive, engaging, and interconnected digital environments that enhance human connection and collaboration in the post-pandemic epoch.

The research aims to contribute to an understanding of the new, emerging spatialities developing in the Metaverse, a field that is experiencing intensive research in scientific institutes around the world with an exponential increase in international publications. Therefore, the contribution of a comprehensive study, focusing on the analysis of the Metaverse as a social space, while simultaneously encapsulating the trends, choices, and preferences of users, is expected to propose an improved framework of practical interventions at the level of design, planning and regulatory framework, creating more equitable, sustainable, and human-centered digital spaces.

The structure of the research consists of five (5) chapters, the first one being the Introduction. Chapter 2 elaborates a comprehensive literature review of the notions “digital twin” and “virtual worlds”, establishing an essential theoretic background for the main concept of the “Metaverse”. In Chapter 3, benefits and prospects of the Metaverse are analyzed in a multidisciplinary level, meaning socializing, business and the politics sectors. The risks and challenges of the newly-emerged technology are evaluated in Chapter 4. A balanced view both of positive and negative aspects of the Metaverse usage is summarized in the Conclusions chapter, following an extensive enlistment of all bibliographical references used as the main source of information and study material.

## **Analysis of theoretical framework**

### *The concept of Digital Twin*

The first attempts of an ontological approach to the “digital twin” concept by academic scholars and scientific institutions date back to the early years of the new millennium (Grieves, 2014). However, the first significant definition was published by NASA in 2012, defining the Digital Twin as an “integrated multi-physics, multi-level, probabilistic simulation of a hypothetical vehicle or system that utilizes the best available physical models, enhanced sensors, [...] to reflect the life of its [...] twin” (Glaessgen, and Stargel, 2012). According to Chen’s definition (2017), the digital twin is “a digitized prototype of a real device or system that represents all functional characteristics and connections” (Chen, 2017), including, according to Zheng et al. (2018), “virtual information that fully describes a hypothetical or existing material object from

micro-atomic to macro-geometric levels” (Zheng, Yang, and Cheng, 2018). Liu et al. (2018) provide a more dynamic view, referring to the continuous adaptation of this prototype to functional changes, based on electronic data collection, predicting the future trajectory of its real counterpart (Liu, Meyendorf, and Mrad, 2018), which is crosschecked through continuous tests, maintenance tasks, and data collection throughout its lifespan (Madni, Madni, and Lucero, 2019).



**Figure 8:** The digital twin of a cityscape, generated via the SketchUp design application. (<https://www.sketchup.com> [accessed 10 December 2023]).

The concept of the Digital Twin is frequently confused with those of the Digital Model and the Digital Shadow, as all three of them bear close similarities. A Digital Model is the digitized version of an existing object when there is no automatic data upgrade between them in case of changes occurred in one or the other. Therefore, any alteration in one cannot automatically affect the other's elements. A Digital Shadow refers to the digitized representation of an existing object, which is unilaterally affected by it, while any change in it cannot affect the physical object itself. In Digital Twins, unlike the pair of aforementioned concepts, the key element is the bidirectional communication and interaction between the existing object or system and its numerical counterpart. This does not imply that the Digital Twin is necessarily an accurate replica of its physical counterpart, nor is it a simple three-dimensional graphical depiction (Fuller et al., 2020).

### *Properties of Virtual Worlds*

According to Sadler (Sadler, 2012), Virtual Worlds share some fundamental characteristics, among which are:

**Three-dimensional online environment**, capable of simulating the real world in various historical or fictional settings and spatiotemporal contexts (Dass, Dabbagh, and Clark, 2011).

**Avatar.** Inspired from the Hindu religion (Lochtefeld, 2002), it takes on the meaning of the user’s representation or “incarnation” in the virtual environment through a digital humanoid, a “digital twin” that is a numerical representation of a real person (Ducheneaut et al., 2009).

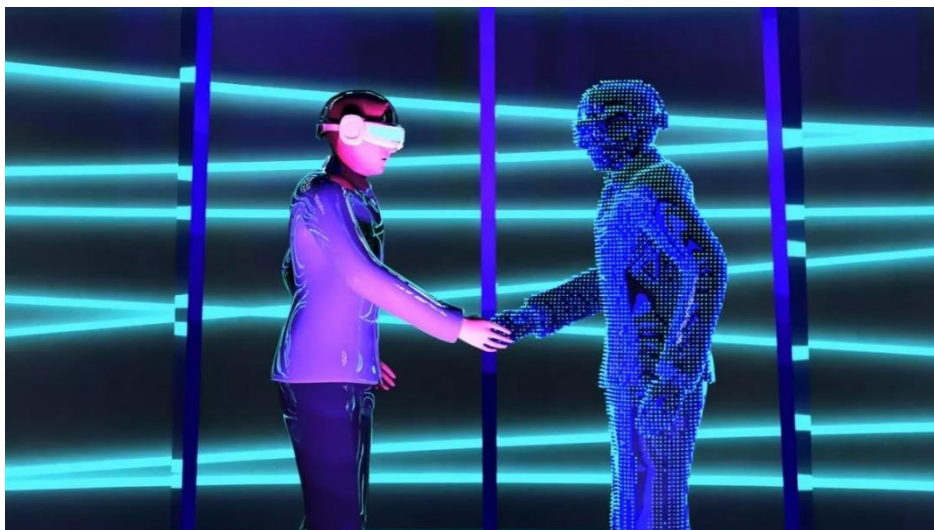
**Real-time interaction,** where avatars interact with each other and their environment’s objects under innovative communicational conditions (González et al., 2013).

**24/7 access,** as the central system allows users to enter and interact seamlessly on a daily, round-the-clock basis (Sadler et al., 2013; Kafai, Fields, and Searle, 2010).

**Persistence,** as both the avatar and its actions are recorded, saved and retained by the time the user logs off, exiting the platform (Warburton, 2009; Choi, and Baek, 2011).

**Social space,** since a virtual world is able to provide interaction between real human beings through their avatars (Jensen, Phillips, and Strand, 2012).

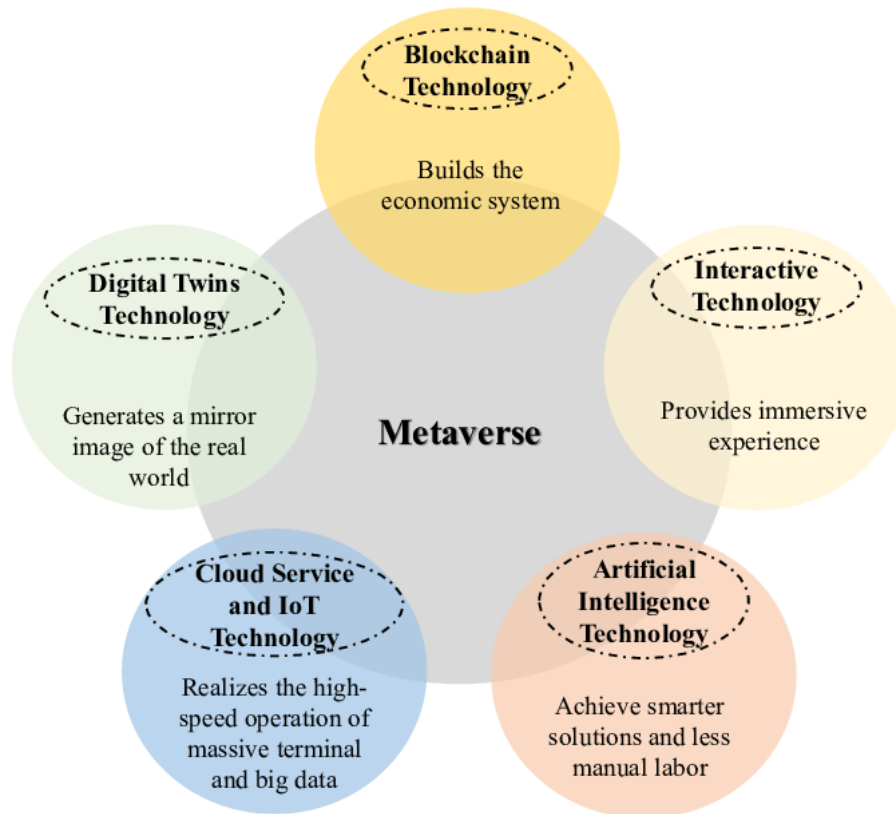
**Quantifiability,** as a virtual realm, analogous to the physical one, grows or weakens proportionally to the presence and activity of populations that occurs within its frontiers (Spence, 2008; Messinger, Stroulia, and Lyons, 2008).



**Figure 9:** In Virtual Worlds, users interact with each other and the digital environment through their avatars. (<https://www.ispo.com/en/news-trends/metaverse-revolution-sports-world> [accessed 9 January 2024]).

### *The concept of Metaverse*

Metaverse is defined as the three-dimensional digital world where the entrance and participation of users are possible and is constructed through methods and techniques of Augmented Reality (AR), Virtual Reality (VR), and blockchain (Laeq, 2022). Renowned Metaverse platforms include Second Life, Decentraland, Metahero, Horizon Worlds, The Sandbox, and CelebrityAtlas (Papailiou, 2022).



**Figure 10:** Diagram of Metaverse-related technological advances and their impact on the Metaverse development. (Chen, Zefeng & Wu, Jiayang & Gan, Wensheng & Qi, Zhenlian. (2022). Metaverse Security and Privacy: An Overview. 2950-2959.

<https://www.doi.org/10.1109/BigData55660.2022.10021112> [accessed 10 April 2024]).

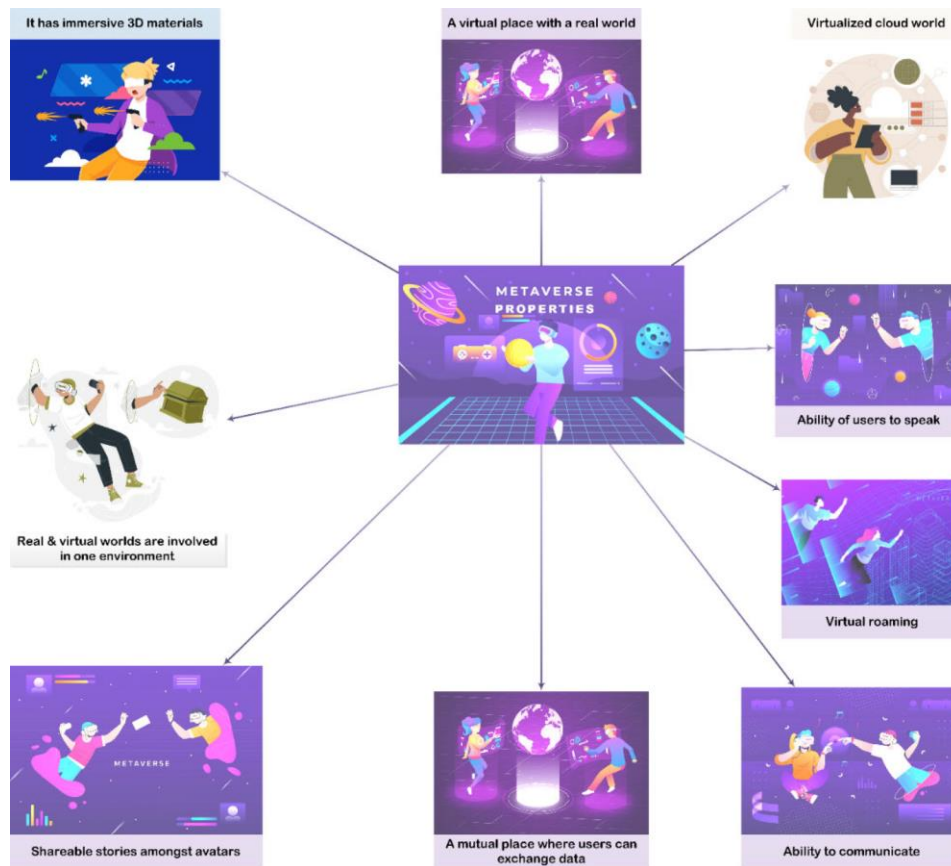
Contrary to the definition of the external architectural environment as a form of relationships between humans, residence, and city (Tsigas, 2009), the Metaverse environment allows the “residents” of online communities a multitude of activities related to commerce, economy, entertainment, recreation, arts, sports, and education. All these shape a network of virtual “communities”, teemed with participatory actions and movements (Hamurcu, 2022; Ng, 2022).

### Benefits and Prospects of the Metaverse

The main benefits of using the Metaverse as a module of digital interaction include **communication and collaboration**, as users are able to network online, chat, and exchange in virtual spaces, expanding the scope of experiences in areas of work and social interactions. Also, the Metaverse allows for the creation of virtual educational environments with plenty of engaging, immersive, interactive, and –what is most important– realistic experiences (Saleeb et al., 2013; Alemán-Saravia, Deroncele-Acosta, 2021). Therefore, the possibility to organize entertainment events, concerts, and social activities is provided, while users navigate through art exhibitions and museums through their avatars (Del Mar Aragón, 2022). Interaction with items of art is not passive, since users are able to express themselves creating artistic content



using AI tools or in connection to the physical world, by sharing their finalized project with the community.



**Figure 11:** Graphical illustration of principal Metaverse properties. (Al-Ghaili, A. M. et al. (2022). Review of Metaverse's Definitions, Architecture, Applications, Challenges, Issues, Solutions, and Future Trends. <https://www.doi.org/10.1109/ACCESS.2022.3225638> [accessed 12 April 2024]).

### *Metaverse and Interpersonal Communication*

The Metaverse, as a digital, virtual space where users are able to interact both with virtual environments and each other, contributes to interpersonal communication by providing new possibilities and experiences. Users share the opportunity, through the creation of their avatars, to reflect either their real appearance or various fictional versions, allowing for an alternative virtual ego, designed specifically for interpersonal communications (Castillo, and Prieto, 2023; Fialho, and Catapan, 1999). Participating in events and activities that occur within the Metaverse, such as games, events, concerts, lessons, etc., offers the opportunity for virtual meetings replacing or complementing physical meetings among participants that share common interests, regardless of their physical location. Communication may occur on multiple levels, including voice, text and audiovisual media, offering the users enriched experiences (Saker, and Frith, 2022; Shayo et al., 2007). In terms of professional communications, interconnectivity between coworkers provides alternative experiences than traditional office locations (Saleem et

*al.*, 2019). Finally, educational experiences are enhanced, as students are immersed in interactive and engaging educational environments, organized and provided by their teachers or instructors (Lepez, 2022).

Overall, the ability to interactively communicate and participate in virtual environments in the Metaverse, provides a totally new dimension to interpersonal communications, enhancing connection and collaboration between people who might reside in distant locations, in every part of the globe where an Internet connection is provided (Suh, 2023).

#### *Metaverse, Entrepreneurship, and Commercial Transactions*

The contribution of the Metaverse to the labour sector is vital, offering new opportunities and applications both for business firms and professionals. Through the Metaverse platforms, businesses conduct virtual meetings and sessions, as alternatives to physical meetings, thus facilitating coordination. The coworkers' teams are currently able to collaborate in virtual spaces, creating environments that encourage creativity and effective communication, participating as well in virtual events and professional communities (Warburton, 2009). Professionals are able to use the Metaverse to furtherly create and present creative content both to their colleagues and clients (Jeong, 2021; Lee *et al.*, 2021).



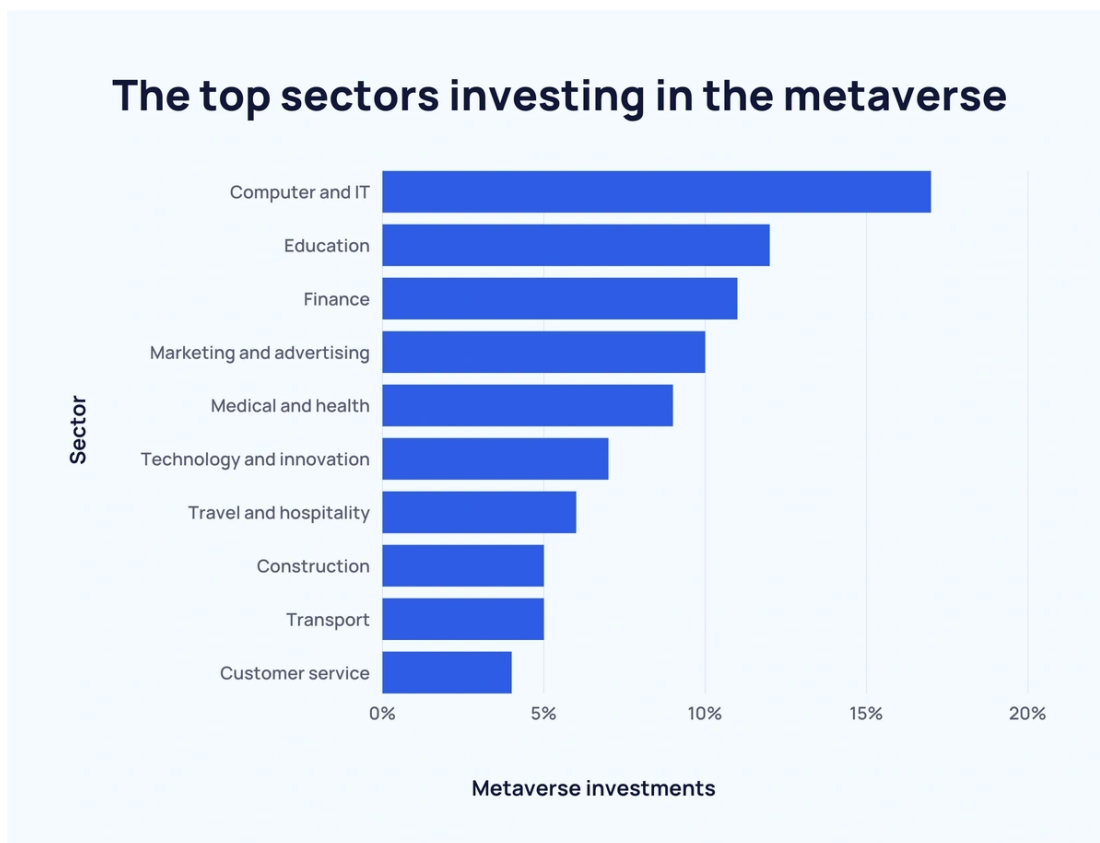
**Figure 12:** A digital twin of a business meeting room in Second Life platform. (Addison A. & O’Hare, L. (2008). How Can Massive Multi-user Virtual Environments and Virtual Role Play Enhance Traditional Teaching Practice?, *Proceedings of the Researching Learning in Virtual Environments ReLIVE08 conference*, p. 13).

In terms of professional education, both educational institutions and enterprises may use the Metaverse as a means to allocate educational programs, training scenarios, and educational experiences to their attendees. In medical and sustainability sectors in particular, the Metaverse is proved to be effectively used for simulation as well as training, being among the most popular and highly-preferred areas of investment so far (Figure 7) (Wang *et al.*, 2022; Zhang *et al.*, 2022; Houda, 2023).



**Figure 13:** A virtual reality Medicine class. Students, represented by their avatars, are seated in digital twins of desks, while the instructor's avatar presents them with slides projected on virtual slideboards. (Göçen, A. (2022). Metaverse in the context of education. *USOBED International Journal of Western Black Sea Social and Human Sciences*, 6(1):98-122. <https://doi.org/10.46452/baksoder.1124844> [accessed 19 April 2024]).

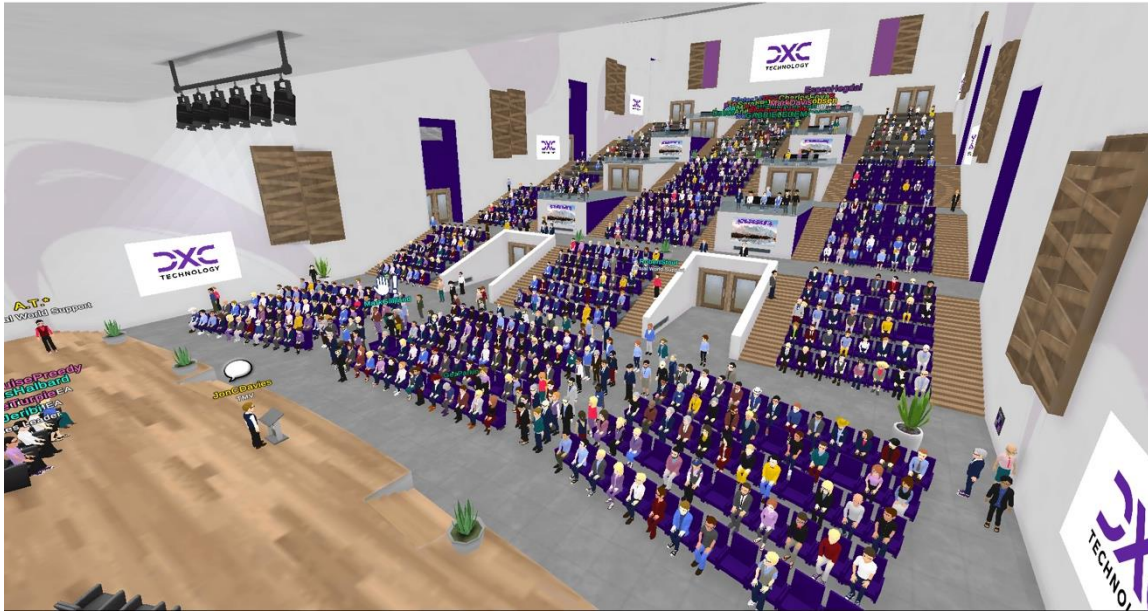
The Metaverse will significantly influence e-commerce, as the global metaverse market is expected to grow dramatically by the year 2030 (Jeong, Yi, and Kim, 2022). Virtual storefronts, virtual markets, and virtual exhibition spaces can be created within the Metaverse, allowing users to browse, purchase, and interact with virtual representations of products (Swilley, 2015). Moreover, the Metaverse enables shopping experiences like virtual try-ons or personalized virtual shopping assistants (Rathore, 2017; Jenkins, 2022). However, it is important to note that the Metaverse is still in its premature stages, and the full extent of its impact on e-commerce has not yet been fully viewed or examined (Bhushan et al., 2021). Various technological and regulatory challenges need to be addressed to fully integrate the Metaverse with current e-commerce and platform economy practices (Baskaran, 2023; Bratu, and Sabău, 2022).



**Figure 14:** A list of up-to-date Metaverse statistical data for 2024. (<https://explodingtopics.com/blog/metaverse-stats> [accessed 12 February 2024]).

*Metaverse and Politics*

The Metaverse offers a virtual space where citizens are able to meet through their avatars, discuss, organize events, and interact on political issues and activities. On their side, politicians can organize events, meetings, and discussions in the virtual space of the Metaverse, attracting participants beyond the physical borders of their territory, from various parts of the world, by organizing campaigns to promote their ideas, views, proposals, as well as answer voters’ questions through virtual events. While those meetings can take place in all-access digital spaces, specialized areas can also be created specified for political discussions and activities. Thus, politicians are able to use the Metaverse as a vehicle to shape public opinion and promote their agenda as effectively as with conventional methods (Delfino, Beramendi, and Zubieta, 2019).



**Figure 15:** Snapshot of a virtual parliamentary consultation in association with DXC Technology. (<https://www.newstatesman.com/spotlight/tech-regulation/public-sector-tech/2022/12/five-ways-metaverse-transform-british-politics-next-five-years> [accessed 12 February 2024]).

## Challenges of the Metaverse

While the Metaverse is not yet fully formed, allowing for further evolutionary reformations, communication and networking risks and challenges are already apparent (De Felice et al., 2023). Privacy Protection is a major one, jeopardizing its proper use and sustainability, since data collection and processing from the platforms' entrepreneurial providers must be handled carefully to ensure the protection of users' personal data (Wang et al., 2022; Far, and Rad, 2022). Ensuring cybersecurity in the Metaverse is essential and might be achieved through the development of secure and protected virtual environments (Di Pietro, and Cresci, 2021; Huang, Li, and Cai, 2023). Regulatory adaptation is also needed to address new issues that arise in the Metaverse, including property rights, security, and consumer protection (Kymaki, 2022; Pavlopoulou, 2021). Finally, in terms of psychological impact, the digital representation of a person in the Metaverse might imply challenges related to their integration into the community, as long as the interaction with other members.

## Conclusions

The prospective of the Metaverse as an innovative human interaction domain is broad and diverse, offering new opportunities for communication, work, education, and entertainment in the digital territory. Its concept has the potential to enhance social cohesion by providing a shared virtual space that transcends physical borders, where people can interact and collaborate,

participating in collective activities, such as virtual events, games, or creative projects and facilitating connections and fostering a sense of community among individuals who may be physically distant, contributing to a sense of belonging and universality. However, its successful implementation requires addressing a multitude of challenges, including privacy issues, security, regulatory matters, and social acceptance. Finally, it is important to consider that the Metaverse is still a complex and evolving concept, and its future impact on social cohesion will depend on various factors, including its continuously evolving design, regulation, and fair usage.

## References

- Alemán-Saravia, A. C., Deroncele-Acosta, A. (2021). *Technology, Pedagogy and Content (TPACK framework): Systematic Literature Review*. Proceedings - 2021 16th Latin American Conference on Learning Technologies, LACLO 2021, 104-111. <https://ieeexplore.ieee.org/document/9725226>.
- Baskaran, K. (2023). *Customer Experience in the E-Commerce Market Through the Virtual World of Metaverse*. In Handbook of Research on Consumer Behavioral Analytics in Metaverse and the Adoption of a Virtual World, 153-170. IGI Global.
- Bhushan, B., Sinha, P., Sagayam, K. M., & Andrew, J. (2021). Untangling blockchain technology: A survey on state of the art, security threats, privacy services, applications and future research directions. *Computers & Electrical Engineering*, 90, 106897.
- Bratu, S., & Sabău, R. I. (2022). Digital commerce in the immersive metaverse environment: cognitive analytics management, real-time purchasing data, and seamless connected shopping experiences. *Linguistic and Philosophical Investigations*, 21, 170-186.
- Castillo, G. D. C., & Prieto, C. A. A. (2023). Metaverso: mundo paralelo digital en la primera infancia: Metaverse: digital parallel world in early childhood. *Maestro y Sociedad*, 20(3), 784-790. <https://maestrosociedad.uo.edu.cu> [accessed 14 November 2023].
- Chen, Y. (2017). Integrated and intelligent manufacturing: Perspectives and enablers. *Engineering*, 3(5), 588-595.
- Choi, B., & Baek, Y. (2011). Exploring factors of media characteristic influencing flow in learning through virtual worlds. *Computers & Education*, 57(4), 2382-2394. <https://doi.org/10.1016/j.compedu.2011.06.019>.
- Dass, S., Dabbagh, N. & Clark, K. (2011). Using Virtual Worlds: What the Research Says. *Quarterly Review of Distance Education*, 12(2).
- De Felice, F., De Luca, C., Di Chiara, S., & Petrillo, A. (2023). Physical and digital worlds: implications and opportunities of the metaverse. *Procedia Computer Science*, 217, 1744-1754. <https://doi.org/10.1016/j.procs.2022.12.374>.
- Del Mar Aragón, M. (2022). Nuevos espacio-tiempos. La inmersividad en la era digital. ASRI: Arte y sociedad. *Revista de investigación*, (21), 72-83. <https://doi.org/10.5281/zenodo.7643031>.
- Delfino G., Beramendi M., Zubieta E. (2019). Participación social y política en Internet y brecha generacional. *Revista de Psicología*. 37(1), 195-216 (ISSN 0254-9247). <https://doi.org/10.18800/psico.201901.007>.

- Di Pietro, R., & Cresci, S. (2021, December). *Metaverse: security and privacy issues*. 2021 Third IEEE International Conference on Trust, Privacy and Security in Intelligent Systems and Applications (TPS-ISA), 281-288. IEEE. <https://doi.org/10.1109/TPSISA52974.2021.00032>.
- Ducheneaut, N., Wen, M. H., Yee, N., & Wadley, G. (2009, April). *Body and mind: a study of avatar personalization in three virtual worlds*. In Proceedings of the SIGCHI conference on human factors in computing systems, 1151-1160. <https://doi.org/10.1145/1518701.1518877>.
- Far, S. B., & Rad, A. I. (2022). Applying digital twins in metaverse: User interface, security and privacy challenges. *Journal of Metaverse*, 2(1), 8-15. <https://dergipark.org.tr/en/download/article-file/2248394> [accessed 4 December 2023].
- Fialho, F. A. P., & Catapan, A. H. (1999). Knowledge building by full integration with virtual reality environments and its effects on personal and social life. *Bulletin of Science, Technology & Society*, 19(3), 237-243. <https://doi.org/10.1177/027046769901900309>.
- Fuller, A., Fan, Z., Day, C., & Barlow, C. (2020). Digital twin: Enabling technologies, challenges and open research. IEEE access, 8, 108952-108971. <https://doi.org/10.1109/ACCESS.2020.2998358>.
- Glaessgen, E. and Stargel, D. (2012). *The digital twin paradigm for future NASA and U.S. Air force vehicles*. Proc. 53rd AIAA/ASME/ASCE/AHS/ASC Struct., Struct. Dyn. Mater. Conf. 20th AIAA/ASME/AHS Adapt. Struct. Conf. 14th AIAA, 1818.
- González, M. A., Santos, B. S. N., Vargas, A. R., Martín-Gutiérrez, J., & Orihuela, A. R. (2013). Virtual worlds. Opportunities and challenges in the 21st century. *Procedia Computer Science*, 25, 330-337. <https://doi.org/10.17705/1jais.00183>.
- Grieves, M. (2014). *Digital twin: Manufacturing excellence through virtual factory replication*. NASA, Washington, DC, USA, White Paper 1.
- Hamurcu, A. U. (2022). The metaverse, online communities, and (real) urban space. *Urbani izziv*, 33(2), 73-81. <https://www.jstor.org/stable/10.2307/27184920>.
- Houda, E. (2023). Augmented Reality and Virtual Reality in Distance-Based Continuing Education: Theoretical Exploration in the Moroccan Enterprise. *African Scientific Journal*, 3(18), 573-573. <https://doi.org/10.5281/zenodo.8149722>.
- Huang, Y., Li, Y. J., & Cai, Z. (2023). Security and privacy in metaverse: A comprehensive survey. *Big Data Mining and Analytics*, 6(2), 234-247. <https://doi.org/10.26599/BDMA.2022.9020047>.
- Jenkins, T. (2022). Immersive virtual shopping experiences in the retail metaverse: Consumer-driven E-commerce, blockchain-based digital assets, and data visualization tools. *Linguistic and Philosophical Investigations*, (21), 154-169.
- Jensen, S. S., Phillips, L., & Strand, D. L. (2012). Virtual worlds as sites for social and cultural innovation. *Convergence*, 18(1), 3-10.
- Jeong, Y. K. (2021). Development of the cultural creative contents industry with the metaverse in corona pandemic era. *글로벌문화연구*, 12(2), 71-96.
- Jeong, H., Yi, Y., & Kim, D. (2022). An innovative e-commerce platform incorporating metaverse to live commerce. *International Journal of Innovative Computing, Information and Control*, 18(1), 221-229. <https://doi.org/10.24507/ijicic.18.01.221>.
- Kafai, Y. B., Fields, D., & Searle, K. A. (2010). Multi-modal investigations of relationship play in virtual worlds. *International Journal of Gaming and Computer-Mediated Simulations (IJGCMS)*, 2(1), 40-48.

- Kymaki, I. (2022). The Oversight Board and constitutional dimensions of social media self-regulation. *e-POLITIA Electronic Journal of Public Law*, issue 4, October-December 2022, p. 516. <https://www.epoliteia.gr/e-journal/2022/10/20/e-politeia-teyxos-4-oktwvrios-dekemvrios-2022> [accessed 19 November 2023].
- Laeq, K. (2022). Metaverse: why, how and what. How and What. [https://www.researchgate.net/publication/358505001\\_Metaverse\\_Why\\_How\\_and\\_What](https://www.researchgate.net/publication/358505001_Metaverse_Why_How_and_What) (retrieved at 5-9-2023).
- Lee, L. H., Lin, Z., Hu, R., Gong, Z., Kumar, A., Li, T., ... & Hui, P. (2021). When creators meet the metaverse: A survey on computational arts. <https://doi.org/10.48550/arXiv.2111.13486>.
- Lopez, C. O. (2022). Metaverso y educación: una revisión panorámica. *Metaverse Basic Appl. Res*, 1(2). <https://doi.org/10.56294/mr20222>.
- Liu, Z., Meyendorf, N. & Mrad, N. (2018). The role of data fusion in predictive maintenance using digital twin. Proc. Annu. Rev. Prog. Quant. Nondestruct. Eval., Provo, UT, USA, Art. no. 020023.
- Lochtefeld, J. (2002). *Avatar: The Illustrated Encyclopedia of Hinduism*. 1:A-M, Rosen Publishing, ISBN 0-8239-2287-1, 72–73.
- Madni, A., Madni, C. & Lucero, S. (2019). Leveraging digital twin technology in model-based systems engineering. *Systems*, 7(1), 7.
- Messinger, P., Stroulia, E., & Lyons, K. (2008). A typology of virtual worlds: Historical overview and future directions. *Journal of Virtual Worlds Research*, 1(1).
- Ng, D. T. K. (2022). What is the metaverse? Definitions, technologies and the community of inquiry. *Australasian Journal of Educational Technology*, 38(4), 190-205. <https://doi.org/10.14742/ajet.7945>.
- Papailiou, A. (2022). The use of Augmented Reality in the era of Industry 4.0 and its multidimensional contribution to enhancing the user experience. Diploma Thesis. Hellenic Open University. Patras. 111. <https://apothesis.eap.gr/archive/item/171020> [accessed 19 September 2023].
- Pavlopoulou, P. (2021), Newly-established rules for controlling social media. A phenomenon of regulatory intervention by civil society in the context of globalisation, EFDD, issue 1, pp. 9-18. [https://www.constitutionalism.gr/wp-content/uploads/2021/06/2021-04-15\\_Pavlopoulos-kanones-eleghou-internet.pdf](https://www.constitutionalism.gr/wp-content/uploads/2021/06/2021-04-15_Pavlopoulos-kanones-eleghou-internet.pdf) [accessed 19 November 2023].
- Rathore, B. (2017). Virtual Consumerism: An Exploration of E-Commerce in the Metaverse. *International Journal of New Media Studies: International Peer Reviewed Scholarly Indexed Journal*, 4(2), 61-69. <https://www.ijnms.com/index.php/ijnms/article/view/109/89> [accessed 4 December 2023].
- Sadler, R. (2012). Virtual worlds: An overview and pedagogical examination. *Bellaterra Journal of Teaching & Learning Language & Literature*, 5(1), 1-22. <https://doi.org/10.5565/rev/jtl3.456>.
- Sadler, R., Dooly, M., Thomas, M., Reinders, H., & Warschauer, M. (2013). Language learning in virtual worlds: Research and practice. *Contemporary computer-assisted language learning*, 159-182.
- Saker, M., & Frith, J. (2022). Contiguous identities: the virtual self in the supposed metaverse. First Monday. <https://doi.org/10.5210/fm.v27i3.12471>.
- Saleeb, N., Dafoulas, G. A., Saleeb, N., & Dafoulas, G. (2013, July). Artificial Intelligence in 3D Virtual Environments as Technological Support for Pedagogy. In *Intelligent Environments (Workshops)*, 443-453.



- Saleem, K. M., Iqbal, M., Saadi, H., Fatima, A., & Enam, R. N. (2019, March). Collaboration of virtual reality in our professional life. In 2019 International Conference on Information Science and Communication Technology (ICISCT) (pp. 1-4). <https://doi.org/IEEE.10.1109/CISCT.2019.8777402>.
- Shayo, C., Olfman, L., Iriberry, A., & Igarria, M. (2007). The virtual society: Its driving forces, arrangements, practices, and implications. In *Psychology and the Internet* (pp. 187-219). Academic Press. <https://doi.org/10.1016/B978-012369425-6/50027-8>.
- Spence, J. (2008). Demographics of virtual worlds. *Journal for virtual worlds research*, 1(2). <https://doi.org/10.4101/jvwr.v1i2.360>.
- Suh, A. (2023). How users cognitively appraise and emotionally experience the metaverse: focusing on social virtual reality. *Information Technology & People*. <https://doi.org/10.1108/ITP-06-2022-0461>.
- Swilley, E. (2015, December). *Moving virtual retail into reality: Examining metaverse and augmented reality in the online shopping experience*. In *Looking Forward, Looking Back: Drawing on the Past to Shape the Future of Marketing: Proceedings of the 2013 World Marketing Congress* (pp. 675-677). Cham: Springer International Publishing.
- Tsigas A. (2009), The importance of phenomenology in the architecture of the home and the city today and in the future. *The Importance of Philosophy in Architectural Education*, Conference, Patras: 9, 10, 11 October 2009.
- Wang, Y., Lee, L. H., Braud, T., & Hui, P. (2022, July). Re-shaping Post-COVID-19 teaching and learning: A blueprint of virtual-physical blended classrooms in the metaverse era. *2022 IEEE 42nd International Conference on Distributed Computing Systems Workshops (ICDCSW)*, 241-247. IEEE. <https://doi.org/10.1109/ICDCSW56584.2022.00053>.
- Wang, Y., Su, Z., Zhang, N., Xing, R., Liu, D., Luan, T. H., & Shen, X. (2022). A survey on metaverse: Fundamentals, security, and privacy. *IEEE Communications Surveys & Tutorials*. <https://doi.org/10.1109/COMST.2022.3202047>.
- Warburton, S. (2009). Second Life in higher education: Assessing the potential for and the barriers to deploying virtual worlds in learning and teaching. *British journal of educational technology*, 40(3), 414-426. <https://doi.org/10.1111/j.1467-8535.2009.00952.x>.
- Zhang, X., Chen, Y., Hu, L., & Wang, Y. (2022). The metaverse in education: Definition, framework, features, potential applications, challenges, and future research topics. *Frontiers in Psychology*, 13, 6063. <https://doi.org/10.3389/fpsyg.2022.1016300>.
- Zheng, Y., Yang, S., & Cheng H. (2018). An application framework of digital twin and its case study. *Journal of Ambient Intelligent Humanized Computers*, 10(3), 1141-1153.

# **The Boarding School (Pondok Pesantren) Education Student Character. Development and Intercultural Communication: The anxiety/uncertainty management theory**

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## **Abstract**

This paper focuses on how the boarding school (pondok pesantren) affects the student's Character Development and Intercultural Communication with anxiety/ uncertainty management theory. The paper's main goal is investigating the relations between the boarding school system and the intercultural communication among students with different cultural background. The paper collected observation behavioral experiments data from a number of the respondents and also literature. This paper examines events such as the Student Character Development and Intercultural Communication through the boarding schools education process. The last literature examined the Boarding and Day School Students: A Large-Scale Multilevel Investigation of Academic Outcomes Among Students and Classrooms. Through the last paper explanation, the language explains about large-scale multilevel investigation in education, this research focuses on the importance of education of boarding school effects on the student character development such as genetic, physical and environmental communication and how they manage the anxiety/ uncertainty through intercultural communication process.

**Keywords:** Character development, Intercultural Communication, Anxiety/ Uncertainty Management.

## **Introduction**

Pondok pesantren (Boarding School) are traditional Islamic boarding schools common in Indonesia and a few other countries. They focus on Islamic education, teaching the Quran, Islamic studies, and Arabic language alongside regular academic subjects. Students in pondok pesantren usually follow a more conservative lifestyle compared to typical modern boarding schools. Pondok pesantren has a rich cultural background deeply rooted in Indonesian and Islamic traditions. Here are some key points highlighting the cultural background of pondok pesantren, islamic education, pondok pesantren primarily focus on Islamic education, teaching students about the Quran, Hadith (sayings of Prophet Muhammad), Islamic jurisprudence, and Arabic language.

Students are encouraged to practice Islam not just in their studies but also in their daily lives. Community Living, Students in pondok pesantren live in a communal setting, where they learn not just from teachers but also from their peers. This community living fosters a sense of brotherhood/sisterhood and respect for elders among students. Traditions and Rituals, pondok pesantren often have their rituals and traditions, which may include daily prayers, Islamic

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celebrations, and special events. These traditions help students connect with their cultural and religious heritage. And Cultural Diversity, While pondok pesantren are rooted in Indonesian and Islamic culture, they also reflect the cultural diversity of the region. Students from different backgrounds come together, bringing with them their unique cultural practices and traditions.

Boarding and Day School Students: A Large-Scale Multilevel Investigation of Academic Outcomes Among Students and Classrooms is likely focuses on comparing the academic outcomes of students attending boarding schools versus day schools. Such research typically involves a multilevel analysis, examining factors at both the student level (individual characteristics such as socioeconomic status, academic motivation, or prior achievement) and the classroom or school level (teacher quality, peer influences, school resources, etc.).

Key points that such a study might investigate include Academic Performance: Whether boarding school students perform better academically compared to day school students, accounting for various factors like background and school resources. Peer Influence and Environment, How the boarding environment, where students spend more time with peers and have structured study schedules, affects academic engagement and achievement.

Classroom Dynamics, Differences in classroom environments, teacher-student interactions, and learning opportunities between day and boarding school settings. Socioeconomic and Demographic Factors, How students' backgrounds (such as family income, parental education levels, etc.) may moderate the effect of attending a boarding or day school on academic outcomes.

Character development, intercultural communication, and anxiety/uncertainty management are all important aspects that can be addressed in various settings, including educational institutions like pondok pesantren. Character development in pondok pesantren is often integrated into daily activities, prayers, and interactions with teachers and peers. Students are given opportunities to practice virtues, learn from mistakes, and grow as individuals. intercultural communication may manifest in interactions between students from diverse cultural backgrounds within Indonesia or from other countries. Students can learn to appreciate and respect different cultures, traditions, and perspectives through dialogue, collaboration, and shared experiences. This can enhance their intercultural competence and empathy. Living in a communal setting like pondok pesantren can be both rewarding and challenging, especially for students who may experience anxiety or uncertainty in new environments. Teachers and mentors in pondok pesantren can support students by providing guidance, creating a safe and supportive atmosphere, and offering resources for managing stress and uncertainty effectively.

## **Research Methodology**

The paper collected observation behavioral experiments data from a number of the respondents and also literature. This paper examines events such as the Student Character Development and Intercultural Communication through the boarding schools education process. Scope and

Limitations, the duration of the research was limited to a-semester period between August 2023 and April 2024.

Population and Sample of the research was selected as the last year students who have passed three years school periods. The sample is selected by the purposive/judicial sampling method, which is one of the improbable/ non-random sampling types, In the improbable/non-random sampling method, there is no equal chance of being selected among the individuals or objects to be selected as the sampling unit, and the researcher's attitudes and convictions become valid. In the purposive/judicial sampling method, the sample units are selected by the researcher with the thought that they will provide the most appropriate data for the research purposes.

According to Creswell (2009) observation is the process of gathering open-ended firsthand information by observing people and places at a research field. It means that observation was needed to collect the data about Scientific Approach applied in daily life student communication way and learning process. Field notes are text (words) recorded by the researcher during an observation in a qualitative study (Creswell: 2012). The observer sat in the back of the classroom to watch and record the communication and learning process. The way in doing observation were: 1) the researcher prepared the observation sheet, 2) the researcher joined the classroom, and 3) the researcher observed the class activities.

The researchers analyse the research with Content analysis. This analysis is a widely used qualitative research technique. Current applications of content analysis show three distinct approaches: conventional, directed, or summative. All three approaches are used to interpret meaning from the content of text data and, hence, adhere to the naturalistic paradigm. The major differences among the approaches are coding schemes, origins of codes, and threats to trustworthiness. In conventional content analysis, coding categories are derived directly from the text data.

## **Findings and Interpretations**

Pesantren are traditional Islamic boarding schools in Indonesia, where students study Islamic teachings, Arabic, and traditional subjects. Implementing Anxiety/Uncertainty Management techniques in pesantren can be beneficial for students' mental well-being and overall development. Pondok Pesantren (Islamic Boarding Schools) are known for their focus on religious education and character building. Students typically live in close-knit, disciplined environments where spiritual, moral, and ethical development are emphasized.

The Pesantren environment instills values such as humility, respect for elders, patience, perseverance, and community service. Students are often taught in a collective living situation that encourages cooperation, empathy, and responsibility.

These institutions emphasize not only academic learning but also the development of good character (akhlakul karimah) through practices like communal prayers, Quranic recitation, and daily chores.

*Intercultural Communication in Pesantren*

Intercultural communication within the context of Pesantren can occur between students from different regions, ethnicities, and cultural backgrounds. While these schools are grounded in Islamic teachings, students come from diverse subcultures within Indonesia or even from abroad, bringing different customs, languages, and social norms. Learning how to communicate effectively across these cultural boundaries becomes essential for Pesantren students, as they engage with peers who may have different ways of expressing ideas or practicing their faith. Anxiety/Uncertainty Management (AUM) Theory, developed by William Gudykunst, is used to understand how people manage the anxiety and uncertainty that comes with interacting with individuals from different cultural backgrounds. A moderate level of anxiety and uncertainty is necessary to foster curiosity and openness, leading to positive intercultural interactions. However, if anxiety is too high, it may lead to avoidance or negative stereotypes, while too little anxiety may lead to complacency or a lack of attentiveness to cultural differences. In a Pesantren, students might initially experience anxiety or uncertainty when interacting with peers from different cultural backgrounds. This could manifest in the form of misunderstandings, communication breakdowns, or discomfort in social situations. The structured and community-oriented environment of the Pesantren, however, can provide a supportive space for students to manage these anxieties and uncertainties. Teachers and religious leaders (kyai or ustadz) often play a key role in guiding students toward understanding and accepting cultural diversity within an Islamic framework. By participating in group activities, communal prayers, shared living spaces, and cooperative learning, students can gradually learn to manage their anxiety and uncertainty, thus improving their intercultural communication skills. Over time, students may develop greater empathy, tolerance, and communication competence by learning how to navigate different cultural contexts in ways that reduce conflict and promote mutual understanding. Through managing anxiety and uncertainty, Pesantren students may develop strong interpersonal and intercultural communication skills, which are essential for functioning in today's diverse and globalized world.

The application of Anxiety/Uncertainty Management (AUM) Theory to student character development and intercultural communication within the context of Pondok Pesantren (Islamic boarding schools) would yield valuable observation results based on how students navigate cultural diversity while developing moral and ethical character. Here's a breakdown of potential observation results from such a study of Initial Anxiety and Uncertainty. Observation: When students first arrive at the Pesantren, especially those from different cultural backgrounds or regions, they often experience elevated levels of anxiety and uncertainty. This is due to unfamiliarity with the environment, peers from different ethnic or linguistic groups, and strict religious norms. Behavioral Indicators: Hesitancy in interacting with students from different regions or ethnicities. Misunderstandings in communication, often based on cultural or linguistic differences. A sense of isolation or withdrawal, especially among students who are far from home for the first time.

Coping Mechanisms for Anxiety/Uncertainty, through observation over time, students develop strategies to manage anxiety and uncertainty in communication. This often comes through guidance from Pesantren leaders (such as kyai or ustadz), peer support, and the structured religious routines that emphasize unity and cooperation.

#### Behavioral Indicators

Increased participation in group activities such as communal prayers, study groups, and sports, which help break down social barriers, Willingness to ask questions or seek clarification in intercultural exchanges, showing growing comfort in communication, Teachers and religious leaders often play a role in mediation or facilitating communication between students from different backgrounds.

As students become more familiar with the intercultural environment, they display better communication competence. They learn how to engage with students from other cultures with reduced anxiety and greater understanding, often facilitated by the religious and ethical values taught in the Pesantren. More fluid and confident communication across cultural groups. Students begin to use inclusive language, ask about each other's cultural practices, and adapt their own communication styles. Shared religious practices (such as communal prayers and Quranic study) serve as a common ground, fostering cross-cultural bonding. Students become more empathetic listeners and show improved non-verbal communication (e.g., showing patience, smiling, or using respectful gestures during conversations).

A noticeable reduction in anxiety and uncertainty is observed as students progress through the Pesantren program. They become more confident in their social interactions and show resilience in situations that previously caused discomfort. Increased participation in leadership roles, such as leading prayers, organizing group events, or acting as mediators between peers. Students demonstrate an openness to learning about other cultures and are less prone to stereotypes or judgments. Less reliance on teachers for managing interpersonal conflicts, as students learn to resolve misunderstandings on their own.

#### *Character Development in Line with Islamic Values.*

The moral and character development of students is closely tied to their improved intercultural communication skills. The values instilled through Pesantren education—such as humility, patience, respect, and cooperation—serve as the ethical foundation for managing anxiety and uncertainty in intercultural contexts. Students display compassion and patience when communicating with those from different backgrounds. They become more reflective, less reactive, and more understanding of differences. Stronger emphasis on community and service, where students voluntarily help their peers and engage in communal activities with greater enthusiasm. A deeper sense of brotherhood/sisterhood emerges, as students begin to see themselves as part of a diverse but unified religious community.

### *Integration of Religious and Cultural Diversity*

Students begin to integrate their religious identity with an appreciation for cultural diversity, seeing it not as a source of division but as an opportunity for spiritual growth and learning. Positive discussions about different cultural practices within the broader Islamic framework, such as discussing regional differences in prayer styles or celebrations. Cross-cultural friendships become stronger, with students openly sharing cultural stories, food, and traditions, while maintaining their common religious identity. A noticeable shift in student leadership roles, where culturally diverse students begin to take on greater responsibilities, reflecting the institution's trust in their intercultural competence.

### *Impact of Pesantren's Structured Environment*

The structured religious and social environment of the Pesantren plays a key role in reducing anxiety and uncertainty. The regularity of shared activities—like prayer, study, and communal living—provides students with predictable frameworks within which they can safely explore intercultural communication. Greater confidence in engaging with peers, as students feel secure within the routine and structure of daily Pesantren life. Increased collaboration in academic and non-academic activities, as students learn to rely on each other's strengths while respecting differences. A sense of spiritual unity where religious practices foster feelings of inclusivity, reducing the importance of cultural divisions.

From the analysis, some strategies that can be applied in pesantren to help manage anxiety and uncertainty, Encouraging Open Communication: Create a supportive environment where students feel comfortable sharing their concerns and fears. Encourage dialogue about emotions to reduce internalized stress. Providing Mental Health Support: Offer access to counselors or mental health professionals who can provide guidance and support to students facing anxiety or uncertainty.

### *Practicing Mindfulness and Relaxation Techniques*

Introduce practices like deep breathing exercises, meditation, or yoga to help students relax and reduce anxiety levels. Promoting Physical Activity: Encourage physical exercise and outdoor activities to help students release pent-up energy and stress. Setting Realistic Expectations: Help students set achievable goals and manage their expectations to reduce feelings of uncertainty and stress. Teaching Problem-Solving Skills: Equip students with problem-solving techniques to help them navigate challenges they encounter, reducing anxiety stemming from uncertain situations.

Fostering a Sense of Community, build a strong sense of community within the pesantren to provide students with a support system and a sense of belonging. By incorporating these strategies into the daily activities and teachings of the pesantren, students can learn effective ways to manage anxiety and uncertainty, leading to improved emotional well-being and academic performance.

The observations from applying AUM Theory in the context of Pondok Pesantren suggest that students experience an initial phase of high anxiety and uncertainty due to cultural diversity. However, through the structured religious environment, supportive community, and emphasis on moral character development, students gradually learn to manage these feelings. Over time, they develop intercultural communication skills, reduce their anxiety and uncertainty, and cultivate moral virtues that align with Islamic teachings. These outcomes contribute to their overall character development, making them more empathetic, resilient, and socially adept individuals capable of navigating diverse cultural landscapes.

The application of Anxiety/Uncertainty Management (AUM) Theory in the character development and intercultural communication of male students in Pondok Pesantren (Islamic boarding schools) presents unique observations and dynamics. Male students, like their female counterparts, undergo significant personal growth in a culturally diverse environment. However, their responses to anxiety and uncertainty, as well as the impact of gender roles and expectations within the Islamic boarding school setting, can shape their experiences differently. Initial Anxiety and Uncertainty Among Male Students, Upon entering the Pesantren, male students may experience anxiety and uncertainty due to being away from their families, adapting to new cultural environments, and conforming to strict religious rules. This is especially true if they are from different regions or ethnic groups, In male-dominated environments, there may be more visible expressions of anxiety, such as restlessness or aggression due to social pressure to appear strong or self-reliant Some male students may initially struggle with emotional vulnerability, as cultural expectations often discourage them from openly expressing feelings of anxiety or insecurity. In interactions with peers from different regions or cultural backgrounds, male students may show hesitancy or avoidance behaviors, especially if they perceive these differences as a threat to their social standing.

Gendered Coping Mechanisms for Anxiety/Uncertainty, Male students often employ specific coping mechanisms to manage anxiety and uncertainty in intercultural communication, influenced by their gendered experiences and societal expectations Male students may rely more on peer group dynamics for support. They often form close-knit groups with others from similar backgrounds, which can initially limit cross-cultural interaction. Humor and competition can become tools for managing anxiety. Male students may use humor to deflect uncomfortable feelings or engage in competitive activities (sports, debates, or Quran recitations) to assert dominance or distract from feelings of uncertainty. Physical activities such as sports or communal work are commonly used by male students as a way to channel anxiety in a productive manner, providing a break from the pressures of academic and religious obligations. Influence of Pesantren’s Structured Environment on Male Students. The structured environment of the Pesantren, with its strict schedules for prayers, study, and communal activities, helps male students manage anxiety and uncertainty by providing routine and predictability.Over time, male students begin to show reduced anxiety as they become accustomed to the routine of the Pesantren. The regularity of activities such as communal



prayers and religious study helps them feel grounded. Leadership roles are often given to older or more experienced male students (e.g., leading prayers, supervising younger students), which fosters a sense of responsibility and confidence in managing uncertainty. Younger students look up to these leaders as models for how to handle intercultural and social challenges. The emphasis on discipline and self-control in the Pesantren helps male students develop emotional regulation skills, which are crucial for managing anxiety and uncertainty in communication.

#### *Intercultural Communication and Peer Dynamics Among Male Students*

Male students in the Pesantren gradually improve their intercultural communication skills as they are exposed to peers from diverse cultural, linguistic, and regional backgrounds. However, the process may be influenced by social norms around masculinity. Initially, male students may gravitate toward peers from similar cultural or regional backgrounds, creating in-groups that can act as a buffer against anxiety in intercultural interactions. Over time, as male students become more comfortable, they are more likely to engage in cross-cultural dialogues during group discussions, religious study circles, or collaborative activities, such as sports or community service. The Pesantren's shared religious values provide a unifying foundation for male students from different backgrounds, helping to ease tension in intercultural communication. As they participate in group prayers and religious rituals, cultural differences become less significant, and a collective identity as Muslim brothers strengthens their communication.

#### *Reduction of Anxiety and Uncertainty Among Male Students.*

Male students gradually experience a reduction in anxiety and uncertainty in their intercultural interactions as they grow more familiar with the Pesantren environment and develop confidence in their communication abilities. Male students show more confidence in public speaking and leadership, particularly in religious contexts (e.g., leading prayers or delivering sermons), which requires effective intercultural communication. Increased participation in intercultural activities, such as engaging with students from different backgrounds in informal discussions, group learning sessions, or cooperative projects. Reduced reliance on cultural stereotypes, as male students begin to appreciate the diversity of their peers and show more openness to understanding different cultural perspectives.

#### *Character Development and Leadership in Male Students.*

The development of moral character and leadership is a central focus of Pesantren education for male students. As they manage anxiety and uncertainty, they also develop qualities such as humility, patience, and empathy. Male students are encouraged to take on leadership roles within the Pesantren community, which fosters responsibility, discipline, and moral integrity. These roles often involve guiding younger students and resolving interpersonal conflicts, requiring strong intercultural communication skills. Self-discipline is a key aspect of character development for male students, as they are expected to regulate their emotions, behavior, and communication in accordance with Islamic values. Brotherhood (ukhuwah) is a central value

promoted in the Pesantren, which helps male students develop close bonds with their peers across cultural divides, reinforcing their sense of unity and shared purpose.

#### *Impact of Gender Norms on Anxiety/Uncertainty Management*

Traditional gender norms in some Pesantren environments may influence how male students manage anxiety and uncertainty. These norms may emphasize self-reliance and emotional restraint, which could initially hinder open communication. Male students may feel pressure to appear strong or unemotional, which can delay their ability to seek help or express their anxieties in intercultural situations. Peer support is crucial in helping male students manage these challenges. Male students who find trusted peers or mentors within the Pesantren community are more likely to open up and seek guidance on how to navigate difficult situations. Over time, as male students gain confidence in managing their emotions, they are more likely to engage in constructive conflict resolution and empathetic communication, which helps to reduce intercultural tension.

Female students experience character development and intercultural communication within a framework that not only emphasizes religious values but also societal gender norms. Managing anxiety and uncertainty in communication, especially in culturally diverse environments, becomes an essential part of their personal and moral growth. Like male students, female students often experience anxiety and uncertainty when they first enter the Pesantren, particularly if they come from different regions or cultural backgrounds. This can be heightened by traditional gender roles that may emphasize modesty, restraint, and obedience. Female students may initially exhibit shyness, hesitation to speak up in group settings, or reluctance to assert themselves in interactions with peers from different backgrounds. Anxiety may manifest in feelings of isolation or withdrawal during the adjustment period, particularly if the students come from areas with different cultural practices, languages, or educational backgrounds. Female students may initially express their uncertainty through non-verbal cues, such as avoiding eye contact or lowered voices, reflecting cultural norms around modesty and propriety.

#### *Coping Mechanisms for Anxiety and Uncertainty Among Female Students.*

Female students often develop coping mechanisms that are reflective of their gender-specific socialization. The close-knit, supportive environment of female Pesantren students helps them manage anxiety and uncertainty in ways that differ from male students. Peer support networks play a crucial role in helping female students cope with anxiety. Close friendships and sisterhood bonds within the Pesantren foster a sense of belonging, easing feelings of uncertainty. Female students often use collaborative and supportive communication styles, relying on cooperation rather than competition to navigate the social hierarchy of the Pesantren. This helps them reduce uncertainty when interacting with students from different backgrounds. Group activities, such as communal prayers, Quranic studies, or shared chores, provide structured opportunities for female students to gradually engage with peers from different cultural backgrounds, fostering more natural and less intimidating intercultural exchanges.

### *Influence of the Pesantren's Structured Environment on Female Student*

The structured, disciplined environment of the Pesantren provides female students with a stable framework that helps them manage anxiety and uncertainty. The routines, such as daily prayers, religious studies, and community work, offer a sense of predictability that reduces stress. Female students display greater comfort and confidence as they settle into the structured routine of the Pesantren. The predictability of the daily schedule helps them feel secure, particularly in a setting where social interactions may initially cause anxiety. Religious practices, such as collective prayers and Quranic memorization, offer a shared cultural and religious foundation that unites students from diverse backgrounds. This reduces anxiety by providing a common ground for interaction. Over time, female students develop a stronger sense of self-discipline and self-control, which helps them manage the emotional aspects of uncertainty in social and intercultural communication. Intercultural Communication and Gendered Expectations Observation: Intercultural communication in the Pesantren is shaped by the gendered expectations placed on female students, who are often taught to be more modest, reserved, and respectful in their interactions. However, these expectations also foster an environment where empathy and listening skills are emphasized. Female students may initially be more cautious in communicating with peers from different cultural backgrounds, especially when cultural differences relate to modesty, religious practice, or gender roles. As they adjust, female students become more comfortable engaging in open dialogue during religious study groups, discussions with teachers, or informal conversations with peers. They often rely on empathetic listening and non-confrontational communication styles, which help bridge cultural divides. Group study sessions and communal activities allow female students to learn from each other's cultural practices while managing anxiety and uncertainty. These activities help foster tolerance and understanding through shared religious values.

### *Reduction of Anxiety and Uncertainty in Female Student.*

As female students grow accustomed to the Pesantren environment, their anxiety and uncertainty in intercultural communication gradually decrease. Over time, they become more confident and proactive in managing differences. Female students show increasing confidence in group discussions, particularly when discussing religious or ethical topics that provide a common ground for students from different backgrounds. There is a noticeable shift in social interaction patterns, with female students forming friendships across cultural lines. These relationships help them manage uncertainty by fostering deeper interpersonal understanding and trust. Female students begin to engage in more assertive yet respectful communication, particularly in situations that require them to navigate cultural differences (e.g., resolving conflicts, leading group prayers, or collaborating on projects).

### *Character Development in Female Students.*

Female students in the Pesantren undergo significant character development, shaped by the religious and moral values of the institution. This development is closely linked to their ability to manage anxiety and uncertainty in intercultural communication. Female students develop

qualities such as patience, humility, and compassion, which are reinforced through religious teachings and daily interactions with peers from different backgrounds. These traits help them navigate intercultural communication with greater ease and empathy. The emphasis on modesty and ethical conduct within the Pesantren shapes female students' character in ways that align with Islamic values, promoting self-discipline and emotional regulation. As they become more confident in their communication skills, female students are often encouraged to take on leadership roles, such as guiding younger students or organizing religious and social activities within the community. These roles further develop their sense of responsibility and moral integrity.

Impact of Gender Norms on Anxiety/Uncertainty Management, Gender norms in the Pesantren influence how female students manage anxiety and uncertainty in communication. Traditional expectations around modesty and propriety may initially restrict open communication, but they also create opportunities for female students to develop unique interpersonal skills. Female students are often expected to maintain a respectful and modest demeanor, which can limit their assertiveness in intercultural communication. However, this also fosters the development of listening skills, empathy, and emotional intelligence, which are crucial for managing uncertainty. The safe and supportive environment of the Pesantren allows female students to gradually express themselves more openly, without the fear of violating cultural or religious norms. This creates a space where they can manage anxiety and uncertainty in a socially acceptable way. Over time, female students become more adept at balancing modesty with confidence, learning how to navigate both intercultural and gender-specific expectations in ways that align with their religious values.

In Pondok Pesantren, male students face unique challenges in managing anxiety and uncertainty related to intercultural communication. Initially, they may experience heightened anxiety due to cultural diversity and the expectations placed on them to conform to gender norms that emphasize emotional restraint. However, as they adapt to the structured environment and engage with peers from different backgrounds, they develop self-discipline, leadership, and communication skills. The religious framework of the Pesantren, combined with opportunities for intercultural dialogue and character development, helps male students gradually reduce their anxiety and uncertainty. By fostering empathy, respect, and patience, the Pesantren prepares male students to navigate diverse social and cultural environments effectively.

For female students in Pondok Pesantren, the process of managing anxiety and uncertainty in intercultural communication is influenced by both the structured religious environment and traditional gender norms. Initially, female students may experience heightened anxiety due to cultural differences and societal expectations around modesty. However, through peer support networks, shared religious practices, and the development of empathetic communication skills, they gradually become more confident in navigating intercultural interactions. The Pesantren's emphasis on character development—particularly qualities such as patience, humility, and compassion—helps female students grow both morally and socially. Over time, they learn to

manage their anxiety and uncertainty in ways that are aligned with their faith and cultural expectations, becoming resilient, empathetic, and competent communicators in diverse environments.

## References

- Barlow, D. H., & Craske, M. G. (1984). Panic and generalized anxiety disorders: Nature and treatment. *Behavior Therapy*, 15(3), 231–250. [https://doi.org/10.1016/s0005-7894\(84\)80042-0](https://doi.org/10.1016/s0005-7894(84)80042-0)
- Beck, A. T., Emery, G., & Greenberg, R. L. (1974). Ideational components of anxiety neurosis. *Archives of General Psychiatry*, 31(3), 319–325.
- Butler, G. (1985). Exposure as a treatment for social phobia: Some instructive difficulties. *Behaviour Research and Therapy*, 23(5), 651–657. [https://doi.org/10.1016/0005-7967\(85\)90097-9](https://doi.org/10.1016/0005-7967(85)90097-9)
- Butler, G., Fennell, M., Robson, P., & Gelder, M. (1987). Anxiety management for persistent generalized anxiety. *British Journal of Psychiatry*, 151(1), 535–542. Clark, D. M. (1986). A cognitive approach to panic. *Behaviour Research and Therapy*, 24(4), 461–470. [https://doi.org/10.1016/0005-7967\(86\)90011-2](https://doi.org/10.1016/0005-7967(86)90011-2)
- Clark, D. M., & Salkovskis, P. M. (1985). Respiratory control as a treatment for panic attacks. *Journal of Behavior Therapy and Experimental Psychiatry*, 16(1), 23–30. [https://doi.org/10.1016/0005-7916\(85\)90003-4](https://doi.org/10.1016/0005-7916(85)90003-4). <https://doi.org/10.1192/bjp.151.4.535>
- Hamid, A. (2017). Pendidikan karakter berbasis pesantren (pelajar dan santri dalam era IT dan cyber culture). Surabaya: [Publisher Name].
- Hasmayni, B. I., & Simatupang, H. (2012). Perbedaan minat sekolah dan motivasi belajar ditinjau dari pola asuh orangtua. *Jurnal Magister Psikologi UMA (Analitika)*, 4(1), 24–30.
- Hendriyanti. (2014). Pelaksanaan program boarding school dalam pembinaan moral siswa di SMA Taruna Indonesia Palembang. *Ta'dib*, 19(2), 203–226.
- Kaelani. (2010). *Pendidikan Pancasila* (Edisi Reformasi). Yogyakarta: Paradigma.
- Kurnia, D. A. (2014). *Implementasi nilai kejujuran di Sekolah Dasar Negeri Kota Gede 5 Yogyakarta*. [Undergraduate thesis, Universitas Negeri Yogyakarta]. Fakultas Ilmu Pendidikan.
- Lestari, S. (2014). *Psikologi keluarga* (Penerapan nilai dan penanganan konflik dalam keluarga). Jakarta: Kencana Prenadamedia Group.
- Lubis, R. (2015). *Metode penelitian kualitatif*. Medan: Fakultas Psikologi UMA.
- Mas'ud, A. (2002). *Dinamika pesantren & madrasah*. Yogyakarta: Pustaka Pelajar.
- Khalidy, S., et al. (2014). Pengelolaan pendidikan karakter berbasis boarding school di SMP. *Jurnal Manajemen Pendidikan*, 9(1), 77–84.

## **Foreword to the third thematic: Artificial Intelligence and the Evolution of Journalism in the Digital Age**

Maria Matsiola \*

The third thematic touches upon the up-to-date topic of Artificial Intelligence and its role in the evolution of journalism in the digital age. It explores the profound transformations AI is bringing to news creation, distribution, and journalistic practices. The acceleration caused by the pandemic to the adoption of mobile technologies, the critical issues like data protection, fairness, and human rights and the role of real-time data analysis and personalized content are discussed in the four chapters of the thematic.

The first paper titled “Artificial intelligence in journalism: The new era in news and communication” examines the impact of algorithms and artificial intelligence on journalism by defining automated news content creation and explaining the use of artificial intelligence in the creation of news content in journalism. The positive and negative effects of this use along with the consequences and the ethical issues are presented within the framework of the journalistic profession and the labor relations of journalists.

The second paper of the thematic is titled “The impact of COVID-19 pandemic on the spread of Mobile Journalism within the professional journalists and it explores the impact of the COVID-19 pandemic on mobile journalism among Greek professionals, focusing on the accelerated adoption of mobile technologies in journalism. Using a mixed-methodology approach, including an online survey and a case study, the research examines how mobile devices became central to news production and distribution during and after the pandemic. The findings underscore the app's role in enhancing journalistic practices and supporting efficient news dissemination, contributing to the evolution of digital journalism in the context of global challenges.

The third paper, titled “Artificial intelligence in journalism: Practices, challenges and regulatory framework”, explores how media organizations utilize AI, especially for managing user-generated content, and delves into pressing issues such as data protection, fairness, and human rights. Furthermore, it assesses the emerging regulatory landscape surrounding AI in journalism. The field of journalism is affected by the explosive growth of AI tools and systems

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and despite the benefits to news production, navigating complexities requires careful consideration of the associated challenges and ethical implications.

The fourth paper is titled “AI in Communication and News Media Organizations: Current Transformations and Future Directions” examines the transformative impact of Artificial Intelligence (AI) on communication and news media organizations. It explores how AI-driven technologies are reshaping the journalistic landscape by enabling real-time data analysis and personalized content generation. The chapter focuses on the extent to which journalists' roles and workflows are evolving and the ethical considerations necessary for fostering a responsible, user-centric news environment. A key aspect of the study addresses the challenges faced by small news media organizations, particularly the lack of support from tech companies, which threatens their sustainability.

# **Artificial intelligence in journalism: The new era in news and communication**

Sotiris Triantafyllou, Panagiotis Kapos\*

## **Abstract**

This article examines the impact of algorithms and artificial intelligence in journalism. Firstly, it attempts to define and explain what we call robot journalism or automated news content creation. Also, this article tries to define and explain the use of artificial intelligence in the creation of news content in journalism. It emphasizes the utilization of these developments in journalism, the creation of news content by algorithms, what we call robot journalism as well as the use of artificial intelligence in journalism. In addition, it presents the positive and negative effects of this use and the consequences of the use of algorithms and artificial intelligence in journalism. Moreover, the article presents the consequences of the use of algorithms and artificial intelligence in the labor relations of journalists. Furthermore, it describes the ethical problems that exist, the efforts that must be made in general as well as all the challenges and risks that derive for newsrooms, editors, journalists and the citizens. The article uses surveys in order to explain all the above and finally examines all the aspects of the use of algorithms and artificial intelligence in journalism.

**Keywords:** Journalism, robot journalism, algorithms, artificial intelligence, journalists' avatar, ChatGPT.

## **Introduction**

We live in a new era, the era of technological developments, which are particularly rapid. They take place at a speed that no one could have imagined, especially before the discovery of the internet, which Leandros (2005) considers to be of equal importance to the discovery of printing. Moreover, they have significantly influenced the media industry worldwide, changing the nature of journalism and information and shaking the hierarchy that already existed. The changes are fundamental and journalism has changed a lot. The journalist no longer has exclusive access to the information. Their role in the information chain is changing in a way that is being questioned, while researchers in the field, such as Fulton (1996), Rottwilm (2014) and Singer (1998), state that new media technologies challenge one of the most fundamental “truths” in journalism, that the journalist is the one who determines what the public knows about the world. Researchers such as Anderson, Bell and Shirky (2014) called this new landscape that has been created in journalism “post-industrial journalism” and, according to them, this means that the entire organization of the profession has changed. All the above show that there is a new landscape in journalism, which is not only redefining the profession of the journalist. This new landscape also requires the acquisition of new skills, both for existing and

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new journalists, in order to be able to respond to the demands of the new era and the transformation process of the media industry on a global level (Leandros, 2011; Picard, 2015).

All the above are drastically changing the ecosystem of information. In this new ecosystem, there is a big change and a huge challenge for journalism, which is called Artificial Intelligence (AI). According to Mitrou (2023), AI is the technology that allows computers to do things that require intelligence, when performed by humans. Also, AI is a collection of ideas, technologies and techniques that relate to a computer system's capacity to perform tasks normally requiring human intelligence (Brennen, Howard & Nielsen, 2018).

Artificial Intelligence appeared in journalism in 2014, but got a big boost with the discovery of ChatGPT, in 2022. A new term that is used after the discovery of ChatGPT is Generative AI, which is a sub-field of machine learning that involves generating new data or content based on a given set of input data. This includes generating text, images, code or any other type of data. Typically, genAI uses deep learning algorithms in order to learn patterns and features in each dataset and then generates new data based on the underlying input data (Foy, 2022).

### **Methodological approach**

The methodological approach of this article was based on the use of qualitative research methodology, such as literature review and the use of secondary data from the internet. In particular, studying a field under constant and rapid transformation, it was deemed appropriate to investigate its current state through the presentation of applied examples of AI in media organizations.

Therefore, the following methods of collecting and generating qualitative data were used in combination:

- literature review through primary sources: books, journal articles, industry studies and surveys
- extensive collection, processing and analysis of secondary data from the internet: information material, articles, applied examples, reports

Through a systematic and updated literature review as well as the use of secondary data from the internet, this article aspires to document the current state in the field of journalism with the increasingly systematic use of AI tools, to highlight the important effects of AI and the challenges faced by media organizations. Essentially, this article aims to serve as a reference framework for building, in the near future, applied research in the field of media in the AI era.

#### *Robotic journalism*

The evolution of the internet and of new forms of media has resulted in a very important development in journalism, the production of news content without human mediation. Automated journalistic content or robotic journalism (robot journalism) or algorithmic journalism, as it is called, started from sports and financial reporting (Clerwall, 2014; Gunter,

2003; Lecompte, 2015). It has now expanded to a wide range of reporting and it is used by many major media organizations resulting in a very big change in the journalism ecosystem (Triantafyllou, 2020).

There are two forms of robotic journalism: the first form, in which the journalist enters structured information and the algorithm produces the article based on a template, and the second form, in which natural language processing (NLP) is used and the article is algorithmically produced from unstructured information. News generating software usually uses predefined phrases to generate the news. There are, in fact, companies that deal with this subject and that cooperate with the media<sup>3</sup>. (Albeanu, 2016c & 2016d; Clerwall, 2014; Lecompte, 2015). According to Anderson et al (2014), scientists claim that, in the future, 80% to 90% of the news will be generated algorithmically, which will probably mean the loss of jobs in the media sector (Triantafyllou, 2020).

As Veglis (2015, p. 3,4) typically states about automated journalistic content: “In the near future, the following scenario no longer seems so fantastic: A car is moving on a dark road. Suddenly, a big cow crosses the road. The driver does not have time to react and hits the cow at high speed. The car, which is equipped with a modern collision detection system and a GPS unit, sends information about the collision to the relevant authorities. At the same time, information about the crash is collected by a news service and in a few seconds a short story is created and distributed to the contracted online newspapers. In online newspapers, Content Management System (CMS) decides that the particular story will attract the interest of the readers and forwards it to the online editor with a proposal for the position in which the news should be placed. The latter approves of the news that appears in the online newspaper. Automated content is part of algorithmic news, related to SEO (Search Engine Optimization) techniques, and news related to internet searches (articles based on popular searches on Google, Bing, etc.). News which is produced by an algorithm is not concerned with what the public should know in order to make good decisions and behave as proper citizens in a democracy, but with what the public, at a given moment, appears to want to be informed about (and thus the public is treated as a consumer and not as “citizens”).

Automated journalistic content, however, is not much different from the one produced by journalists, and readers can hardly tell the difference. In a survey conducted in 2013 among journalism students in the USA concerning texts written by humans and by computers without human mediation, it emerged that in some categories the human factor prevails, while in others the computer (algorithm), and the conclusion finally was that there are no major differences between human-generated content and algorithm-generated content.

17 students from a website production program and 46 media and communication students took part in the survey. They were assigned to read a recap of an American football game (rugby, NFL), either written by a journalist or generated by software, and then they were asked to rate

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<sup>3</sup>One of these companies is Wordsmith (<https://automatedinsights.com>).

the text using several variables (Clerwall, 2014). Research in the Netherlands and in Denmark had exactly the same results and showed that for texts written by a computer, readers thought they were written by a human. This somehow suggests and confirms that the quality of automatic texts is on a par with human texts, at least for routine news, which also leads to human-machine collaboration. The role of the computer will be to analyze the data, find interesting stories and provide a first draft and material about a topic, which journalists can then enrich with in-depth analysis and interviews (Triantafyllou, 2020).

For example, in the USA, a relevant program has been launched in polls. The bot (algorithm) writes the typical story about the poll, i.e., the results, the sample size, who took it and when. It also compares it with other polls and afterwards the political conclusions are drawn by journalists and the analysis is taken over by them. In these cases journalists are greatly assisted by machines, which cannot replace commentary, research and very significant events (Graefe & Haim, 2016).

The Associated Press is one of the media pioneers in the use of robotic journalism. They were initially involved in funding research programs of automated news content production systems and, in 2014, they started using them (Beaujon, 2014; Sawers, 2016; Weber, 2014). In collaboration with the Automated Insights Company, they use Wordsmith news platform to produce automated news. They have their own algorithm, programmed to write in the style of the Associated Press. At the end of each report written by the algorithm, there is a related note that indicates it and makes it clear. The AP now makes extensive use of this system, which is able to produce about 4,400 reports a quarter. Thus, they cover a wide range of facts validly and quickly. They also cover sports events, such as all US baseball leagues, i.e., 142 teams in 13 divisions and 10,000 games per year. Because of their baseball coverage with automated journalistic content, the AP also announced that they hired their first automation editor in 2016 (Holmes, 2016; Mullin, 2016; Sawers, 2016; Triantafyllou, 2020).

Among the pioneers in the use of robotic journalism is the Washington Post. They make extensive use of algorithms in their online edition, especially in the coverage of important events, as was the case of the Rio Olympics, in August 2016, and the presidential elections of the USA, in November 2016. These two events were covered by the Washington Post with the help of the Heliograf algorithm that was manufactured by themselves (Albeanu, 2016d; Hare, 2016; Triantafyllou, 2020).

The use of an automated system can provide extremely high speeds in the coverage and publicity of events and this is one area in which machines can do better than humans, while also offering cost reduction (Anderson et al, 2014). Norwegian News Agency covers a lot of football games every weekend and the text of the game is published 30 seconds after the end of the match. In this way, the number of matches covered is constantly increasing, while the texts are well written, accurate and with rare errors, since the system never makes the same mistake twice and all this happens with the help of the algorithm and without human intervention (Albeanu 2016c; Triantafyllou, 2020).

The English newspaper The Telegraph, in its online edition, uses a form of automated content in order to generate an instant graphic called Roboblogger, which started with rugby and extended to football. It is an animated graphic created directly by feeding the algorithm with specific data for which, in fact, The Telegraph received €300,000 in funding from Google's European Digital News Initiative to experiment with and then use (Lichterman, 2016; Southern, 2016; Triantafyllou, 2020).

Bots<sup>4</sup> are also a part of robotic journalism, i.e., “intelligent” computer programs that provide news content and other services through chat with users generated by algorithms. There are two forms of bots, those guided only by a computer with algorithms without human intervention and those guided by both a human and a computer. With chat bots, as they are called, users can constantly access news and perform other actions, such as calling a taxi or finding food recipes. News bots, in particular, produce content either by automatic renewal through a social media account, every time they receive a new update (new news), or by answering user queries on specific topics. Facebook widely uses this innovative technology on Facebook Messenger platform, while bots are used by Skype, as well as by several media, such as CNN, The Wall Street Journal, The Economist, the BBC and The Guardian (Albeanu, 2018; Newman, 2017; Triantafyllou, 2020).

### *Artificial Intelligence*

Artificial intelligence, the use of which is now widespread in journalism, can be characterized as the evolution of robotic journalism, which in part, as we have mentioned, is based on artificial intelligence. With the help of artificial intelligence in addition to content production, there are now virtual news anchors on TV. This is a shocking development, which has created a new reality.

News organizations, such as China's Xinhua News Agency, have built such robot news anchors. Xinhua built and displayed, for the first time in April 2018, with the help of a computer, the simulation of one of the news anchors, an avatar, which has the same movements and speech as the journalist used. The similarity with the real journalist is such that, even in this case, one would hardly be able to tell the difference (Newman, 2019). In November 2018, the Chinese news agency Xinhua produced a second news anchor, this time a woman, and today they have increased their virtual news anchors. Xinhua has been experimenting with artificial intelligence for years. In 2017, they introduced a robot called Inspire that was working experimentally at the agency. This practice is now followed by several television stations and websites around the world (Triantafyllou, 2020).

Recently, artificial intelligence took a very big leap with the discovery of ChatGPT. ChatGPT (Generative Pre-trained Transformer) is a chatbot that was released by OpenAI, in November 2022, and seems to be changing the landscape with detailed answers, which are provided in

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<sup>4</sup> The word bot comes from robot.

many fields of knowledge, despite the fact that the application also provides incorrect answers. ChatGPT has already been tested on a huge body of text data and can perform a variety of natural language processing tasks, such as answering questions, translating languages and summarizing texts. It is designed to be highly flexible and capable of understanding and producing text in a wide range of styles and formats. It has been used in various applications, such as customer service chatbots, language translation and text-to-speech systems and it is expected to become a game-changer in journalism as well as in news content production.

According to WAN-IFRA (2023), generative AI is not a new technology. In fact, it has been used since 2014 in some form and as from November last year, OpenAI, the founder of ChatGPT, decided to release a test version of the chatbot for the public. It was admittedly a last resort for the company to see how users might interact with the tool after numerous setbacks over the previous year. Within five days of the release, ChatGPT already had 1 million users; after 100 days, 100 million – making it the fastest-growing consumer application ever, according to a number of sources (WAN-IFRA, 2023).

Some of the leading tech minds in the world and, most particularly, in the media have heralded Generative AI as THE next-generation technology. For publishers, it seemingly offers great potential for workflow efficiencies, text creation, correction, search/research, translation – things that most claim will free up journalists and editors in order to focus on producing core, quality content, but also improve along the way. Moreover, it offers opportunities in personalization but, on the contrary, Generative AI, particularly chatbots, present a number of questions, challenges and serious concerns. However, it is developing rapidly. Mistakes have already appeared. Essentially, the tools need to “learn” more and more, and they also need to be tested repeatedly – both by the creators behind the technology and those on the frontlines, like publishers experimenting with them. The prevention of the spreading of misinformation, data privacy, regulation –cases just like those, for example with social media, for which we continue to litigate– are even more at play with GenAI (WAN-IFRA, 2023).

According to a survey of WAN-IFRA<sup>5</sup>, which took place in 2022, 70% of the respondents recognizes artificial intelligence as a useful tool for journalists and newsrooms. 49% of the respondents of the survey says their newsrooms are already using tools like ChatGPT and 51% claims they do not do so, which is a clear indication of the fact that publishers view the technology as a very important component, since it came onto the scene in the latter half of 2022. On the other hand, it shows the caution that many newsrooms are demonstrating with such nascent, evolving (disruptive) tools that still entail many questions (and real concerns). Nevertheless, the quick adoption of this technology shows how the old aircraft carrier analogy of traditional news organizations adopting or recognizing critical trends has sped up significantly (WAN-IFRA, 2023).

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<sup>5</sup>See the full survey: <https://wan-ifra.org/insight/gauging-generative-ais-impact-in-newsrooms/>

According to the same survey, most newsrooms recognize the supportive role of Generative AI tools. The tools are considered an important way to increase productivity and efficiency in a number of processes. A number of newsrooms is already working with Generative AI to create summaries and bullet texts. One could argue that this function reflects both content creation (quality improvement) as well as workflow help (supportive). 39% of respondents sees the use of AI as such. 50% acclaims the purely supportive role of these tools for newsrooms. 8% considers them indeed a quality improvement.

Furthermore, with all the varied types of content, journalists and editors need to produce different platforms today. Text summaries/bullets seem a logical and practical use of tools like ChatGPT, as it can learn from a text a journalist wrote, as opposed to the riskier version of asking it to write a summary about “Joe Biden’s speech to the Congress,”. 54% of the survey participants is doing just that. More than 40% also uses it for simplified search/research, correcting texts and improving workflows (WAN-IFRA, 2023). While respondents rated text creation as the most useful role of GenAI tools (63%), newsrooms are clearly promising in the areas of workflow/efficiency, translation and personalization for further development – compared to the actual usage so far. 61% rated workflow/efficiency as an area where GenAI can help the most. In fact, 43% of the newsrooms already uses the tools for this purpose. While “translation” is considered valuable by 51%, only 32% says they have used tools in this domain so far. 42% sees potential in extra personalization, but only 19% in usage. For the highly rated text creation, 54% is already active in this area (WAN-IFRA, 2023).

### *Effects and risks*

However, the use of algorithms in journalism as well as in social media, which use them widely, and the use of artificial intelligence in general, is something that raises many questions as to the effects they may have. There are three main issues that need to be discussed: the professional, the moral and the political dimension; in addition there are issues that touch on democracy itself.

The involvement of Facebook, a widely used social network that uses an algorithm, in electoral processes, such as the 2016 US presidential elections and Brexit, as it emerged from the Cambridge Analytica scandal, has raised a huge question, concerning whether it can influence the vote of part of the electorate by the use of such systems. The Cambridge Analytica scandal showed that the danger is real and, in particular, that the danger for the democracy is becoming even greater. The scandal involving the data analysis company Cambridge Analytica has long been at the forefront of global news since March 2018. The company was accused of violating the personal data of millions of Facebook users in order to influence their final vote. A second key issue arising from the use of algorithms has to do with the loss of jobs and the exclusion of journalists from producing news content. It seems that until now in the media where these systems are used, their role is auxiliary and complementary to the work of journalists, who are free to do in-depth journalistic work; this could be the most optimistic view and development. The Washington Post makes extensive use of algorithms in their online edition and especially

in their coverage of major events, such as the 2016 Rio Olympics and the US presidential elections in the same year. The model implemented in the Olympics, in August 2016, had to do with the fact that the results and graphics were produced by their own Heliograf algorithm and in this way, as the newspaper officials reported, liberated journalists who had more time at their disposal to engage in reporting, research, interviews and in-depth coverage of the Games (Albeanu, 2016d).

The Rio Olympics served as a test event for The Washington Post concerning the coverage of the November 2016 US presidential elections, which, –along with the campaign period,– were covered for the first time in their history with automated content, using the same algorithm. The coverage was realized in a similar way as in the Olympics; the algorithm produced the graphs and figures of the polls and then the electoral contest in a continuous stream and in cooperation with the Associated Press and the journalists did the analysis and reporting (Hare, 2016). In the same way, the British news agency Press Association started using algorithms. On October 18, 2016, the launch of bots (automated content) was announced along with the fact that they would not replace journalists, but would cover statistics on sporting events and election contests (Ponsoford, 2016).

However, the latest developments, especially after the expansion of artificial intelligence in the media, are not auspicious. The German newspapers Die Welt and Bild, owned by Germany's largest publishing house, announced in the first months of 2023 large staff cuts due to the use of artificial intelligence. The two newspapers are set to replace several journalists with artificial intelligence systems and this is indicative of the great risk concerning jobs from using these systems.

So, it seems that algorithms can produce fast and reliable journalistic content, and one thing they can certainly do better than humans is produce large amounts of data at high speeds. However, traditional as well as new forms of media need journalists, because they can do something that machines can't. Journalists can research, report and analyze the facts in depth (Anderson et al., 2014; Lecompte, 2015).

On the other hand, of course, Van Dalen (2012) states that journalists are concerned about the use of automated content, because this can be a very good reason for media organizations to reduce labor costs by laying off journalists, who will no longer be needed. And, also, because it can deprive them of their usual journalistic duties (Clerwall, 2014). The predictions for the use of robots in the labor market, in general and not only in the media, are not favorable. Oxford University research reports that in the next two decades in the US, 47% of workers will lose their jobs due to the use of robots (Newman, 2017). Whether and to what extent these predictions will be verified is unknown, although beyond the predictions there are already the first examples of layoffs. In the summer of 2016, Sky News fired 50 employees (technicians, cameramen) from the studios, due to the fact that they started using robotic cameras (Karabini, 2017; Sky News, 2016).

The Confederation of European Trade Unions, in which the European Federation of Journalists (EFJ) also participates, adopted a resolution in June 2016, according to which reference was made to the use of robots at work. With this resolution, European unions called on the European Union to take measures and establish the necessary framework to avoid mass redundancies due to the digitization of work (EU must actively shape digitization, 2016).

A resolution on the impact of robotics on the labor market was also adopted by the European Parliament on February 16, 2017, according to which the European Commission was asked to consider the establishment of pan-European rules for the spread of robotics and artificial intelligence and the possibility of creating a European organization that will provide the necessary know-how and expertise in regulatory and ethical matters to support the relevant public bodies on the EU level (Robotics & Artificial Intelligence, 2017).

In addition to the work aspect, the ethical and political dimension of the use of algorithms enter the discussion. On March 8, 2017, experts from the European Federation of Journalists (EFJ) met in Brussels with robotic journalism expert Laurence Dierickx to discuss and learn about all dimensions of the use of algorithms in journalism. In this meeting, the ethical dimension of the use of robots in journalism was examined and it was mentioned that one of the issues that scientists and companies that use robot journalism do not take into account is the ethical one, that is, in articles produced by algorithms there is no mention that they are written by computers, which may cause confusion to the readers, while raising issues of liability, intellectual property and transparency (European Federation of Journalists, 2017).

Laurence Dierickx also said, at the meeting with EOD experts, that robotic journalism is a reality that is constantly evolving around the world and across the spectrum of journalism and gave the example of China, where robots are even replacing TV presenters. The expert in automated content production told EOD members that robotic journalism should not be seen as a threat for traditional journalism, as its use allows journalists to spend more time doing in-depth research. The two sides agreed on the need to train journalists in robot journalism and dialogue between journalists with scientists and companies that use algorithms, in order to have transparency and define a standard of ethics that will govern their use (European Federation of Journalists, 2017).

Another risk that emerges from the use of these systems is the changing role of the journalist and substitution. According to the WAN-IFRA survey, artificial intelligence has often been associated with replacing human jobs or tasks. In fact, 38% of the survey respondents claimed that job security was one of their major concerns. Most management staff and experts have argued that this will not be the case in the newsroom; however, the point on which most agree is that job roles and responsibilities will likely change with the increased use of GenAI. A full 82% said the roles will change slightly or significantly, while 45% said that they will change significantly. Only 14% assumed that the roles will not change. We have already seen that some publishers have introduced AI roles, but it is easy to imagine that roles concerning copying/editing/proofreading will change (WAN-IFRA, 2023).



Also, in the survey of WAN-IFRA, there has already been a number of cases reported, in which publishers used some form of artificial intelligence to produce content and the mistakes the tools made went unnoticed and were published or user-generated content went awry, i.e. hoaxes. So, it is not surprising that respondents overwhelmingly chose inaccuracies (85%) as their top concern. Plagiarism also was rated as a top concern followed by data protection and privacy issues, which is where, again, regulation will play a vital role. It is possible that the lack of clear guidelines will lead to uncertainty and potentially insufficient control. The development of clear policies, staff training and open communication around the responsible use of Generative AI tools should therefore be a priority (WAN-IFRA, 2023).

According to Reuters (2023, p. 32), the rapid growth of these “distributed” platforms in the first part of the twenty-first century was initially accompanied by excitement and enthusiasm, but over time it transformed into concerns about possible negative effects – first expressed by the speculative notion of “echo chambers”, some years later, “filter bubbles”, and, more recently, the spread of misinformation. To measure people’s attitudes towards algorithmic news selection, the survey of Reuters (2023)<sup>6</sup> asked respondents whether they agree that “having stories automatically selected for me on the basis of ‘what I have consumed in the past’ or ‘what my friends have consumed’ is a good way to get informed?”. To help interpret the results, we also asked respondents a similarly expressed question about news selected by editors and journalists. The headline results reveal that audiences are quite skeptical about all these ways of selecting news. Just 19% across all countries where these questions were posed agree that having stories automatically selected for them on the basis of what their friends have consumed is a good way to get informed, with 42% disagreeing. People have a more positive view of automatic selection based on past consumption, but just three in ten (30%) agree it’s a good way to get informed – with equal numbers disagreeing. Perhaps surprisingly, this is slightly more positive than people’s views of news selection by editors and journalists (27%). People are clearly quite skeptical of all forms of news selection, whether done by humans or by algorithms – something we have referred to in the past as “generalized skepticism” (Fletcher & Nielsen 2018). Part of the reason we refer to this skepticism as “generalized” is because people’s views on all these methods of news selection are fairly strongly correlated, meaning that people tend to have a similar view on all three. If someone thinks that editorial selection is a good way to get informed, they usually think the same about algorithmic selection – and vice versa. Journalists, academics, and industry observers, often with good reason, tend to see these selection methods as being contrary to one another – but it is important to recognize that audiences do not think about the issue in this way.

According to Reuters (2023, p. 33), if we compare these results to those from the same questions in 2016, we can see that people’s views on the issue have not changed much in the last seven years – at least at the headline level. Averaging the data across the same set of countries, we see there has been a 6 percentage point fall in the proportion that think their past consumption is a

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<sup>6</sup>Digital News Report 2023, <https://reutersinstitute.politics.ox.ac.uk/digital-news-report/2023>

good basis for automated news selection, and a smaller 3pp fall in the approval of editorial selection and social recommendations. It is important to note that the proportion which does not think these are good ways to get informed has remained stable, with 4–6pp increases in the middle “neither agree nor disagree” category. This suggests that approval has turned into ambivalence – but ultimately these are small changes, especially considering the seven-year gap and everything that has happened in between. As ever these averages mask variation at the country level. The report shows that the UK, Denmark, and Hungary have the lowest levels of approval for both types of algorithmic news selection, whereas in Spain, South Korea, and Brazil approval is almost twice as high. Although it’s not immediately clear, there is a small number of high-trust, newspaper-centric countries in Northern and Western Europe –such as Austria (33%), Sweden (30%) and the Netherlands (34%)– where the figures for editorial selection, though still low, are slightly higher than those for both types of algorithmic selection. Australia is something of an outlier, as it is the only country where approval has risen across the board. In some countries, such as Canada, Brazil and the UK, the changes from 2016 are relatively large – especially for news selected by algorithms on the basis of past consumption. However, although the downward trends are fairly consistent, in many cases the falls are of 3pp or less and not statistically significant. And we must always bear in mind that in most cases approval has been replaced with ambivalence.

## **Conclusions**

The developments in the production of news content without human mediation are rapid. The steps that have been taken in recent years are very important and this is the purpose of this article, to record these developments, and, at the same time, to record the positive and negative effects of the production of news content without human mediation.

The ways in which this production is effected are the so-called robotic journalism or algorithmic journalism or the production of automated news content. This way of producing news content should be divided into the first form, in which the journalist enters structured information and the algorithm produces the article based on a template, and the second form, in which, using natural language processing (NLP), the article is algorithmically produced from unstructured information. News generating software usually uses predefined phrases to generate the news. In recent years, the production of news content without human intervention has evolved considerably with the use of artificial intelligence, which is now widely used in the news industry. With the help of artificial intelligence in addition to content production, there are now virtual news anchors on TV. This is a shocking development, which has created a new reality in the media. This new situation obviously creates a new landscape with positive and negative effects.

The use of algorithms in journalism, but also in social media, in which they are widely used, and the use of artificial intelligence in general, is something that raises many questions as to the effects they may have. There are three main issues that need to be discussed: the role of

algorithms and artificial intelligence, the labor issue of job losses that are at great risk, the ethical issue of being clear about who is producing the content and the political dimension, in which questions concerning democracy itself are raised. Another risk that emerges from the use of these systems is the change of the role of the journalist and his replacement, which is part of the labor issues, but is broader, since the change of the role of the journalist in the production of news content entails risks in terms of the manufactured product. Finally, society's acceptance of these news content production systems is no longer as great as it once was, when they first started and became widely known.

## References

- Albeanu, C. (2016a). *NRS: More than 70% of The Independent's UK audience reads the title only on mobile*. Retrieved from: <https://www.journalism.co.uk/news/nrs-more-than-70-of-the-independent-s-uk-audience-reads-the-title-only-on-mobile/s2/a667557/>.
- Albeanu, C. (2016b). *Around two thirds of Independent's UK readers access it only from mobile*. Retrieved from: <https://www.journalism.co.uk/news/around-two-thirds-of-independent-readers-in-the-uk-access-the-title-only-from-their-mobile-devices/s2/a613542/>.
- Albeanu, C. (2016c). *Norwegian News Agency is betting on automation for football coverage*. Retrieved from: <https://www.journalism.co.uk/news/norwegian-news-agency-is-betting-on-automation-for-football-coverage/s2/a647189/>.
- Albeanu, C. (2016d). *The Washington Post rolls out automation for the Olympic Games, gearing up for US election coverage*. Retrieved from: <https://www.journalism.co.uk/news/the-washington-post-rolls-out-automation-for-the-rio-olympic-games-gearing-up-for-us-election-coverage/s2/a665769/>.
- Albeanu, C. (2018). *From social media to in-story experiences, chat bots help the BBC 'do things faster and at scale*. Retrieved from: [https://www.journalism.co.uk/news/from-social-media-to-in-story-experiences-chat-bots-help-the-bbc-do-things-at-scale-and-faster-/s2/a722596/?utm\\_source=Pew%20Research%20Center](https://www.journalism.co.uk/news/from-social-media-to-in-story-experiences-chat-bots-help-the-bbc-do-things-at-scale-and-faster-/s2/a722596/?utm_source=Pew%20Research%20Center).
- Anderson, C. W. & Bell, E., & Shirky, C. (2014). *Post Industrial Journalism: Adapting to the Present*. Retrieved from: [towcenter.org/research/post-industrial-journalism-adapting-to-the-present-2/](http://towcenter.org/research/post-industrial-journalism-adapting-to-the-present-2/)
- Beaujon, A. (2014). *AP's robot-written stories have arrived*. Retrieved from: <http://www.poynter.org/2014/aps-robot-written-stories-have-arrived/259602/>
- Brenen, S. & Nielsen, R.(2018) *An Industry-Led Debate: How UK Media Cover Artificial Intelligence*. Retrieved from: <https://reutersinstitute.politics.ox.ac.uk/our-research/industry-led-debate-how-uk-media-cover-artificial-intelligence>
- Clerwall, C. (2014). *Enter Robot Journalism*, *Journalism Practice* 8 (5), 519-531. Retrieved from: <http://www.tandfonline.com/doi/full/10.1080/17512786.2014.883116>
- European Federation of Journalists (2017) *The ethical aspect of «robot» journalism* Retrieved from: <http://europeanjournalists.org/blog/2017/03/09/the-ethical-aspect-of-robot-journalism/>
- Fletcher, R., & Nielsen, R. K. (2018). 'Generalised Scepticism: How People Navigate News on Social Media', *Information, Communication & Society* 22(12), 1751–69. <https://doi.org/10.1080/1369118X.2018.1450887>
- Foy, P (2022). *What is Generative AI? Key Concepts & Use Cases*. Retrieved from: <https://www.mlq.ai/what-is-generative-ai/>
- Fulton, K. (1996). 'A Tour of our Uncertain Future'. *Columbia Journalism Review*, 34/6: 19–26

- Graefe, A. & Haip, M. (2016). *Human Or Computer? Whose Stories Do Readers Prefer?* Retrieved from: <http://en.ejo.ch/digital-news/human-computer-stories-readers-prefer>
- Gunter, B. (2003). *News and the Net*, New Jersey. London: Lawrence Erlbaum Associates Publishers
- Holmes, J. (2016). *AI is already making inroads into journalism but could it win a Pulitzer?* Retrieved from: <https://www.theguardian.com/media/2016/apr/03/artificial-intelligence-robot-reporter-pulitzer-prize>
- Karabini, T. (2017) *The layoffs of workers and their replacement with robots have begun.* Retrieved from: <http://www.fortunegreece.com/article/xekinisan-i-apolisis-ergazomenon-ke-i-antikatastasi-tous-me-rompot/>
- Leandros, N. (2005). *The Internet. Development and change.* Athens: Kastaniotis.
- Leandros, N. (2011). *The International Media System in Transition. A Human Development Perspective.* Retrieved from: <http://www.newmedia21.eu/analizi/the-international-media-system-in-transition-a-human-development-perspective/>
- Leandros, N. (2012). *Financial crisis and modern development. The perspective of political economy.* Athens: Dionikos.
- Lecompte, C. (2015). *Automation in the Newsroom.* Retrieved from: <http://niemanreports.org/articles/automation-in-the-newsroom/>
- Lichterman, J. (2016) *The Telegraph is trying to streamline soccer live blogging with an automated graphic system.* Retrieved from: [http://www.niemanlab.org/2016/06/the-telegraph-is-trying-to-streamline-soccer-live-blogging-with-an-automated-graphic-system/?utm\\_source=Daily+Lab+email+list&utm\\_campaign=89707ce8a7-dailylabemail3&utm\\_medium=email&utm\\_term=0\\_d68264fd5e-89707ce8a7-396017077](http://www.niemanlab.org/2016/06/the-telegraph-is-trying-to-streamline-soccer-live-blogging-with-an-automated-graphic-system/?utm_source=Daily+Lab+email+list&utm_campaign=89707ce8a7-dailylabemail3&utm_medium=email&utm_term=0_d68264fd5e-89707ce8a7-396017077).
- Mitrou, L (2023) Some introductory thoughts. In Mitrou L. *Can algorithm be moral, fair, transparent, to judge and to command*, p.p. 9-34 Creta: Panepistimiakes ekdoseis Critis.
- Mullin, B. (2016). *The Associated Press will use automated writing to cover the minor leagues.* Retrieved from: <http://www.poynter.org/2016/the-associated-press-will-use-automated-writing-to-cover-the-minor-leagues/419489/>
- Newman, N. (2017). *Journalism, media and technology trends and predictions 2017.* Retrieved from: <http://reutersinstitute.politics.ox.ac.uk/sites/default/files/Journalism%20C%20Media%20and%20Technology%20Trends%20and%20Predictions%202017.pdf>
- Örnebring, H. (2009). *The Two Professionalisms of Journalism: Journalism and the changing context of work.* Retrieved from: [https://reutersinstitute.politics.ox.ac.uk/sites/default/files/2017-11/The%20Two%20Professionalisms%20of%20Journalism\\_Working%20Paper.pdf](https://reutersinstitute.politics.ox.ac.uk/sites/default/files/2017-11/The%20Two%20Professionalisms%20of%20Journalism_Working%20Paper.pdf)
- Picard, P. (2015). *Journalists ' Perceptions of the Future of Journalistic Work.* Retrieved from: <https://reutersinstitute.politics.ox.ac.uk/sites/default/files/2017-11/Journalists%27%20Perceptions%20of%20the%20Future%20of%20Journalistic%20Work.pdf>
- Ponsford, D. (2016). *Press Association set to use 'robot' reporters across business, sport and elections coverage.* Retrieved from: [http://www.pressgazette.co.uk/press-association-set-to-use-robot-reporters-across-business-sport-and-elections-coverage/?utm\\_source=Daily+Lab+email+list&utm\\_campaign=caffe2f986-dailylabemail3&utm\\_medium=email&utm\\_term=0\\_d68264fd5e-caffe2f986-396017077](http://www.pressgazette.co.uk/press-association-set-to-use-robot-reporters-across-business-sport-and-elections-coverage/?utm_source=Daily+Lab+email+list&utm_campaign=caffe2f986-dailylabemail3&utm_medium=email&utm_term=0_d68264fd5e-caffe2f986-396017077)
- Reuters Institute for the study of Journalism (2023). *Digital News Report.* Retrieved from: <https://reutersinstitute.politics.ox.ac.uk/digital-news-report/2023>
- Robotics and artificial intelligence: EP calls for EU-wide rules (2017). Retrieved from: <http://www.europarl.europa.eu/news/en/press-room/20170110IPR57613/robots-legal-affairs-committee-calls-for-eu-wide-rules>

- Rottwilm, P. (2014). *The Future of Journalistic Work: Its Changing Nature and Implications*. Retrieved from: <https://reutersinstitute.politics.ox.ac.uk/sites/default/files/research/files/The%2520Future%2520of%2520Journalistic%2520Work%2520-%2520Its%2520Changing%2520Nature%2520and%2520Implications.pdf>
- Sawers, P. (2016). *Associated Press expands sports coverage with stories written by machines*. Retrieved from: <http://venturebeat.com/2016/07/01/associated-press-expands-sports-coverage-with-stories-written-by-machines/>
- Singer, J. B. (1998). 'Online Journalists: Foundations for Research into their Changing Roles'. *Journal of Computer Mediated Communication*, 4/1, DOI: 10.1111/j.1083-6101.1998.tb00088.x.
- Sky News and Sky Sports to axe about 50 roles in automation push* (2016). Retrieved from: <https://www.theguardian.com/media/2016/jul/07/sky-news-sky-sports-automation-robot-cameras>
- Southern, L. (2016). *The Telegraph built a tool that auto-creates graphics of Premier League goal*. Retrieved from: <http://digiday.com/publishers/telegraph-built-tool-auto-creates-graphics-premier-league-goals/>
- Triantafyllou, S. (2020). *Media and journalism in transition. The changing working conditions of journalists in the digital age*. Salonika: Disigma publications.
- Triantafyllou, S. (2020). *The changing working conditions of journalists in the digital age. The Greek case*. Doctoral Thesis, Panteion University
- Van Dalen, A. (2012) The Algorithms behind the Headlines, *Journalism Practice* 6 (5 –6), 648–658
- Veglis, A. (2015). The media crisis: New media and new tools for creating, distributing and consuming news. *2nd PSAT Summer School, Ancient Olympia*, October 1-4, 2015
- WAN-IFRA. (2023). *Gauging Generative AI's Impact in Newsrooms*. Retrieved from: <https://wan-ifra.org/insight/gauging-generative-ais-impact-in-newsrooms/>
- Weber, H. (2014). *Associated Press backs Automated Insights to automate boring earnings reports*. Retrieved from: <http://venturebeat.com/2014/06/30/associated-press-backs-automated-insights-to-automate-boring-earnings-reports/>

## The impact of COVID-19 pandemic on the spread of Mobile Journalism within the professional journalists

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### Abstract

This study looks at how the COVID-19 pandemic has affected mobile journalism among Greek professionals, emphasizing how the crisis has accelerated the adoption and integration of mobile technologies in journalism. The research utilizes a mixed-methodology approach, combining an online survey and a case study to examine how mobile devices have become pivotal in news production and distribution during the pandemic and thereafter. The survey, focusing on the period since the COVID-19 outbreak, assesses changes in technology usage, the adoption of mobile journalism tools, and the acquisition of new technological skills. Initial feedback is requested from domain experts on a prototype mobile journalism application. The results highlight its potential to facilitate efficient content management and distribution, particularly in crisis situations, thus enhancing the overall journalistic practices. The findings demonstrate its ability to support effective news dissemination and content management, improving the evolving landscape of digital journalism, especially in the face of global crises.

**Keywords:** Mobile Journalism, Digital Journalism, COVID-19, mobile application, mixed methodology.

### Introduction

The use of mobile devices (smartphones, tablets) is no longer considered as a novelty in the field of journalism. The term *Mobile Journalism* (also known as MoJo) refers to the newer and evolving journalistic practice in which journalists (either professionals or amateurs/ citizens) use exclusively their mobile devices to create and share news stories (Rodrigues, Baldi & Gala, 2021; Sidiropoulos, Vryzas, Vrysis, Avraam & Dimoulas, 2019). According to Westlund (2013), mobile news started as a new trend in the '90s and they have played a critical role in everyday life ever since, especially at moments of crisis situations (e.g., natural disasters, terrorist attacks, political, economic, environmental and/or health crises). Its unique capabilities and adjustability, made Mobile journalism a notable paradigm among media and communication practitioners, that performs better during emergency incidences and challenging circumstances.

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This research aims to reveal how the COVID-19 pandemic has affected the spread of Mobile journalism among the community of journalists. For a more comprehensive analysis, the research is divided in two axes. The first axis examines the extent to which mobile devices have become the primary tools for creating and sharing news' content, affecting the current journalistic practices in general. The research conducted indicates that Mobile journalism has become widely prevalent among journalists, however it requires advanced technology skills in order to produce quality content. The second axis is assessing the changes made on media logic and the overall approach of creating and publishing news and stories, due to the pandemic. Latest research findings demonstrate a significant increase in the use of mobile devices for communication and information dissemination, even since the COVID-19 outbreak.

The goal of this research is to analyze the two abovementioned axes following a systematic methodology, with the aim of elucidating the relationship between COVID-19 and the preferred journalistic practices during this period, as well as the underlying factors influencing these choices. For this reason, we recommend a mixed methodology, incorporating quantitative and qualitative research, namely online surveys and case studies respectively. Preliminary findings, driven by the feedback received from experts in the field, are documented alongside representative original screenshots from an application tailored to mobile journalists.

## **Background and related work**

### *Mobile transformation in journalism*

The research of Murphy (2019), shows that there has been a shift in the role of professional journalists, while at the same time a significant increase in the use of digital, online and mobile tools has been observed. In the same context, the research of Bui and Moran (2020) examines how journalism schools have responded to the wide use of mobile technologies for news gathering and dissemination, by adapting their programs to the increased demand for technical skills and infrastructure in order to succeed in the successful implementation of mobile journalism within their educational framework. According to Perreault & Stanfield (2019), the spread of mobile journalism maintains important effects on the everyday labor practices of the new generation's journalists, who need to be equipped with skills and knowledge necessary to follow the evolution and progress of mobility in their profession. The three studies agree that mobile journalism has become a common practice in the field of media and communication and they emphasize the importance of cultivating the necessary skills and background required by contemporary journalism.

### *COVID-19 impact on mobile journalism*

COVID-19 has undoubtedly brought changes in journalistic practices and shaped new patterns and media coverage maps (Kostarella & Kotsakis, 2022). Several studies have been made in order to examine how crisis situations affect the way in which news are produced and spread and a special focus has been given on the COVID-19 pandemic. A quantitative study conducted by Khairy (2020) reveals that news audience prefers stories with short titles that have short and

concise text and are supported by multimedia content. This fact encourages mobile journalism and promotes audience participation and crowdsourcing. Accordingly, the results of Geçer, Yıldırım & Akgül, (2020) show that during the pandemic the use of mobile devices, internet and social media was extensively spread due to the fact that they allow for continuous and seamless information retrieval and news consumption. The study is complementary with the ones of Sidorenko-Bautista, de la Casa & de Julián (2020) and Pavlik (2021), which identify new ways of storytelling during the pandemic. According to them, the lockdowns have led us to an era where vertical, multimedia storytelling employs new tools and technologies and adapts to the requirements of mobile news production and consumption, offering brief and engaging content, to reach broader audiences. Extensive research in several fields has been also reported in the book of Xu (2022). More specifically, in this research, Xu highlights the importance of mobile technologies in journalism and media coverage for communication and information sharing. In addition, Bernadas and Ilagan (2020) state that journalists faced difficulties in accessing sources of information mainly due to mobility restrictions and limited provision of services from public and private organizations. To overcome such challenges, digital storytelling and mobile journalism became the norm for them, allowing remote work even from home, despite the fact that such practices impose ethical and credibility issues.

In sum, the articles examined were primary quantitative studies using questionnaires with open and closed questions and Likert scales, personal interviews with stakeholders, and thematic analysis of written and digital texts. The two main findings that emerged are as follows: (a) digital and mobile journalism have penetrated traditional journalistic practices by providing direct, quick, engaging and reachable text-based as well as audio-visual content; (b) since the beginning of COVID-19 outburst, mobile devices have been adopted as the means for information and communication, due to their ease of use, applicability, immediacy and wide coverage provided by such technologies. To this end, the hypotheses that have been formulated are based on the fact that journalists have familiarized themselves with modern mobile devices and the use of dedicated digital tools/services for content creation, management and retrieval as well as for remote working during the COVID-19 pandemic. The corresponding research questions (RQ) that emerge are:

RQ1: To what degree and up to which extend has the use of mobile devices changed during the pandemic in the field of journalism?

RQ2: Could the use of dedicated tools and services, specifically designed for mobile devices, improve content management and remote working for mobile journalists during the pandemic, and up to what extend?

### **Suggested Methodology**

In such a dynamically changing reality such as the COVID-19 pandemic, the fact that any piece of information can influence and alter the behavior of millions of people, and correspondingly protect their lives, suggests that mobile journalism could provide solutions for timely



information and news dissemination. Moreover, in their article related to content collection and publication during crisis periods, Sidiropoulos et al. (2019) confirm that journalists extensively use their mobile phones to record events. In the same vein, Newman & Reid (2018) highlight the growing demand for skills in mobile journalism in the job market, a development that broadly impacts the journalistic culture as we knew it until recently. In order to answer the formed RQs, we have designed a mixed methodology that combines both quantitative and qualitative characteristics, based on the research that has been conducted so far.

#### *Quantitative – online survey*

A survey is formulated, containing closed-ended and Likert-scale questions (1=totally disagree, 5=totally agree) referring only to the period since the COVID-19 outburst up to now, in Greece. The population (N participants in total) of the survey is defined as the combination of (a) professional journalists and reporters, (b) registered university/college media and journalism students and (c) professors, teachers and educators in the schools of media and journalism. The survey is designed to be executed in Greek, without excluding people of other nationalities, as long as they are Greek citizens. It also contains questions in a semantic differential scale in order to compare the pre- and post- lockdown situations. The main objectives of this survey are:

1. To explore how COVID-19 has influenced the use of mobile devices among journalists, students, and educators in media and journalism.
2. To understand the extent to which mobile devices and associated tools have penetrated the field of journalism.
3. To identify skills, existing gaps and future needs in technology and mobile journalism training/education.

#### *Qualitative – Case study*

In order to further increase the internal validity of the research methodology, carrying out a case study is considered beneficial. Besides, adapting to the study of Gardikiotis, Malinaki, Charisiadis-Tsitlakidis, et al. (2021), users must be able to pay attention to what they are about to evaluate and get to actually know it, not only be given a message to evaluate. For this reason, a random sample of M participants is selected from the three distinct groups ( $M < N$ , where N is the initial number of survey participants, as stated in 3.1). The participants are presented a prototype mobile journalism application containing several mock-ups that form a real usage scenario. A structured interview follows, which upon completion of this case study, the findings from the initial survey are expected to be confirmed, thereby further enhancing the validity of the research methodology.

## **Suggested implementation**

### *Online survey formation*

This survey is aimed at journalists, media and journalism students and educators. The questionnaire aims to assess changes in technology usage with a special focus on mobile devices, examining how mobile tools and services have been incorporated into journalistic practices during the pandemic. The findings from this study will become a valuable tool for understanding and influencing the future of journalism and help shape practices and educational approaches, in a post pandemic era. The questions of the survey are divided into five (5) large categories as shown below.

1. Personal, demographic questions
  - a. Correspondent group (A, B, C)
  - b. Age group
  - c. Nationality
  - d. Sex
2. Behavioral questions
  - a. Use of smart mobile devices in general and during the pandemic
  - b. Use of smart mobile devices for content creation and sharing
  - c. Use of dedicated tools and/or services for mobile devices
3. Attitudinal questions
  - a. Spread of smart mobile devices
  - b. Penetration of technology and digitization in the fields of journalism and reporting
  - c. Spread of mobile journalism in general and during the pandemic
  - d. Existence of dedicated tools/services for mobile journalism
4. Belief questions
  - a. Impact of the pandemic on the information dissemination
  - b. Impact of the pandemic on content creation, management and sharing
  - c. Use of dedicated tools in mobile journalism
  - d. Challenges imposed by mobile journalism
5. Knowledge questions
  - a. Technological skills and background in general
  - b. Technological skills and background related to journalism
  - c. Technological skills and background obtained during the pandemic
  - d. Technological skills and background missing or wish to obtain soon

Piloting the survey with a small sample (N=3) of the population of each group before conducting the full-scale survey is considered a crucial step for a first assessment of the tool, in order to identify potential ambiguities and ensure understandability. To evaluate research consistency, the split-half method is selected, which allows for the correlations and

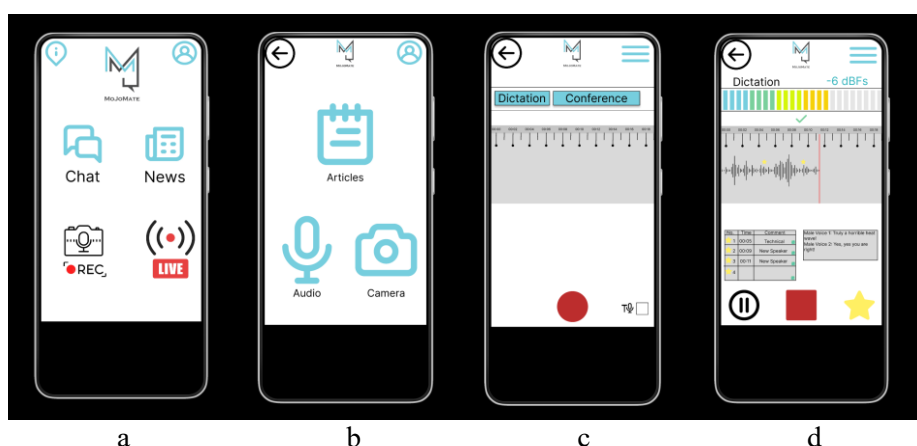
homogeneity analysis across responses of same scale questions. Besides, since the survey employs 5-point Likert scales, reliability will be rigorously assessed using Cronbach's alpha coefficient. Furthermore, given the fact that the suggested methodology could be generalized to populations other than Greek, ensures its external validity.

### *Mock-up design and prototype mobile application*

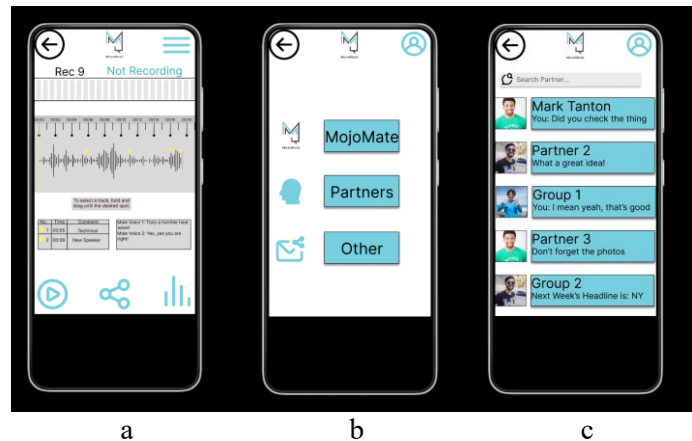
The aim of this approach is to provide a comprehensive perspective on the capabilities that a mobile journalism application could offer to its users. The next step comprises a structured online interview during which participants are asked to evaluate the proposed application based on the following criteria: a) understandability, b) usability, c) navigation quality, d) utility, e) suitability, f) necessity, and g) overall user experience. Assessing the extent to which they would use the proposed application during crises and breaking news situations, as well as part of their professional routine, both independently and in combination with existing tools/services is also part of the interview process. Finally, a set of open-ended questions allow for suggestions for further extensions and additional functionality to the proposed application.

Some of the mockups of the proposed mobile application are presented in Figures 1-3. For the design of the prototype application the Figma online design tool has been utilized.

It is noteworthy to say that the main user requirements, depicted in the proposed functionality of the application, have been extracted after market research, which revealed the benchmark applications used by professionals and the core features they employ in order to facilitate a mobile journalist's routine in content creation and management. Apart from being able to capture and edit audio, video and images (in pre-selected set-ups), the users encourage a collaboration environment which allows information exchange with their partners. Content tagging and/or annotation is also considered as an important feature which allows faster and easier search and retrieval of content within large data volumes.

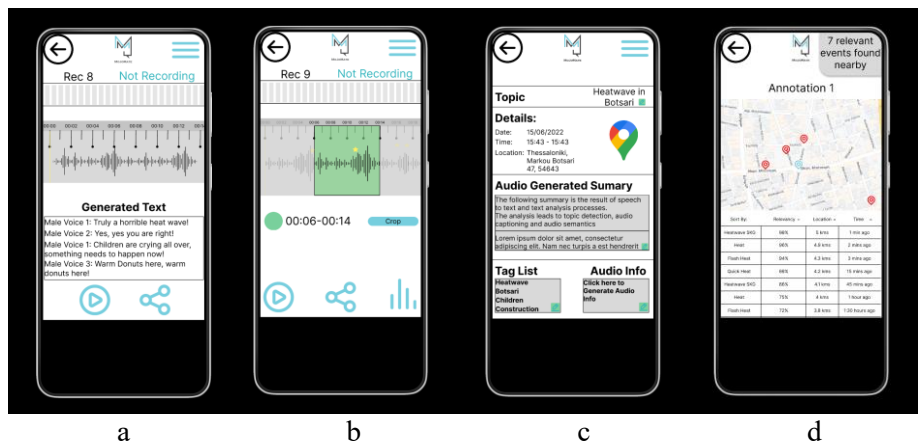


**Figure 16:** (a) First screen of the application, showing the options for creating news content, (b) given options once the user selects to create content (REC), (c) the audio-capturing screen, with two options to activate: dictation or conference, (d) the audio recording screen with Dictation option activated. The user is able to add marks (tags) and notes



**Figure 17:** (a) recording screen with option to share content, (b) different sharing options, (c) sharing options within partners

Efficient AI-driven algorithms running in the back-end of the application, provide users with automations that further enhance their overall experience. Automated title extraction, summarization (text of audio-driven) and tagging give a fast overview of selected content file. The application identifies similar and nearby events based on contextual and geo-spatial information (meta-data).

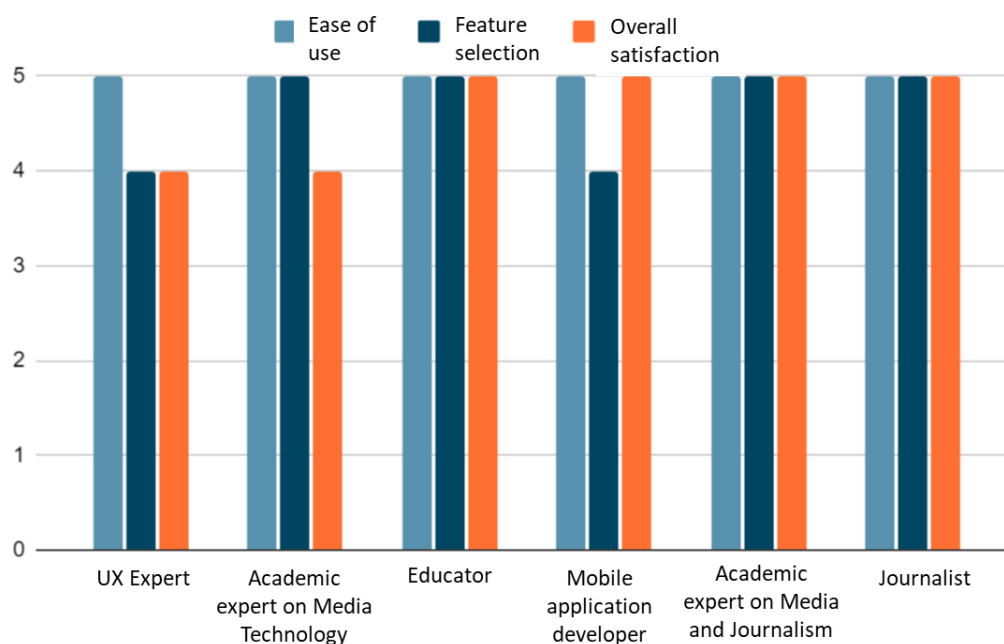


**Figure 18:** (a) Once dictation is finished the application provides the generated text, (b) option to extract a specific part of the recorded audio, (c) identified topic and information regarding the captured audio along with auto-generated summary and tag list, (d) relevant (by topic) nearby events

## Discussion

The application prototype was presented to five (5) representative experts, namely a User Experience (UX) expert, an Academic expert on Media Technology, a mobile application developer, an Academic expert on Media and Journalism, a journalist and an educator. The

initial feedback from them has underscored the application's relevance and potential utility in enhancing the capabilities of journalists and media professionals. Figure 4 shows an overview of the initial evaluation results.



**Figure 19:** Initial evaluation results from 5 experts in related fields

During further discussion with the experts, the benefits of a mobile application dedicated to mobile journalists was assessed along with its role in remote working in times of crisis like the one during COVID-19, when mobility was restricted and breaking news needed to spread fast. Their feedback suggests that such an application could significantly streamline content creation and dissemination, processes that are vital during crises situations when timely and reliable information is of paramount importance. The experts highlighted strengths in the design and its potential for real-time news updates, while also pointing out areas for improvement such as enhanced security features and more robust support for multimedia content.

Given the two primary research questions outlined in the first chapter, the research addresses them through its methodological approach and analysis as follows. As for RQ1, the research employs quantitative analysis targeting specific groups of potential stakeholders and addressing the way, extend and frequency in which they use mobile devices. The survey is formulated and once the results are gathered and analyzed, any change (increase/decrease, shift) will be monitored and statistical evidence will be provided. As for RQ2, part of the online survey and the subsequent case study will set the basis of the evaluation of tools and services aimed for mobile journalism. The feedback that will be collected will be complementary to the findings of the survey and will allow for a clearer understanding of the current landscape.

## Conclusion and Recommendations

COVID-19 resulted in substantial changes in news sharing, reporting and communication. This outbreak also led to fast tracking of digital journalism. Lockdowns and social distancing caused a significant rise in the use of social media platforms and other online sites and for sharing information. This shift made mobile journalism more popular. Reporters and ordinary individuals started using smartphones more frequently to capture events and post news immediately. Nevertheless, the pandemic also had downsides such vast amounts of data leading to confusion or disinformation, hence credible and trustworthy news should be delivered fast enough and mobile journalism can be the means to achieve this, given that dedicated applications are used incorporating intelligent features and automations.

The methodological approach of the suggested study —employing both quantitative and qualitative insights— aims to provide a comprehensive view of the impact of mobile technologies on journalism, since the beginning of the COVID-19 pandemic, up to now. This dual approach not only enriches the data but also aligns with contemporary research methodologies that favor mixed-methods for their depth and breadth of analysis. The implications of this research have greater impact than academia, since it can be applied to actual and practical fields, where journalists (professionals, amateurs, students) can leverage the findings to shape the future of a journalism landscape more adaptive to changes and crises.

As a next step of the current study, the survey will be administered to a broad audience to get actual responses. The collected feedback will be put together to feed new requirements for the final app. This will assist in verifying first discoveries as well as strengthening the place of the application in improving journalism after an epidemic.

## References

- Bernadas, J. M. A. C., & Ilagan, K. (2020). Journalism, public health, and COVID-19: some preliminary insights from the Philippines. *Media International Australia*, 177(1), 132-138. doi: <https://doi.org/10.1177/1329878X20953854>.
- Bui, M. N., & Moran, R. E. (2020). Making the 21st century mobile journalist: Examining definitions and conceptualizations of mobility and mobile journalism within journalism education. *Digital Journalism*, 8(1), 145-163. doi: <https://doi.org/10.1080/21670811.2019.1664926>.
- Gardikiotis, A., Malinaki, E., Charisiadis-Tsitlakidis, C., Protonotariou, A., Archontis, S., Lampropoulou, A., ... Zafeiriou, G. (2021). Emotional and Cognitive Responses to COVID-19 Information Overload under Lockdown Predict Media Attention and Risk Perceptions of COVID-19. *Journal of Health Communication*, 26(6), 434-442. <https://doi.org/10.1080/10810730.2021.1949649>.
- Geçer, E., Yıldırım, M., & Akgül, Ö. (2020). Sources of information in times of health crisis: evidence from Turkey during COVID-19. *Journal of Public Health*, 1-7. doi: <https://doi.org/10.1007/s10389-020-01393-x>.

- Khairy, L. (2020, February 6). Applying the Four Models of Science Journalism to the Publics' Interaction with Coronavirus News. *Arab Media & Society*, Accessed on 20<sup>th</sup> November 2020, από <https://www.arabmediasociety.com/>.
- Kostarella, I., & Kotsakis, R. (2022). The Effects of the COVID-19 “Infodemic” on Journalistic Content and News Feed in Online and Offline Communication Spaces. *Journalism and Media*, 3(3), 471-490.
- Murphy, C. (2019). Changing by the Click: The Professional Development of UK Journalists. *Education Sciences*, 9(4), 249. doi: <https://doi.org/10.3390/educsci9040249>.
- Newman, N., & Reid, A. M. R. (2018). Journalism, media and technology trends and predictions 2018, *Reuters Institute for the Study of Journalism*, (pp. 1–50). Accessed on 5<sup>th</sup> December 2020 από <https://reutersinstitute.politics.ox.ac.uk/our-research/journalism-media-and-technology-trends-and-predictions-2018>.
- Pavlik, J. V. (2021). Engaging journalism: News in the time of the COVID-19 pandemic. *SEARCH Journal of Media and Communication Research*, 13(1), 1-17.
- Perreault, G., & Stanfield, K. (2019). Mobile Journalism as Lifestyle Journalism? Field Theory in the integration of mobile in the newsroom and mobile journalist role 18 conception. *Journalism Practice*, 13(3), 331-348. doi: <https://doi.org/10.1080/17512786.2018.1424021>.
- Rodrigues, L. P. R., Baldi, V., & Gala, A. D. C. O. S. (2021). MOBILE JOURNALISM: the emergence of a new field of journalism. *Brazilian journalism research*, 17(2), 280-305.
- Sidiropoulos, E., Vryzas, N., Vrysis, L., Avraam, E., & Dimoulas, C. (2019). Growing Media Skills and Know-How in Situ: Technology-Enhanced Practices and Collaborative Support in Mobile News-Reporting. *Education Sciences*, 9(3), 173. doi: <https://doi.org/10.3390/educsci9030173>.
- Sidorenko-Bautista, P., Herranz de la Casa, J. M., & Cantero de Julián, J. I. (2020). Use of New Narratives for COVID-19 Reporting: From 360° Videos to Ephemeral TikTok Videos in Online Media. *Tripodos*, 47(1), 105-122.
- Westlund, O. (2013) ‘MOBILE NEWS: A review and model of journalism in an age of mobile media’, *Digital Journalism*, 1(1), pp. 6–26. doi: <https://doi.org/10.1080/21670811.2012.740273>.
- Xu, X., (2022) *Coping with COVID-19, the Mobile Way. Experience and Expertise from China*. Springer.

# Artificial intelligence in journalism: Practices, challenges and regulatory framework

Theodora Saridou\*

## Abstract

In recent years, computational advancements combined with social and economic shifts have facilitated the integration of artificial intelligence (AI) technologies in a remarkably wide range of fields. The field of journalism is not unaffected by the explosive growth of AI tools and systems. News organizations worldwide are using AI techniques to carry out tasks throughout the news production process. Automated approaches are applied, for example, in journalistic research, editing or monitoring of audience participation. However, reshaping the way of working is challenging in the light of the risks involved and the serious issues that arise. This paper explores how media organizations utilize AI, especially for managing user-generated content, and delves into pressing issues such as data protection, fairness, and human rights. It also assesses the emerging regulatory landscape surrounding AI in journalism. Despite the benefits to news production, navigating complexities requires careful consideration of the associated challenges and ethical implications.

**Keywords:** Artificial intelligence, participatory journalism, moderation, ethics.

## Introduction

The intersection of audience participation and journalism has long been a dynamic space, where the influx of user-generated content (UGC) has transformed traditional journalistic practices, such as gatekeeping and framing. Citizens can participate in journalism (Engelke, 2019; Krumsvik, 2018; Loosen et al., 2022) and contribute to the news production by professional journalists on a mainstream platform (Abott, 2017). At the same time, content generated by users outside the media organization's platform is acquired and used by professional media (Saridou & Veglis, 2021).

This evolution, while enriching the news landscape with diverse perspectives, also presents a host of complex legal and ethical dilemmas. As Saridou et al. (2019) noted, the coexistence of amateur and professional content often poses threats on accountability and authenticity, challenging the very essence of journalistic integrity. To mitigate and manage these issues, media organizations employ moderation techniques enabling them to organize, monitor, and authenticate content (Boberg et al., 2018; Wolfgang, 2016). However, manual moderation is a time-intensive duty for professionals, who must handle substantial content volumes amidst time constraints; a process which requires significant human and financial investment (Wang, 2020).

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Consequently, many media entities adopt automated methods and artificial intelligence (AI) techniques to figure this task out or integrate semi-automated approaches incorporating, for example, machine learning (ML) into non-automatic comment moderation processes (Risch & Krestel, 2018). Additionally, news media outlets have increasingly embraced ML applications in diverse capacities, from expediting journalistic research to aggregating and cross-referencing data (Underwood, 2019). While these automated systems demonstrate remarkable efficacy, they can pose notable implications for human rights, notably impacting freedom of expression and the right to non-discrimination. Additionally, they may, to some degree, encroach upon rights to privacy and data protection.

In order to better understand the role of AI in journalism, it is necessary to focus on ethical and legal considerations as well. The transparency of algorithms, the safeguarding of users' data privacy, and the accountability of automated decision-making processes are -among others- crucial factors which can ensure the protection of journalistic standards and professional integrity. In this vein, the exploration of AI impact on participatory journalism management transcends mere technological innovation. This paper thus embodies a critical examination of the evolving dynamics between media, technology, and society. It explores the evolving regulatory framework concerning AI, aiming to shed light both on possible risks and on ethical concerns.

## **Methodology**

The study adopted a qualitative research design, utilizing a literature review process to explore both the use of AI in participatory journalism management and the ethical considerations deriving in this framework. The goal of this review was to synthesize existing knowledge, identify trends, gaps and challenges, and provide a comprehensive understanding of how AI technologies are being integrated into the management of participatory journalism. To specify the search, the paper focused on the most relevant studies that specifically discuss the application and impact of AI in participatory journalism management, on research that provides empirical evidence related to AI tools and techniques in journalism and on studies that explore the ethical, social, and managerial implications of AI in audience participation.

As for the regulatory framework, the paper delved into reports that specifically discuss the regulation, legislation and policy aspects of AI, and especially in official documents from recognized authorities such as government bodies, international organizations, and leading research institutions. Due to the constantly evolving landscape of AI regulations, attempts to explore the field demand continuous attention, since global policy shifts could reshape the framework and implications of AI governance.

*Automation and artificial intelligence in participatory journalism management*

To deter malicious activities by bots and prevent mass submissions, media websites often implement a mandatory fully automated verification process for user participation (Saridou & Veglis, 2016; Sivakorn et al., 2016). CAPTCHAs (Completely Automated Public Turing tests to tell Computers and Humans Apart) typically prompt users to identify and verify a distorted image containing alphanumeric characters. Google's reCAPTCHA service stands out as the predominant solution in this domain, widely embraced by numerous websites to fend off automated bot attacks (Sivakorn et al., 2016). Designed to streamline the experience for genuine users while complicating text recognition for automated systems, reCAPTCHA employs sophisticated risk assessment mechanisms. It dynamically adjusts the difficulty of challenges based on individual user interactions, sometimes necessitating the selection of specific images from a collection of similar ones (Sivakorn et al., 2016).

Furthermore, as moderators can face overwhelming numbers of comments, with some of them harassing or hateful, platforms typically provide tools such as word filters for creators to automate aspects of moderation (Shagun et al., 2022). Automated moderation uses predefined filters to detect and replace prohibited words, phrases or IP addresses before comments are published (Veglis, 2014). However, users easily bypass such filters by inserting symbols or asterisks. In these cases, natural language processing (NLP) proves to be more effective, as it provides the possibility to focus on each specific phenomenon separately through a series of computational techniques for automatic analysis and representation of the human language (Cambria & White, 2014). A typical field of its application is hate speech, since the classification of a message as malicious or not should not only be based on the verbal part; peripheral factors need to be taken into account, such as the wider discourse context in which the message is included, the images and the accompanying videos, the time of posting or even the identity of the author and the recipient. These detection systems can also be bypassed with the use of static or moving images, memes and graphics (Lamerichs et al., 2018; Matamoros-Fernández & Farkas, 2021; Perifanos & Goutsos, 2021).

Over time, a range of tools and interfaces have been developed to assist journalists with gathering information and identifying newsworthy items from UGC, from event and eyewitness detection to source curation and verification (Wang & Diakopoulos, 2021). Many news organizations have pioneered participatory journalism platforms allowing audience submissions. Recently, media outlets have increasingly leveraged AI technology, notably ML, across various phases of news production.

Specifically, the American newspaper New York Times employs advanced methods for automated content moderation, utilizing ML algorithms trained on extensive textual datasets (Binns et al., 2017). The organization utilizes Google's Perspective system, employing ML to automatically identify and flag toxic comments. Drawing from an extensive dataset of million comments, the system assesses every new comment on a toxicity scale ranging from zero to one hundred based on their resemblance to previously identified as toxic. As a result, comments

are directly approved and published or escalated to moderators for further review (Etim, 2017; Wang, 2020). Moreover, The Washington Post newspaper used the NLP technique of sentiment analysis to investigate the possible removal of critical details from public reports by the U.S. Agency for International Development's Inspector General. The comparison between draft reports and their final versions showed that more than 400 negative references were removed before publication (Higham and Rich 2014; Stray 2016). Aiming to validate sources and combat misinformation, the PHEME project uses ML techniques to help journalists observe the veracity of potential rumors propagating on social media, find reliable sources, and recognize how rumors surface and develop (Wang & Diakopoulos, 2021).

### *Challenges and ethical considerations for media organizations*

Apart from the opportunities to enhance the media production process, such as using ML to sift through large numbers of documents, applying analytic tools for audience understanding or developing sociotechnical processes to support fact-checking (Diakopoulos, 2019; Trattner et al., 2021), the incorporation of AI tools in journalistic practice seems far from unhindered. The collection of personal data from millions of Facebook users without their consent by Cambridge Analytica company, and the debate over the role of Twitter bots in the 2016 US presidential election are two of the most well-known examples of AI misuse. Among others, issues of privacy, security and data protection, along with the constant need for transparency and justice call for thorough consideration. Traditional media organizations may face new threats since it is easy for both malicious editorial and non-editorial players to present misinformation and disinformation as news. In such a landscape of untrustworthy sources, responsible media entities should struggle to fortify their role as reliable sources of information (Trattner et al., 2021).

In a global survey conducted by the London School of Economics and Political Science in collaboration with the Google News Initiative on the use of AI in 71 news organizations from 32 countries (Beckett, 2019), journalists were asked about the challenges they faced in their daily work routine due to the integration of AI. Participants referred to practical issues, such as the lack of resources and the unwillingness to invest the existing resources in this direction. The cultural resistance including the fear of losing jobs or changing work habits, and a general hostility to new technology, the lack of knowledge about AI along with a lack of strategic managerial insight were also highlighted as key issues. Notwithstanding the above, journalists also mentioned the difficulty of setting the right priorities.

Survey participants were also asked in which areas AI brings or could bring a difference in relation to the ethics and culture of their media organizations. They initially highlighted the financial part, expressing the concern whether making cuts from AI-generated savings could lower editorial standards or whether reinvestments could instead be used to improve journalism quality and effectiveness. In addition, journalists referred to the risk of algorithmic biases, when the misuse of data or the use of bad data could lead to inaccuracies and discrimination against

specific social groups or views (Beckett, 2019). In a similar vein, the intensification of information bubbles and “echo chambers” arises as a widely expressed concern for media organizations and poses serious threats to freedom of speech, democratic values, and the quality of public debate (Ge et al., 2020). On the other hand, journalists underlined positive aspects where AI could improve the way editorial decisions are made, and enhance capabilities of human intelligence, such as critical thinking and creativity (Beckett, 2019).

More specifically, while ML has frequently been proposed as a wholesale solution to proactively remove undesirable posts, it requires gathering enough training data on rule violations, may not be adaptive to new kinds of infractions, may further complicate fairness and justice issues, and may have decisions that are not comprehensible (Gillespie, 2018; Gorwa, 2020; Jiang, 2019). Recent research suggests that algorithms designed by software engineers to detect hate speech show biases regarding, for example, gender (Shagun et al., 2022). Moreover, the computational and economic power required to train large language models as well as the access to large datasets, which are the basis of current NLP systems, lies in the hands of private companies such as OpenAI, Meta or Google (Prem & Krenn, 2023).

### *Regulatory framework*

During the very recent years, a large set of declarations and guidelines for the ethical use and development of AI has started blooming. These declarations lead to different similar approaches for introducing sets of principles as a departure point for discussing the responsible development of AI (Díaz-Rodríguez et al., 2023). In November 2021 UNESCO published the Recommendation on the Ethics of Artificial Intelligence, which has been adopted by 193 member states and is built on four pillars: Respecting human rights and dignity, living in just, peaceful, and interconnected societies, ensuring diversity and inclusion and developing the natural environment and ecosystem. The Recommendation focuses on eleven thematic areas, including data, gender, education, communication and the economy. Values and principles are designed to be respected by all actors involved in the AI system life cycle, being amenable to change through amendments to existing and new legislation and business guidelines (Díaz-Rodríguez et al., 2023).

Also in 2021 the European Commission proposed the first EU regulatory framework for AI, known as Artificial Intelligence Act (AI Act – AIA). In June 2023 Members of European Parliament (MEPs) adopted Parliament's negotiating position on the AI Act. Tripartite negotiations between the Parliament, the Commission and the Council followed and led to a final agreement in December 2023. The proposed Act takes the form of a regulation, which means that once adopted the rules and provisions are directly applicable within all 27 European Member States (Helberger & Diakopoulos, 2022). The new rules focus on the specific use of AI systems, defining a classification with different requirements and obligations tailored to a “risk-based approach”, where the obligations for an AI system are proportionate to the level of risk that it poses (Díaz-Rodríguez et al., 2023).

In Greece, general issues of AI are regulated by law 4961/2022, which obliges public and private bodies to a series of actions when using AI applications. Some of them are the algorithmic impact assessment, the obligation of transparency and of keeping records for employed AI systems, as well as the ethical use of data according to specific rules.

## Conclusions

In today's media landscape AI tools and techniques are often utilized by news organizations to facilitate the laborious duty of managing UGC. While NLP and ML algorithms contribute to content moderation or source verification, considerations regarding AI bias, privacy concerns, and the potential for censorship necessitate careful oversight and transparency. Beyond the legal part, concerns arise regarding the broader ethical issues of who has access to the databases and the large data centers required, who owns the very large computing infrastructures needed and, finally, how can the beneficial use of AI be ensured.

Against this background, addressing the manifold emerging issues requires a multidisciplinary approach, necessitating collaboration among developers, AI system designers, producers, providers, legislators, and journalists. This convergence entails partnerships between news organizations, academic institutions, and technology companies. Additionally, the importance of education and ongoing training, alongside the adoption of shared ethical guidelines between journalists and technologists concerning data usage should not be neglected. Above all, we have to keep in mind that technophobia cannot be the solution. Valuable advancements will persist, underscoring the importance of providing equitable access to tools for everyone and strengthening digital literacy initiatives. By effectively addressing the emerging challenges, we can leverage AI's transformative capacity to enhance journalistic methodologies while safeguarding the essential values of integrity and democracy.

## References

- Abbott, J. Y. (2017). 'Tensions in the scholarship on participatory journalism and citizen journalism'. *Annals of the International Communication Association*, 41(3-4): 278–297. <https://doi.org/10.1080/23808985.2017.1350927>.
- Beckett, C. (2019). *New powers, new responsibilities. A global survey of journalism and artificial intelligence*. <https://blogs.lse.ac.uk/polis/2019/11/18/new-powers-new-responsibilities/>
- Binns, R., Veale, M., Van Kleek, M., & Shadbolt, N. (2017). Like trainer, like bot? Inheritance of bias in algorithmic content moderation. In G. Ciampaglia, A. Mashhadi, & T. Yasseri (Eds.), *Social Informatics. Lecture Notes in Computer Science*. Springer, Cham. [https://doi.org/10.1007/978-3-319-67256-4\\_32](https://doi.org/10.1007/978-3-319-67256-4_32).

- Boberg, S., Schatto-Eckrodt, T., Frischlich, L., & Quandt, T. (2018). 'The moral gatekeeper? Moderation and deletion of user-generated content in a leading news forum'. *Media and Communication*, 6(4): 58-69. <https://doi.org/10.17645/mac.v6i4.1493>.
- Cambria, E. & White, B. (2014). 'Jumping NLP Curves: A review of natural language processing research'. *IEEE Computational Intelligence Magazine*, 9(2): 48-57. <https://doi.org/10.1109/MCI.2014.2307227>.
- Diakopoulos, N. (2019). *Automating the news: How algorithms are rewriting the media*. Harvard University Press, Cambridge. <https://doi.org/10.4159/9780674239302>.
- Díaz-Rodríguez, N., Del Ser, J., Coeckelbergh, M., López de Prado, M., Herrera-Viedma, E., & Herrera, F. (2023). 'Connecting the dots in trustworthy Artificial Intelligence: From AI principles, ethics, and key requirements to responsible AI systems and regulation'. *Information Fusion*, 99. <https://doi.org/10.1016/j.inffus.2023.101896>.
- Engelke, K. M. (2019). 'Online participatory journalism: A systematic literature review'. *Media and Communication*, 7(4): 31-44. <https://doi.org/10.17645/mac.v7i4.2250>.
- Gillespie, T. (2018). *Custodians of the Internet: Platforms, content moderation, and the hidden decisions that shape social media*. Yale University Press.
- Gorwa, R., Binns, R., & Katzenbach, C. (2020). 'Algorithmic content moderation: Technical and political challenges in the automation of platform governance'. *Big Data & Society*, 7(1).
- Helberger, N., & Diakopoulos, N. (2023). 'The European AI Act and how it matters for research into AI in media and journalism'. *Digital Journalism*, 11(9): 1751–1760. <https://doi.org/10.1080/21670811.2022.2082505>.
- Higham, S. & Rich, S. (2014, October 22). *Whistleblowers say USAID's IG removed critical details from public reports*. The Washington Post. [https://www.washingtonpost.com/investigations/whistleblowers-say-usaids-ig-removed-critical-details-from-public-reports/2014/10/22/68fbc1a0-4031-11e4-b03f-de718edeb92f\\_story.html](https://www.washingtonpost.com/investigations/whistleblowers-say-usaids-ig-removed-critical-details-from-public-reports/2014/10/22/68fbc1a0-4031-11e4-b03f-de718edeb92f_story.html)
- Jiang, J., Kiene, C., Middler, S., Brubaker, J.R., & Fiesler, C. (2019). *Moderation challenges in voice-based online communities on discord*. In Proceedings of the ACM on Human-Computer Interaction, 3(55): 1–23. <https://doi.org/10.1145/3359157>.
- Krumsvik, A. (2018). 'Redefining user involvement in digital news media'. *Journalism Practice*, 12(1): 19–31. <https://doi.org/10.1080/17512786.2017.1279025>.
- Lamerichs, N., Nguyen, D., Carmen, M., Melguizo, P., Radojevic, R., & Lange-Böhmer, A. (2018). 'Elite male bodies: The circulation of alt-right memes and the framing of politicians on social media'. *Participations*, 15(1): 180–206.
- Loosen, W., Ahva, L., Reimer, J., Solbach, P., Deuze, M., & Matzat, L. (2022). 'X Journalism'. Exploring journalism's diverse meanings through the names we give it'. *Journalism*, 23(1): 39–58. <https://doi.org/10.1177/1464884920950090>.

- Matamoros-Fernández, A. & Farkas, J. (2021). 'Racism, hate speech, and social media: A systematic review and critique'. *Television & New Media*, 22(2): 205–224. <https://doi.org/10.1177/1527476420982230>.
- Perifanos, K. & Goutsos, D. (2021). 'Multimodal hate speech detection in Greek social media'. *Multimodal Technologies and Interaction*, 5(7): 34. <https://doi.org/10.3390/mti5070034>.
- Prem, E. & Krenn, B. (2024). On algorithmic content moderation. In: Werthner, H., et al. *Introduction to digital humanism*. Springer, Cham. [https://doi.org/10.1007/978-3-031-45304-5\\_30](https://doi.org/10.1007/978-3-031-45304-5_30).
- Risch, J. & Krestel, R. (2018, August 25). Delete or not delete? Semi-automatic comment moderation for the newsroom. In R. Kumar, A. Ojha, M. Zampieri & S. Malmasi (Eds.), *Proceedings of the First Workshop on Trolling, Aggression and Cyberbullying* (pp. 166–176), Santa Fe, USA.
- Saridou, T. & Veglis, A. (2016). 'Participatory journalism policies in newspapers' websites in Greece'. *Journal of Greek Media and Culture*, 2(1): 85-101. [https://doi.org/10.1386/jgmc.2.1.85\\_1](https://doi.org/10.1386/jgmc.2.1.85_1).
- Saridou, T. & Veglis, A. (2021). Exploring participatory journalism through the integration of user-generated content in media organizations. In M. Khosrow-Pour (Ed.), *Encyclopedia of Information Science and Technology*, 5<sup>th</sup> edition, (pp. 1152-1163). IGI Global. <https://doi.org/10.4018/978-1-7998-3479-3>.
- Saridou, T., Panagiotidis, K., Tsipas, N., & Veglis, A. (2019). 'Towards a semantic-oriented model of participatory journalism management: Perceptions of user-generated content'. *Journal of Education, Innovation and Communication*, 1: 27-37. [https://doi.org/10.34097/jeicom\\_SI\\_Dec2019-2](https://doi.org/10.34097/jeicom_SI_Dec2019-2).
- Shagun, J., Chen, Q., Knauss, D., & Zhang, A. (2022). *Designing word filter tools for creator-led comment moderation*. In CHI Conference on Human Factors in Computing Systems (CHI '22), April 29 - May 5, 2022, New Orleans, LA, USA. <https://doi.org/10.1145/3491102.3517505>.
- Sivakorn, S., Polakis, J., & Keromytis, A.D. (2016, March 29 – April 1). *I'm not a human: Breaking the Google reCAPTCHA*. In Black Hat Asia 2016, Singapore. <https://www.blackhat.com/asia-16/briefings.html>.
- Stray, J. (2016, September 30 – October 1). *What do journalists do with documents? Field notes for natural language processing researchers*. [Conference presentation]. Computation+Journalism Symposium. Palo Alto, CA: Stanford University.
- Trattner, C., Jannach, D., Motta, E. Costera Meijer, I., Diakopoulos, N., Elahi, M., Opdahl, A., Tessem, B., Borch, N., Fjeld, M., Øvrelid, L., De Smedt, K., & Moe, H. (2022). 'Responsible media technology and AI: challenges and research directions'. *AI Ethics* 2, 585–594. <https://doi.org/10.1007/s43681-021-00126-4>.
- Underwood, C. (2019). *Automated journalism - AI applications at New York Times, Reuters, and other media giants*. New York Times. <https://emerj.com/ai-sector-overviews/automated-journalism-applications>.

- Wang, S. (2020). 'The influence of anonymity and incivility on perceptions of user comments on news websites'. *Mass Communication and Society*, 23(6): 912–936. <https://doi.org/10.1080/15205436.2020.1784950>.
- Wang, Y. & Diakopoulos, N. (2021). Journalistic source discovery: Supporting the identification of news sources in user generated content. In CHI Conference on Human Factors in Computing Systems (CHI '21), May 8–13, 2021, Yokohama, Japan. <https://doi.org/10.1145/3411764.3445266>.
- Wolfgang, D. (2016). 'Pursuing the ideal'. *Digital Journalism*, 4(6): 764-783, <https://doi.org/10.1080/21670811.2015.1090882>.



# AI in Communication and News Media Organizations: Current Transformations and Future Directions

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## Abstract

The current article focuses on the changes Artificial Intelligence (AI) has brought in the communication field as well as on how the news media organizations are transformed and need to be adapted to those changes. Through our research we aim to highlight the changes that AI brings to news media organizations, how and to what extent the work of journalists changes. AI-driven newsrooms are redefining the journalistic landscape, allowing for real-time data analysis and personalized content generation. Some of the hypothesis that are tested refer to the use of AI and the ethical considerations in order to ensure a more responsible and user-centric news environment, to the lack of support from tech companies to small news media organizations impacting their sustainability. Our methodology is qualitative with interviews with journalists working in small news media organizations with the aim to examine the current changes and finally to propose future pathways for the field.

**Keywords:** Artificial Intelligence, Small news media, Newsrooms, Sustainability.

## Introduction

Artificial Intelligence has dramatically changed our lives the last few years. AI-based solutions can be defined as systems with the ability to act intelligently, correctly interpreting external data, and using these objectives to execute particular tasks by a flexible configuration, even to the extent of reproducing human behaviors with cognitive, social, and emotional intelligence (Di Vaio et al., 2020 at Johnson, Laurell, Ots, & Sandström, 2022:2). Information in AI is not self-explanatory; it is context-dependent. It can “extrapolate” to produce a sentence, or given a topic sentence, can extrapolate to produce a paragraph. Transformers like GPT-3 detect patterns in sequential elements such as text, enabling them to predict and generate the elements likely to follow. In GPT-3’s case, AI can capture the sequential dependencies between words, paragraphs, or code in order to generate these outputs (Kissinger, Schmidt and Huttenlocher, 2021:52-89).

AI is used in the production and processing of news content; the news production and processing mode supported by AI technology takes advantage of the massive information content under the context of big data, making the news production and processing mode present new characteristics of precision, intelligence, and diversification. The application of AI technology in content distribution and transmission can be divided into three categories

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according to the different recommendation algorithms, including content-based recommendation systems, collaborative filtering recommendation systems, and hybrid recommendation systems. The application of AI technology in content interaction and experience mainly includes automatic broadcast, sign language synthesis, and sound synthesis broadcast. Lastly, the application of AI technology in content censorship and intellectual property monitoring includes the identification of information related to terrorism and violence and harmful information that distorts facts, as well as the detection of news copyright (Sun, Hu, & Wu, 2022:3).

AI cannot be compared with human intelligence in grasping the nonlinear development of complex problems and predicting the unexpected challenges of human development. The advantage of human journalists is that they hone their thinking and write empowering stories that address realistic subjects and issues. Although robot writing is becoming more and more normal, the mediocre writing style and lack of humanistic feelings are still its unavoidable shortcomings. AI could improve the efficiency of information dissemination but regulation is needed. For example, we should pay attention to the transparency in AI by integrating legal, social, and ethical aspects (Sun, Hu, & Wu, 2022:14-18).

Leading organizations such as the Associated Press, Forbes, Reuters, The New York Times, and many others already use AI in their work and rely on it to automatically generate a large number of journalistic texts in a shorter time. But they are also using it to eliminate some of the errors that are often attributed to the human factor. For example, the Associated Press first launched an automatic text production system using sports data in late 2013, and later used a similar system to generate economic and corporate reports (Marconi and Siegman, 2017 at Barceló-Ugarte, Pérez-Tornero, & Vila-Fumàs, 2021:139-140). According to this organization, the advantages of using AI in journalism include: reducing the workload of journalists, allowing them to spend more time on more complex tasks; improving communication and collaboration among journalists; allowing journalists to filter large data, texts, images, and videos; helping journalists to communicate with their audience; and enhancing the creation of new types of journalism.

In 2019, only 37% of newsrooms had a dedicated AI strategy (Beckett 2019) which coupled with ‘automation anxiety’ (Akst 2013), has led to resistance by journalists to technological advances for fear of losing their status or jobs. Context plays a crucial role in adopting new technologies (Broussard et al. 2019, Bastian, Helberger, and Makhortykh 2021); for instance, journalists may be more interested in tools which may free them up from repetitive tasks, as opposed to marketing analytics. In addition, some newsrooms have been more open than others: the BBC, where our research took place, has shown itself repeatedly welcome to study the innovation diffusion that has taken place in the corporation for several decades (e.g., Cottle and Ashton 1999; Wallace 2013; Hannaford 2015; Jones and Jones 2019).

Algorithms can write news without human intervention with a set of stereotypes and statistical information. Each stage of news production becomes automatic, and thousands of news can be

created in seconds at a low cost. In the context of newsrooms, we can distinguish between the use of AI for story production, and story distribution and promotion. In planning and implementing AI-driven tools in newsrooms, journalists should keep the audience informed on what AI tools are being used and how much of the news production process is handled by AI. The newsroom transformation should not be solely about what technology to use but also about how this technology can act in the public interest and best serve journalism and better protect people's democratic rights. As audience metrics have long played a central role in the editorial process, shaping many editorial choices, having an audience-oriented AI strategy should be a priority for any forward-looking newsroom (Marinescu, Fox, Roventa-Frumusani, Branea, & Marinache, 2022:307-309). Fully automated and semi-automated forms of gathering, filtering, composing, and sharing news occupied a greater place in a growing number of newsrooms opening discussions about shifts in the norms, patterns, and routines of news production were happening, and at a more fundamental level, taken-for granted ideas about by who (or what) journalism was being challenged. Implementing AI tools in newsrooms refers to a wide journalism usage such as finding and contacting sources, adjusting objects faces or colors, converting speech into text, editing audio and video, identify sentiment of readers in different platforms.

ChatGPT is an emerging technology set to change the landscape of conversation agents and builds on the prospects of the chatbot, making conversation more human, answering questions, generating ideas, and suggesting solutions. It has been considered to shape journalism, law and marketing with its content-creating strategies (Dwivedi, Kshetri, Hughes, Slade, Jeyaraj, Kar, & Wright, 2023:16). ChatGPT is just that, a tool, that can be embraced like other tools (e.g., Grammarly) to improve the quality of writing. For instance, often the review process ends with the tedium of shortening the paper to meet length requirements. Think of alleviating the difficulty in deciding what to cut by using the tool.

The most obvious opportunities for applying generative AI to news are in bringing new efficiencies to specific and familiar steps within the existing news production workflows supporting an organization's existing news products. This 'more-efficient-production-of-existing-products' strategy is attractive in its simplicity, but its benefits will almost certainly be short-lived because it assumes that the existing media environment will continue roughly in its existing form. There are early indications of this in the nascent generative search experiences offered by Google and Microsoft, in the user control of consumption experiences offered by well-funded news aggregators. A 'more-efficient-production-of-existing-products' strategy is clearly a reasonable place to start, but it does not fundamentally compete with new AI-enabled experiences and therefore may not remain sufficient for long (Caswell, 2023).

A more enduring strategy for news in the age of AI will necessarily be centered on differentiation and competitive advantage, offering exclusive news products that remain uniquely valuable to audiences even as the information ecosystem changes. This 'unique products' strategy is challenging because it will be audiences that decide on the relative

uniqueness of a newsroom's products, not newsrooms. A differentiation strategy might still potentially fit well with some of the values and brand attributes of traditional journalism, especially if the information ecosystem begins to significantly degrade under the onslaught of AI-generated content. All these opportunities, however, will likely need to be comprehensively optimized using generative AI to remain competitive within an AI-mediated information ecosystem, even if their core value is differentiated. Developing forms of differentiation will likely be very challenging for many news organizations, especially for those whose current product is largely built on packaging commodity information, however there may eventually be no alternative (Caswell, 2023).

Regardless of where a news organization might be in its path towards a strategy for responding to AI, there is an urgent strategic need that requires early attention – that of communicating the organization's approach to AI to stakeholders, funders, staff and audiences. The urgency of strategic communication about AI for news organizations comes from the awareness that every individual connected with the organization already has about the abilities of these tools and their potential for dramatic disruption. Most people in the news industry are already playing with the tools, reading the reports, assessing the potential and asking the obvious questions. A more practical communication strategy at this stage might consist of acknowledging the situation, articulating how the organization is engaging with and learning about AI, providing clear guidelines for its early or limited use, demonstrating new approaches to innovation, signaling adaptability and generally preparing for change (Caswell, 2023).

Any strategy for adapting a newsroom to an information ecosystem defined by generative AI is of little use without specific, practical projects that translate that strategy into useful outcomes. Identifying such projects is obviously difficult during this current period of exceptionally rapid change, because of the considerable risks of wasted investments, embarrassing missteps or potential damage to brands or trust. In addition, projects can only contribute meaningfully towards a strategy if they can be applied in routine, day-to-day operations, rather than merely as testable prototypes or demonstrators. A relatively low risk category of generative AI projects is purely back-end applications. These are applications with no direct audience-facing output, not even draft text, but which instead deliver their value to journalists or to businesses. In addition to being relatively low risk, back-end AI applications are also relatively easy to implement as they are often 'loosely coupled' to news production workflow and infrastructure. Such applications can sometimes be managed by stand-alone tools disconnected from the primary publishing stack of the organization, operated by specialized staff separate from the main editorial workflow. The increased risk associated with knowledge task projects comes from the significant potential for hallucinations, simple error from training data, biases, out-of-date context and other limitations inherent in language models. As with language tasks, knowledge tasks can be integrated into workflows in different ways and can contribute to different strategies. They, too, are a fundamental category of journalistic task in an AI-enabled newsroom.

Unlike language tasks and knowledge tasks, these applications typically depend on special-purpose medium-to-medium transformation models, often used in combination with general-purpose large language models within complex workflows. Such special-purpose models include speech-to-text models (transcription), text-to-speech models (synthetic voices), text-to-video models (synthetic avatars, automated generation of B-roll video, etcetera), text-to-image models and others. These tools are still at an early stage. But they are developing very quickly, are widely available, and already easily match human quality in many cases. These tasks are most useful for a product expansion strategy. Some potential barriers to implementing this category of projects include the need for an editorial producer with experience in the output medium to ensure quality, the not insignificant cost of using the specialized models, and the challenge of distributing the same story in several different media.

Whether back-end tasks, language tasks or knowledge tasks, and whether employed as part of an efficiency strategy, a product expansion strategy or a product differentiation strategy, all applications of generative AI in newsrooms are fundamentally dependent not just on the models used to execute them, but also on the prompts used to direct those models. Just evaluating the outputs of prompts applied to stochastic models fed by diverse source documents presents a combinatorial editing challenge unlike anything previously seen in news work. All of this requires infrastructure – databases, tools, user interfaces, schemas, integration, processes, analytics, training and documentation. Assuming that adequate ‘prompt-to-publish’ infrastructure is in place, a newsroom still requires an interface between this infrastructure and its journalists. Even with a coherent strategy, a set of applications that support that strategy and a prompt management process that professionalizes the execution of those applications, the extent of AI-enabled news production will still be limited by the available content management, serving and distribution infrastructure. This is especially true of a product expansion strategy executed using language tasks or medium-to-medium transformations (Caswell, 2023).

AI can reduce risks of placing anticipatory trust bets, which can inform decisions to trust through heightening trust towards primary and secondary objects. Namely, through automated-journalism where news stories are algorithmically generated exogenous to human intervention. According to Robertson, & Ridge-Newman, (2022:135-138), four macro-societal variables should be recognized to foster the emergence of a trust culture towards AI and the social institution of journalism. Trust towards and historical perceptions of AI have potential to be marred by nefarious use of the technology, namely through deepfakes. The first variable is ‘normative coherence’ within AI-journalism. AI must strive to achieve normative ideals. Algorithms must be developed that strive to provide accurate journalism that can remove misinformation and potential algorithm production bias. If AI is effectively utilized, in-built algorithms could mitigate these factors internally, relying on verified information, swiftly written through automated-journalism. This will develop ideal-type journalism that enacts normative ideals of informing publics with fact-driven reportage. Secondly, the journalistic institution must be transparent. The audience must have knowledge that AI is being utilized and

the creation of the story is not an entirely human construct. If the institution transparently uses AI, people are more likely to place trust bets and not be deceived by algorithmically generated news. Publics should be aware of how AI-journalism is conducted and be able to report inaccuracies or bias in reportage. This will foster a horizontal journalist–audience relationship and allow consumers to help develop ideal-type AI for journalism to improve it going forward. With AI being used and continually developed in the public domain, its usage is becoming increasingly transparent. Thirdly, breeding familiarity can foster trust. The opposite of this, secrecy breeds uncertainty and distrust of emerging technology. People may be hesitant about AI and associate the technology with untrustworthy historical applications if the organization is not transparent. Gradually instigating AI in journalism will increase familiarity of the technology amongst publics. This increased familiarity will reduce the risk in placing trust bets. Doing so will provide the audience with knowledge that AI-journalism will be accurate, trustworthy, and guaranteed to meet expectations once it has become an accepted facet of journalism. Finally, these variables can inform the accountability of the social institution of journalism and AI. AI-algorithms should be tested to produce accurate news. Institutions should be transparent in utilizing AI. This will then become familiar within journalism.

Normative coherence, transparency, familiarity and accountability are the ideals which AI should seek to cultivate. If these are achieved, then an individual will firstly have confidence in AI-journalism as a credible source of information. This will then foster anticipatory trust in the source to act in their best interests. With these ideals met, the likelihood of trust bets failing to meet expectations will be low. This will therefore increase primary trustworthiness in AI-journalism; in media corporations as a secondary target for providing trustworthy coverage that meets normative ideals; and in the social institution of journalism for widespread use of AI. There are many barriers to overcome before AI can repair trust disparities. This includes regulating deepfakes, reducing algorithmic bias and minimizing data inequalities. As AI operates to recommend content and connections, categorize information and concepts, and predict user preferences and goals, it may inadvertently reinforce particular individual, group, or societal choices. For societies accustomed to the free exchange of ideas, grappling with AI's role in assessing and potentially censoring information has introduced difficult fundamental debates. As the tools for spreading disinformation become more powerful and increasingly automated, the process of defining and suppressing disinformation increasingly appears as an essential social and political function (Kissinger, Schmidt and Huttenlocher, 2021:100-116).

Newsrooms including USA Today, The Atlantic, National Public Radio, the Canadian Broadcasting Corporation and the Financial Times have since the early of 2023 developed AI guidelines or policies. AI policies and documents from commercial news organizations, compared with those that receive public funding, “seem to be more fine-grained and contain significantly more information on permitted and prohibited applications”. Commercial news organizations are more apt to emphasize source protection, urging journalists to take caution when, for example, using AI tools for help making sense of large amounts of confidential or

background information. Many organizations are really concerned about not losing their credibility, not losing their audience, not trying to give away what makes journalism stand out. Just over 71% of the documents mention one or more journalistic values, such as public service, objectivity, autonomy, immediacy — meaning publishing or broadcasting news quickly — and ethics. Nearly 70% of the AI documents were designed for editorial staff, while most of the rest applied to an entire organization. This would include the business side, which might use AI for advertising or hiring purposes. One policy only applied to the business side. And 69% mentioned AI pitfalls, such as “hallucinations,” the authors write, in which an AI system makes up facts. About 63% specified the guidelines would be updated at some point in the future — 6% of those “specified a particular interval for updates,” the authors write — while 37% did not indicate if or when the policies would be updated. Around 54% of the documents cautioned journalists to be careful to protect sources when using AI, with several addressing the potential risk of revealing confidential sources when feeding information into an AI chatbot. Some 44% allow journalists to use AI to gather information and develop story ideas, angles and outlines. Another 4% disallow this use, while half do not specify. Meanwhile, 42% allow journalists to use AI to alter editorial content, such as editing and updating stories, while 6% disallow this use and half do not specify. "According to Merrefield (2023), only 8% of the policies state how AI regulations would be enforced, while the rest did not mention any accountability mechanisms (Merrefield, C. (2023) Researchers compare AI policies and guidelines at 52 news organizations, *The Journalist's*)."

Three key components of AI literacy are knowledge about artificial intelligence (including its genealogy, moving beyond fantastic or dystopian claims about impact and effects, and understanding AI in the world as a subject of critical journalism); the ability to recognize instances (such as particular workflow processes, stories and packages) where AI might be usefully and creatively applied – and when it should be avoided;’ skills to help, coach or teach others when strategically understanding, imagining, developing and implementing AI. As a first step, the persistent notion of AI as an all-powerful technology needs to be dispelled. The normative story of AI and automation in journalism should not be a story of technology, but one of people: the people who train the AI, the people navigating through these systems to report and relate to audiences, and the people developing relations of trust with journalism and journalists through a variety of platforms. Beyond displacement there is a wealth of opportunity for AI in journalism, importantly including those related to critical awareness of the various ways in which AI tends to amplify existing social and digital inequalities when left to technology companies and software-as-a-service industries. There is an uncanniness in the way many in the industry tend to look at journalism through the lens of AI, which opens opportunities for positional reflexivity – ways of knowing ourselves in the context of machines. It is this kind of AI literacy that we would advocate for journalism (and journalists) to develop (Deuze, & Beckett, 2022:1917).

## **Methodology**

Our methodology is based on qualitative research which involves in-depth interviews. In this method, the questioning approach is varied. Although the researcher enters the project with a specific set of questions, follow-up questions are developed as needed. The variables in qualitative research may or may not be measured or quantified. This method allows a researcher to observe behavior in a natural setting without the artificiality that sometimes surrounds experimental or survey research. In addition, qualitative techniques can increase a researcher's depth of understanding of the phenomenon under investigation. This is especially true when the phenomenon has not been investigated previously. Finally, qualitative methods are flexible and allow the researcher to pursue new areas of interest. A questionnaire is unlikely to provide data about questions that were not asked, but a person conducting a field observation or focus group might discover facets of a subject that were not considered before the study began. Qualitative research appears to be easy to conduct, but projects must be carefully designed to ensure that they focus on key issues. Qualitative research uses smaller samples of subjects or respondents. While these two points may affect some qualitative research, the fact is that sample sizes in both qualitative and quantitative can be the same (Wimmer and Dominick, 2013:48-62). On the qualitative research, we will use hermeneutic phenomenology, where the researcher is required to discover a way into the world to reveal that world to others in contrast with the already presented researches where there is a lack of this methodology.

Intensive interviews are unique because they provide detailed background about the reasons respondents give specific answers. Elaborate data concerning respondents' opinions, values, motivations, recollections, experiences, and feelings are obtained. They allow for lengthy observation of respondents' nonverbal responses. They are usually long. They can be customized to individual respondents. Intensive interviews allow interviewers to form questions based on each respondent's answers. One benefit of the online interview is that the interview can take place at the respondent's convenience. The interviewer can post one or more questions, and the respondent can take as long as he or she likes (usually up to a week) to answer. The extra time can allow respondents to reflect about their answers and may provide the researcher with richer content and additional insights. Another benefit is that interviews can be conducted with people over a wide geographic area, without travel expenses. Finally, this method may be helpful in collecting data from people who might be uncomfortable in a face-to-face situation (Wimmer and Dominick, 2013:139-140).

We have focused on intensive interviews with journalists and representatives from small news media organizations with the aim of addressing the challenges. Our hypotheses include:

1. The use of AI in media organizations arise ethical considerations that need to ensure a more responsible and user-centric news environment.



2. While larger news organizations often receive substantial support from tech companies for AI integration, smaller news media organizations lack the same support and as a result it impacts their sustainability.
3. There is a need from tech companies to contribute in the support of smaller news media organizations that can learn important lessons from examining the experience of larger counterparts in the effective adoption of AI in journalism.

The interviews were conducted in a period of a month, the number of the interviewees was aimed at 10-15 people but finally only 10 have been made because of research saturation. The interviews were conducted online through Zoom, a document of consent was sent to the interviewees as well as a document which ensured anonymity. The interviewees were people from small and local news media organizations in Greece and the interviews were conducted in Greek. Each interview had the duration of 10 to 15 minutes. The questions asked were about the use of AI in newsrooms, the level of integration, the widening of gap between big and small news media organizations, ethical concerns, narratives and behaviors by journalists and opinions in newsrooms on how they do perceive AI and their willingness to integrate it further. Another important issue discussed was the level of support from technological companies as well as the lack of funding to booster the use of AI impacting their sustainability.

## **Research findings**

### *Current Usage of AI in News Media*

According to our research, the majority of news media organizations are either not using AI platforms for content production or are still considering their use. Only two organizations have adopted early-stage AI platforms like ChatGPT. This limited adoption is primarily due to financial and technical constraints faced by smaller news media organizations, which lack the capacity to invest in and train personnel for AI technologies. In contrast, larger organizations have the resources to implement and benefit from these technologies more rapidly.

### *Potential Benefits of AI integration*

AI has the potential to revolutionize various aspects of journalism, including the fast and easy content production. AI can streamline the process of creating news articles, allowing journalists to produce content more quickly. "AI might replace some of our tasks, but it can also help us find timely topics and understand audience preferences better," noted one journalist. AI can efficiently search and utilize archived content to enhance current reporting. AI can assist in gathering information from various sources and analyzing press releases. AI can be used to broadcast news bulletins or shows with virtual presenters. AI can develop tools for fact-checking information and understanding audience preferences. Despite these advantages, the integration of AI in newsrooms remains limited, which has prevented significant changes in journalistic work.

### *Journalistic Concerns and Predictions*

Journalists express concerns about the potential impact of AI on their profession, predicting both positive and negative outcomes. There is a fear that AI might replace journalists. "The use of AI in newsrooms could lead to trust issues with our audience. We need to ensure that the human touch in journalism is not lost," expressed a concerned journalist. AI could increase trust issues with audiences, who might question the authenticity of AI-generated content. AI could fundamentally alter media operations at all stages and it might alleviate some of the workload and assist in finding timely topics and understanding audience preferences.

### *AI as a Double-Edged Sword*

AI is perceived both as a useful tool and a potential threat to journalistic quality. AI might initially lead to a decline in content quality but over time, AI could facilitate journalists' work by saving time and effort. Moderation and a legal framework protecting journalists' intellectual rights are necessary to ensure AI serves as an aid rather than a replacement. "Funding and proper training are critical. Without these, smaller news media organizations will struggle to keep up with the technological advancements that larger organizations can easily adopt," commented a senior editor.

### *Financial and Ethical Challenges*

Many news media organizations lack the funding to fully utilize AI, relying on free versions without exploring their full potential. Efforts are underway to secure funding and participate in European programs to train journalists from smaller organizations in using AI platforms. Journalists highlighted several ethical considerations for AI use like ensuring AI-generated content is original and not plagiarized, safeguarding the anonymity and personal data of individuals, maintaining democratic control over digital data and ensuring accountability and ensuring AI is impartial and does not contribute to the spread of fake news.

### *Lack of Support from Tech Companies*

None of the surveyed journalists who work in news media organizations, have been provided support by tech companies for AI integration in news media organizations. Nonetheless, many organizations are willing to embrace AI initially through pilot phases to explore its integration with existing journalistic norms.

## **Conclusions**

Our findings are in agreement with several studies in the literature review. Brennen, Howard, and Nielsen (2022) discuss the ethical considerations and transparency issues surrounding the use of AI in journalism, which aligns with our findings that ethical concerns are a major issue in AI integration in news media. Gutierrez Lopez et al. (2023) emphasize the lack of knowledge and need for proper training for the effective integration of AI tools in journalistic routines, which supports our conclusion that smaller news organizations struggle due to a lack of technical and financial resources. Moran and Shaikh (2022) highlight the discourse around AI

as a potential threat to traditional journalism roles, which mirrors our findings about the perception of AI as a substitute rather than a tool. However, there is some disagreement with other studies regarding Lewis, Guzman, and Schmidt (2019) suggest a more collaborative future between AI and journalists, focusing on augmentation rather than substitution, which contrasts with some of our findings where AI is seen more as a threat than an aid. Simon (2022) discusses the autonomy of journalists being potentially compromised by AI, a point which we did not explore in depth but is relevant to the ethical considerations we mentioned. Additionally, the work by Dwivedi et al. (2023) on the broader implications of generative AI highlights both opportunities and challenges, indicating a nuanced view that supports the need for guidelines and frameworks, as we concluded.

Finally, we can summarize that our first hypothesis is confirmed that the use of AI in media organizations arise ethical considerations that need to ensure a more responsible environment. Guidelines and specific norms and legal framework need to be developed for the integration and use of AI platforms by news media organizations because issues of transparency, lack of knowledge on the use of AI, content moderation and trust are contingent. The ethical considerations arise problems as it regards the integration of AI by news media in general due to the lack of knowledge about it and the precipitance as an enemy for journalism and a substitution of their work. This consideration can lead to damaging results for small news media organizations who should use and utilize AI as a tool for journalist. Our second hypothesis is merely confirmed, because even though we could not confirm that large news media organizations receive support from tech companies, the small news media organizations lacked support for the integration of AI, resulting to important issues of sustainability. More specifically, this situation is growing the gap between small and big news media organizations because the first one's lack of financial and technical capacity while the second one's had the capacity of training of their personnel resulting to be faster with those processes. Our second hypothesis is continued and completed by our third hypothesis which is confirmed the fact that tech companies need to contribute in the support of small news media organizations which can learn important lessons from examining the experience of larger counterparts in the effective adoption of AI in journalism. Small news media organizations lack of funding to use AI, and this one is one of the motives that AI has not been yet integrated in the daily practices of newsrooms. The media environment in Greece and in small news media organizations is organized by the utilization of free versions, lacking the chance of exploring the full possibilities of it. European programs can be developed for journalists where small news media organizations will be funded for training their staff. Another aspect is the receptance of support by tech companies as a pilot phase to examine small news media organizations how AI can be integrated in the existing journalistic norms.

Artificial Intelligence is not yet integrated in the journalistic practices even though it has revolutionized the way journalists think of it. The transformation in news media organizations, and especially the small ones that we are currently examining, is not still obvious due to the

lack of integration and the experimentation with it only in early stages. AI undoubtedly brings tremendous changes in news production that still need to be explored with a more neutral view, avoiding to perceive AI only as a threat. Newsrooms from big and small news media organizations can cooperate for the integration of AI and develop creative ideas or seek grants. The development of AI literacy skills is needed in newsrooms so as to have prepared journalists, so trainings need to be developed and offered.

One of the limitations of our research is the lack of quantitative analysis and the covering only of Greek media, so we do not have fully applied research. Future research can focus on small news media organizations across Europe and could be longitudinal as well as to include cases of AI integration in newsrooms.

## References

- Brennen, J. S., Howard, P. N., & Nielsen, R. K. (2022). What to expect when you're expecting robots: Futures, expectations, and pseudo-artificial general intelligence in UK news. *Journalism*, 23(1), 22-38.
- Dwivedi, Y. K., Kshetri, N., Hughes, L., Slade, E. L., Jeyaraj, A., Kar, A. K., ... & Wright, R. (2023). "So what if ChatGPT wrote it?" Multidisciplinary perspectives on opportunities, challenges and implications of generative conversational AI for research, practice and policy. *International Journal of Information Management*, 71, 102642.
- Gutierrez Lopez, M., Porlezza, C., Cooper, G., Makri, S., MacFarlane, A., & Missaoui, S. (2023). A question of design: Strategies for embedding AI-driven tools into journalistic work routines. *Digital Journalism*, 11(3), 484-503.
- Johnson, P. C., Laurell, C., Ots, M., & Sandström, C. (2022). Digital innovation and the effects of artificial intelligence on firms' research and development—Automation or augmentation, exploration or exploitation?. *Technological Forecasting and Social Change*, 179, 121636.
- Lewis, S. C., Guzman, A. L., & Schmidt, T. R. (2019). Automation, journalism, and human-machine communication: Rethinking roles and relationships of humans and machines in news. *Digital journalism*, 7(4), 409-427.
- Merrefield, C. (2023) *Researchers compare AI policies and guidelines at 52 news organizations*, *The Journalist's Resource*. Available at: [https://journalistsresource.org/home/generative-ai-policies-newsrooms/?utm\\_medium=newsletter&utm\\_source=JR-newsletter](https://journalistsresource.org/home/generative-ai-policies-newsrooms/?utm_medium=newsletter&utm_source=JR-newsletter) (Accessed: 14 December 2023).
- Moran, R. E., & Shaikh, S. J. (2022). Robots in the news and newsrooms: Unpacking meta-journalistic discourse on the use of artificial intelligence in journalism. *Digital journalism*, 10(10), 1756-1774.
- Naoain, A. S. (2022). Addressing the Impact of Artificial Intelligence on Journalism: The perception of experts, journalists and academics.

- Pavlik, J. V. (2023). Collaborating with ChatGPT: Considering the implications of generative artificial intelligence for journalism and media education. *Journalism & Mass Communication Educator*, 78(1), 84-93.
- Simon, F. M. (2022). Uneasy bedfellows: AI in the news, platform companies and the issue of journalistic autonomy. *Digital journalism*, 10(10), 1832-1854.
- Sun, M., Hu, W., & Wu, Y. (2022). Public perceptions and attitudes towards the application of artificial intelligence in journalism: From a China-based survey. *Journalism Practice*, 1-23.
- Wimmer, R. D., & Dominick, J. R. (2013). *Mass media research*. Cengage learning.

## **Foreword to the fourth thematic: Public Engagement, Misinformation, and current trends in contemporary journalism**

Maria Matsiola\*

The fourth thematic under the title of “Public Engagement, Misinformation, and current trends in contemporary journalism” delves into a multifaceted examination of how public interaction with news content is evolving amidst challenges like misinformation and transformative technological trends. Each paper explores a distinct yet interconnected aspect of the theme, providing a holistic view of the interplay between journalism, technology, and societal engagement. The papers offer a comprehensive exploration of contemporary challenges and innovations in journalism, emphasizing the pivotal role of public engagement in shaping the future of news and information.

The thematic begins with the study titled “Misinformation, disinformation, fake news: How do they spread and why do people fall for fake news?” that focuses on fake news about climate change, laying emphasis on the factors that led to the forging, through the press, of the false assertion that climate change does not exist or, if it does, it is due to natural processes and not to humans. Two cases of inaccurate statements detected by Check4Facts news/statements verification platform, which combines investigative journalism and social research, are highlighted. The work of a fact-checker when examining climate news/statements and conclude by proposing appropriate solutions to address climate change related fake news is also described.

The second paper, titled “The Online Communities & the sense of belonging in Digital Journalism” presents online communities as an interactive form of audience participation in the new transformative digital landscape of journalism. The study aims to shed light in this area through a case study that was conducted via a semi-structured interview with the creator of the highly acclaimed column "A, Mpa" on LiFO and founder of the feminist-oriented platform "Womanlandia," which actively encourages reader participation in commenting and selecting article themes. The analysis revealed that user-generated comments play a vital and organic role in shaping articles.

In the third paper, under the title “The public’s active participation in news: The role of the voluntary radio of Thessaloniki” the role of the active participation of citizens in the production of radio content and in the formation of listening options through the case study of the voluntary radio of the municipality of Thessaloniki is investigated. Through semi-structured interviews conducted among four individuals and head of institutions that used to host radio shows in the

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voluntary radio of the municipality of Thessaloniki, the authors explore the concept of public participation in the production of news, concluding that this form of news production process promotes pluralism and citizens' access to a wide range of information.

The fourth paper shifts to an emerging genre of journalism: predictive journalism. The study is titled “Predictive journalism: The case of Greek sports and betting websites” and it delves into predictive journalism as an emerging genre in data journalism that incorporates predictive information such as estimates, forecasts, etc. The study examines the application of predictive journalism in Greek sports and betting websites through an analysis of the volume and the content of articles. The study reveals how predictive journalism leverages forecasts and analyses to engage audiences, particularly in sports, where speculation about match outcomes and strategies has become an integral part of storytelling.

Finally, the thematic concludes with an exploration of public service journalism in the era of platformisation. In the fifth and last paper, under the title “Public Service/Interest Journalism in Transition: Greek media professionals’ perceptions of broadcasters’ mission in the platform era”, the author investigates the operational challenges faced by contemporary broadcasting organizations attempting to serve the public service/interest journalism mission. Considering several transformations, instigated by the platformisation of communication, the study raises the question concerning to what extent is there a policy defense of legacy broadcasting media in Greece against a background of growing competition, thriving in an environment dominated by technology-led companies and Over the Top (OTT) subscription-based models of television content’s distribution.

# Misinformation, disinformation, fake news: How do they spread and why do people fall for fake news?

Konstantina Vasileiadou \*

## Abstract

In the present study, after a short reference to the concepts of misinformation, disinformation and fake news and the causes of their dissemination, we focus on fake news about climate change, laying emphasis on the factors that led to the forging, through the press, of the false assertion that climate change does not exist or, if it does, it is due to natural processes and not to humans. One of the most influential deniers of climate change is former US President Donald Trump, who has consistently expressed suspicion about the origin of climate change. Misinformation on climate was also spread on the occasion of the 28th UN Climate Conference (COP28), with the most significant inaccuracy coming from the President of the Conference, Sultan Al Jaber, who made statements against scientists calling for a reduction in fossil fuel use in order to prevent a 1.5 degree rise in temperature above pre-industrial levels. According to a report on the COP28 briefing, among the biggest sources of false or misleading climate-related information, are influential states including Russia and China, fossil fuel exporting companies and online provocateurs who make money promoting claims that global warming is but a hoax. As to climate change misinformation, we highlight two cases of inaccurate statements as detected by Check4Facts news/statements verification platform, which combines investigative journalism and social research. We then describe how a fact-checker works when examining climate news/statements and conclude by proposing appropriate solutions to address climate change related fake news. These are media literacy, media reform and fact-checking by organizations whose independence and credibility can be guaranteed.

**Keywords:** fact-checking, fake news, fake news on climate, Check4Facts news/statements verification platform, misinformation and climate change, climate news fact checking

## Introduction

Historian Michael Grant, in his study *Greek and Roman historians: Information and misinformation* (Grant 2015) notes that misinformation is as old as democracy itself and he argues that misinformation, even deliberate disinformation, is abundant in the writings of ancient historians such as Herodotus, Tacitus and Thucydides.

The definition of fake news continues to change over time (Kim, Xiong, Lee, et al., 2021); one definition is “fabricated information that mimics news media content in form but not in process or intent” (Lazer, Baum, Benkler, et al., 2018) with the intention of misleading readers. Misinformation means that the false circulating information may be accidental, whereas

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disinformation implies intentional fabrication and dissemination (Shahi, Dirkson, Majchrzak, 2021). People also use “fake news” to label as unreliable opinions that do not support their positions (Vosoughi, Roy, Aral, 2018).

Discussing fake news and the environment where they thrive in, Nicolas Demertzis and Stamatis Poulakidakos (Demertzis, & Poulakidakos, 2024) note that within a complex and multifaceted communication framework, as the same has been shaped by the introduction of multiple sources of information into the digital public sphere and, given a number of factors that (indicatively) pertain to citizens’ alienation from the political system, distrust of politicians and experts, consideration of politics as a power/strategic game that preys on people's ignorance about political matters and their rights, there has been an increase in the circulation of biased, polarized or even untrue information on current issues. This phenomenon has been the subject of public and academic debate for some years now under the term “fake news”. Among other things, the increased circulation of fake news is due both to the logic of “supply” by natural or legal persons with an interest in producing and circulating incomplete or even distorted information and to the logic of “demand” by users.

### **How does fake news spread and why do people fall for fake news?**

Advancing technology and growth in social media use contribute to the spread of fake news. In fact, research shows that false news often spreads faster than real news online (Vosoughi, Roy, Aral, 2018). Regular users of social media are to blame for a lot of this spread, as they like, share and otherwise engage with posts containing misinformation. Online fake news can also be spread through bots. Ferrara et al.’s (2016) look at social bots describes a bot as “a computer algorithm that automatically produces content and interacts with humans on social media, trying to emulate and possibly alter their behavior.”

The novel challenge brought by bots is the fact they can give the false impression that some piece of information, regardless of its accuracy, is highly popular and endorsed by many, exerting an influence against which we haven’t yet developed antibodies (Ferrara et al.’s, 2016, pp. 98-99).

False news can spread through circular reporting, where one source publishes misinformation that is picked up by another news outlet, who cites the original source as evidence that the information is accurate. This continues as other news outlets report the misinformation and perpetuate the cycle.

Focusing on the reasons leading individuals to believe fake news we notice some determinants relate to the ecosystem of media and social networks, such as the availability and rapid spread of fake news, the unselected information on platforms and the fact that consumers can become creators of fake news (Beauvais, 2022). Cognitive factors are important, such as confirmation bias, political partisanship, prior exposure and intuitive thinking. Low science knowledge and

low educational level are also involved. Psychological factors include attraction to novelty, high emotional state and the emotionally evocative content of fake news (Beauvais, 2022).

Individuals do not take the time and energy to deliberate over the accuracy of the news they are exposed to. A study by Bago, Rand and Pennycook (2020) found that individuals were less likely to believe fake news when they were given the time and mental space to deliberate over the accuracy of different news headlines. This finding suggests that people fall for fake news online because they are encountering it as they scroll quickly through their newsfeeds.

### **Fake news and the US presidential elections in 2016.**

While history shows that false and misleading information is not a new phenomenon (Kapantai et al., 2021; Ortoleva, 2019), most observers seem to agree that misinformation, disinformation, and fake news have become much more prevalent during the last decade (Benkler et al., 2018; Kavanagh & Rich, 2018; O'Connor & Weatherall, 2019). Often cited reasons are the 2016 U.S. Presidential election and the Brexit referendum in 2016, that were both characterized by widespread disinformation and misinformation and – in the U.S. case – accusations of fake news. As a result, several scholars have argued that we currently live in a 'post-truth' era (Lewandowsky et al., 2017) or an 'misinformation age' (O'Connor & Weatherall, 2019). A BuzzFeed News analysis (Silverman, 2016) addressing the wide spread of fake news during the 2016 US election found that the top 20 fake election news stories, which rapidly expanded via Facebook, far outpaced the real election news from iconic media outlets such as the New York Times, Washington Post, Huffington Post and others. According to the same analysis, the top 3 fake election news that went viral in 2016 are: "Pope Francis supports Donald Trump", "Wikileaks confirms Hillary Clinton sold weapons to ISIS", "Hillary's email to ISIS leaked and it's worse than we imagined".

#### *Fake news on climate*

Long before the 2016 US elections, already in the 1980s, the biggest lie of the century had begun to be forged in the press: the claim that climate change does not exist, or even if it does, it is due to natural processes and not human activity. A significant part of the problem started by the media themselves. Much of the prevailing and mainstream media, particularly in the US and Australia, were manipulated by the coal industry, whose strategy was to raise doubt about climate science and therefore delay action (Lopez & Share, 2020).

The traditional media technique of "fair and balanced" coverage, which gave equal time to all sides of the argument, was essential to the big lie's crystallization. That practice led to a false equivalence of arguments. From 1988 to 2002, 53% of major US newspapers gave equal attention to both "sides" of the climate debate. According to Antonio Lopez and Jeff Share (2020), it is like giving equal TV airtime to an astrophysicist scientist and a flat-earth theory believer.

For decades, scientists have reported the data, facts and evidence that human-caused CO2 emissions are increasing the temperature of our planet. The evidence is overwhelming: The Intergovernmental Panel on Climate Change (IPCC), the UN's multi-stakeholder scientific body, highlights through its reports the **dominant role of humans in climate change**.

And yet a small powerful group of individuals have managed to create doubt in public perceptions with unfounded claims that ignore the scientific evidence. This false notion of a controversy and uncertainty, as Naomi Oreskes and Erik Conway (2010) have written about in their book, *Merchants of Doubt*, is not simply misinformation, it is actually a well-organized campaign of disinformation.

“Fact-checking is seen as a way to clear up any doubt on climate change information. Since about 2016, it has taken root in many countries as we have seen rampant misinformation on the topic,” said Hong Tien Vu (University of Kansas, 2022), associate professor of journalism & mass communications at Kansas University and lead author of the study *Fact-checking Climate Change: An Analysis of Claims and Verification Practices by Fact-checkers in Four Countries*.

The Kansas University research team (Vu, Baines, & Nguyen, 2023) analyzed nearly 500 examples of fact-checking on climate change information from the United States, United Kingdom, Germany and Australia conducted between 2015 and 2019. They found the fact-checks mostly focused on four aspects of climate change: existence, causes, impacts and solutions. The most effective examples provided visual information, cited sources and provided concise information for the public, researchers found.

The analysis showed that among the four aspects of climate change fact-checking, in the United States, most instances assessed claims about whether climate change really existed. Australian instances most often were fact-checking claims about solutions, In the United Kingdom, most instances regarded impact. Overall, about one-fourth of claims fact-checked were about its existence, again with most of those coming from the United States, and about 22% were regarding climate change effects.

In addition to types of claims checked, the study analyzed who was making the claim. Individuals, mainly politicians, followed by businesses/corporations and posts on social media, were the most common sources of information to be checked. Apart from Germany, where most checks were conducted to verify information from social media, the vast majority (about 81%) of claims were made by politicians. The majority of claims that were fact-checked originated from the United States, as more than 300 of the nearly 500 fact-checking instances took place here.

In addition to analyzing what types of claims were fact-checked and where, the researchers examined how the fact-checkers presented their information. They argue the most effective presentations included visual information, concise summations of their responses, documentation of their sources and a clear verdict as to whether a claim was true, false or misleading. Accessibility is key, as people often don't have time to read additional, lengthy

documents when they come across information they may doubt. And if they do, it needs to be information that people can understand and transparently share its source. Most fact-checking instances did provide their sources, including links to further information.

On the fact-checking platform Check4Facts.gr climate change is one of the four topics for which the team of fact-checkers carry out validity checks of statements or news. These validity checks are carried out both in statements by politicians and in statements by people who intervene in the public debate, in news related to climate change as shown in the media as well as in related claims as they are spread through social media.

In order to verify the validity/accuracy of statements or news, team members utilize academic research tools while applying investigative journalism and data journalism methods. To carry out the validity check, they draw information from publicly accessible sources, from specialist scientists and experts. When writing the audit report they always cite the sources from which their information comes and clearly refer to them. At the same time, they enrich their text with visual material, whenever it is available (tables, graphs, images, etc.), referring at the same time to the sources from which this report derives. Before reaching a conclusion about the accuracy of the statement or publication, they evaluate the evidence base collected and categorize the degree of accuracy of the statement or news item according to an "accuracy scale" that includes the designations "accurate", "relatively accurate", "relatively inaccurate", "inaccurate", "unverifiable". Accuracy classes are also color-coded: inaccurate-red, relatively inaccurate-orange, relatively accurate-turquoise, accurate-dark green.

### *Donald Trump denies climate change*

The most influential proponent of false and unsubstantiated climate claims is former US President Donald Trump. According to research conducted by VOX website (Matthews, 2017), from 2011-2015 he tweeted 115 times skepticism-expressing tweets about climate change! Most of them include some kind of confusion between climate and weather (e.g. he says "it's cold outside, global warming must be fake") or condemn President Obama for making climate change a priority, something Trump called silly, or interpreted climate change as an invention of the Chinese to strike the American economy.

Donald Trump never ceased to express his distrust about the causes of climate change. There have been more than a few times when he made misleading statements during interviews, for example on the "Good Morning Britain" TV show in the summer of 2019. Asked by presenter Piers Morgan whether he believes in climate change, he said, among others: "I believe that there's a change in weather and I think it changes both ways. Don't forget, it used to be called global warming, that wasn't working, then it was called climate change, now it's actually called extreme weather because with extreme weather you can't miss."

The fact checking organization "FactCheck.org" that reviewed this statement notes (McDonald, 2019) that "both terms, i.e. global warming and climate change, are still commonly used, and

their dual existence is not because the term “global warming” wasn’t “working”. Global warming from fossil fuels causes climate change. At the same time, extreme weather is a consequence of climate change, which is most often discussed, but not used by scientists in lieu of "climate change" or "global warming".

Donald Trump escalated his denial of global warming in a tweet, citing statements by noted climate sceptic Patrick Moore that climate change is a "fake science". Trump was, in essence, echoing Patrick Moore's comments on “Fox & Friends” show in Fox News channel, where they called Moore a co-founder of Greenpeace (BBC, 2019). According to Greenpeace, however, Moore is not a co-founder, but rather a "paid spokesman for a variety of polluting industries for more than 30 years” (Greenpeace, 2010).

Forbes magazine made an effort to respond to the hypothetical query on the possibility of financial ties between Donald Trump and the fossil fuel sector in an article titled "Meet The Billionaire Oil, Gas And Coal Tycoons Donating To Donald Trump" (Tindera, 2020). It said that the fossil fuel industry recognizes in Trump a natural ally and that is why 11 energy billionaires, and their spouses donated to his 2020 campaign. In contrast, only one gave to Joe Biden's campaign - and the then former vice-president, who promised not to take money from fossil fuel executives, sent that money back.

For their part, fossil fuel companies have spent billions buying rights to drill for oil and gas all over the world, which will be disastrous for the planet if allowed to continue. These colossal corporations stand to lose huge amounts of money if they do not adjust their practices, as countries gradually shift towards renewable energy sources. It is, however, ascertained that these companies are spending less on turning to cleaner energy sources and **more** on trying to convince people that climate change is fake (Lopez & Share, 2020). This questioning of the truth could not be more important at this pivotal moment in the journey of human civilization.

*Misinformation at the 28<sup>th</sup> UN Climate Change Conference (COP28), (30 November-12 December 2023, Dubai)*

Climate fake news thrived on the occasion of the 28<sup>th</sup> UN Climate Conference (COP28), held in Dubai. Oddities kept coming one after the other: the President of the Conference, Sultan Al Jaber, made statements against scientists calling for a reduction in fossil fuels in order to avoid a 1.5 degree rise in temperature above pre-industrial levels (Carrington & Stocton, 2023). “There is no science indicating that a phase-out of fossil fuels is needed to restrict global heating to 1.5C,” he said, making scientists concerned about the impact of his statement.<sup>7</sup>

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<sup>7</sup> Fact-checking platform Check4Facts conducted a validity check of the declaration on 28 February 2024 and concluded that the declaration is inaccurate (Check4Facts, 2024).

Al Jaber is, among others, CEO of Abu Dhabi's National Oil Company "Adnoc" and head of "Masdar", the UAE's renewable energy company. He also said that phasing out fossil fuels would not allow sustainable development "unless you want to take the world back into caves".

For his part, UN Secretary General António Guterres stressed to the conference delegates that "The science is clear: The 1.5-degree limit is only possible if we ultimately stop burning all fossil fuels. Not reduce. Not abate. Phaseout – with a clear timeframe aligned with 1.5 degrees."

The United Arab Emirates is a leading oil exporter known less for its climate commitments and more for the voracious resource consumption of its most populous city, Dubai. As reported in a New York Times article (Hsu & Myers, 2023), an internal document revealed the week before the summit that the United Arab Emirates planned to use their role as host country to pursue oil and gas deals around the world. As reservations were expressed by international observers about both the choice of venue and the head of the summit, there was an attempt through the social media to reverse the climate that had been created. According to Guardian (Carrington, 2023), in the summer of 2023, a disinformation expert in Qatar discovered at least 100 fake social media accounts defending the location of the summit and its chairman, UAE's oil executive Sultan al-Jaber.

#### *The Climate Action Against Disinformation report ahead of COP28*

According to a report examining climate information integrity ahead of COP28 and released by Climate Action Against Disinformation (Climate Action Against Misinformation, 2023), an international coalition of more than 50 environmental groups, among the largest sources of false or misleading climate-related information are influential states including Russia and China whose diplomats were attending the Conference, fossil fuel exporting companies and online provocateurs, who actually make their money by promoting claims that global warming is a hoax. According to the report, the lies being spread are that: 1. humans are not responsible for climate change, 2. the wildfires of summer 2023 have been caused by arsons and not by the warmer and drier climate conditions, 3. the earth is cooling, 4. the oil and gas giants direct their actions towards carbon neutrality, 5. warnings about the environment are not but an excuse for authoritarian elites to destabilize the developing world and force everyone into lockdown and a diet based on insects and lab-grown food.

The report makes a special reference to Russia where the government was found to use state media to describe the plans to cut greenhouse gas emissions as a kind of "western imperialism" meant to thwart the advancement of the so-called global south, which is made up of some of the least developed and poorest countries in the world.

As to China, the report notes that for years, the urges to combat climate change have been portrayed in the country as a tool used by the West to impede China's economic growth, rather than as an attempt to address a global issue. It also reports that Chinese state media targeted Greta Thunberg, falsely accusing her of calling for an end to the use of chopsticks and labelling

her a "Swedish princess" after her pressures on China for more greenhouse gas emission reductions.

Climate Action Against Disinformation's report, published a day before the UN conference on 29 November, also makes extensive reference to #climatescam, meaning "climate fraud": It finds that, every month since the previous UN Conference, COP27, (6 Nov 2022 - 18 Nov 2022) in Sharm El-Sheikh, Egypt, the #climatescam hashtag generated more retweets and likes than the #climatecrisis and #climateemergency hashtags on the X platform, former Twitter. The said hashtag was used in widespread posts falsely blaming immigrants for the largest wildfire ever recorded in Europe - the fire in Alexandroupolis (Greece) in August 2023 - and repeating assertions that TV stations were misrepresenting weather maps. The researchers attributed much of the #climatescam spread to a small group of highly influential accounts, which, they note, tended to be far more influential on climate denial on the X platform than on Facebook and Instagram.

*Misinformation and climate change in Greece: The Check4Facts news/statements verification platform*

In Greece, the President of Elliniki Lisi (Greek Solution) political party, Kyriakos Velopoulos, is one of the most influential purveyors of climate fake news. In the June 2023 national elections, he was voted for by 231,491 people, his party has 12 seats in the Greek Parliament (Ministry of Interior, 2023) and is followed by more than 27,000 people on Twitter (X/twitter, Kyriakos Velopoulos).

Check4Facts news/statements verification platform has identified two of his blatantly inaccurate statements:

The first one was on 10 May 2023, within the framework of the political leaders' debate, stating that "green energy cannot be stored" (Check4Facts, 2023).

On 2 August 2023, through his X platform account, he posted a text referring to the "Climate Change Fairy Tale" (Check4Facts, 2023).

While checking the 1<sup>st</sup> statement ("green energy cannot be stored"), which we identified as inaccurate, we found that there are already RES energy storage facilities both in Greece and abroad, whereas the National Energy and Climate Plan (NECP) provides for the development of storage systems (with pumped storage and accumulators). At the same time, the Recovery and Resilience Fund has earmarked resources for the implementation of related projects.

For the 2<sup>nd</sup> statement, we have consulted a large amount of available scientific evidence in order to justify that the statement is inaccurate, and that man-made climate change is undeniable. We consulted reports of the Intergovernmental Panel on Climate Change (IPCC), articles by NASA and the US National Oceanic and Atmospheric Administration (NOAA), and books.

Finally, for both fact-checking cases, we sought guidance from expert scientists. The Check4Facts Science news/statements verification platform has been operating since February

2022, with the support of nine research-academic institutions and the National Center for Social Research as lead agency. The project is led by Nikos Demertzis, Professor of Political Sociology and Communication in the Department of Communication and Media Studies at the National and Kapodistrian University of Athens.

The primary objective of this project, which combines investigative journalism and social research, is to investigate the accuracy degree of the information circulated by the media on four key issues: climate crisis, pandemic-health, immigration-refugees, crime.

The site already lists more than 150 publications, classified by investigative journalists according to the relevant scale, as "accurate", "relatively accurate", "relatively inaccurate", "inaccurate" and "unverifiable".

#### *How to conduct climate news fact checking. The fact checker's perspective*

Collection of statements/information to be checked is carried-out through continuous monitoring of the content of print and electronic media, websites of political persons and parties, public figures' social media accounts and parliamentary debates, whether live or recorded.

Statements or news items of high impact are selected. These statements either come from politicians or individuals participating in public debates or are widely disseminated through traditional media and social media.

Fact checkers draw information from the person who allegedly made the statement, from available raw and/or secondary data and cooperate with qualified scientists, officials and experts from public and private institutions.

Possible sources of climate-related data are, among others:

- the National Observatory of Athens website
- the UN Framework Convention on Climate Change (UNFCCC) website
- the European Environment Agency (EEA) website
- the United Nations Environment Programme (UNEP) website
- the National Aeronautics and Space Administration (NASA) and European Space Agency (ESA) websites
- the US National Oceanic and Atmospheric Administration (NOAA) website
- Intergovernmental Panel on Climate Change (IPCC) reports
- the International Energy Agency website
- the World Meteorological Organization (WMO) website

The conclusion-opinion drawn by a fact-checker on a piece of information should state the accuracy degree of a statement in a well-founded and clear manner, leaving aside any biased wording.



## Discussion

In the present study, after a short reference to the concepts of misinformation, disinformation and fake news and the causes of their dissemination, we focus on fake news about climate change, laying emphasis on the factors that led to the forging, through the press, of the false assertion that climate change does not exist or, if it does, it is due to natural processes and not to humans. We give some examples of inaccurate statements about climate change as made by political figures and refer to research that finds that among the biggest sources of false or misleading climate-related information, are influential states including Russia and China, fossil fuel exporting companies and online provocateurs.

We then describe how a fact-checker of Check4Facts.gr news/statements verification platform works when examining climate news/statements. The Check4Facts Science news/statements verification platform has been operating since February 2022, with the support of nine research-academic institutions and the National Center for Social Research as lead agency. On the platform, climate change is one of the four topics for which the team of fact-checkers carry out validity checks of statements or news. These validity checks are carried out both in statements by politicians and in statements by people who intervene in the public debate, in news related to climate change as shown in the media as well as in related claims as they are spread through social media. In order to verify the validity/accuracy of statements or news, team members utilize academic research tools while applying investigative journalism and data journalism methods. To carry out the validity check, they draw information from publicly accessible sources, from specialist scientists and experts. When writing the audit report they always cite the sources from which their information comes and clearly refer to them. At the same time, they enrich their text with visual material, whenever it is available (tables, graphs, images, etc.), referring at the same time to the sources from which this report derives. Before reaching a conclusion about the accuracy of the statement or publication, they evaluate the evidence base collected and categorize the degree of accuracy of the statement or news item according to an "accuracy scale".

As we underline, the conclusion-opinion drawn by a fact-checker on a piece of information should state the accuracy degree of a statement in a well-founded and clear manner, leaving aside any biased wording.

As to climate change misinformation, we highlight two cases of inaccurate statements as detected by Check4Facts news/statements verification platform. Both statements come from the chairman of the political party "Elliniki Lysis" (Greek Solution), Kyriakos Velopoulos. The first one was on 10 May 2023, within the framework of the political leaders' debate, stating that "green energy cannot be stored". The second was on 2 August 2023, through his X platform account, where he posted a text referring to the "Climate Change Fairy Tale".

It is important for people and journalists to be able to put an end to the flow of fake news, since credibility of public debate is an essential element of democracy itself. Moreover, fake news

distorts reality and disorients the public. When media repeat and spread lies, they contribute to undermining a basic foundation of democracy, the unbiased provision of reliable information to the public. These actions, should they remain unchecked and recurring, only benefit specific poles of power, allowing them to choose the versions of reality that best suit their political and economic interests. Given that fact-checking is not a “catch all” solution, we will conclude by proposing appropriate solutions to address climate change related fake news. These consist of media literacy, media reform and fact-checking by organizations whose independence and credibility can be guaranteed.

How can we counter the fake news on climate change? How can we identify and stop it?

1. **By media literacy**, i.e. critical thinking skills and fundamental research techniques to distinguish legitimate and authentic information from propaganda, disinformation, lies and blatant manipulation (Dame, 2022). People learn to seek the truth by accessing multiple sources, checking different data and making well-justified decisions based on facts and evidence. Given the informational overload to which a person is subjected, studies have found that another efficient strategy to stop the spread of disinformation is a proactive approach, called "prebunking" (preemptive debunking). This relies on the idea of "inoculating" people against disinformation, so that they are better trained to identify disinformation tactics when they are faced with them. Those who support prebunking (Lewandovsky and van den Linden 2021) believe that, just as in the case of a real vaccine, once a person comes in contact with a "weakened" version of the practice of disinformation, then they will become immune when encountering that practice in the real world. A study conducted by Roozenbeek, J., van der Linden, S., Nygren, T. (2020), also found that prebunking interventions based on “inoculation” theory can reduce susceptibility to misinformation across cultures. More specifically, the researchers found that analogous to the process of medical immunization, “prebunking,” or preemptively warning and exposing people to weakened doses of misinformation, can help cultivate “mental antibodies” against fake news. They conclude that social impact games rooted in basic insights from social psychology can boost immunity against misinformation across a variety of cultural, linguistic, and political settings. A series of studies summarised by Lewandowsky and van den Linden (2021) have shown the efficiency of inoculation against fake news. Thus, van den Linden et al. (2017) and Cook et al. (2017) both conducted an inoculation experiment where people were presented with disinformation about climate change as well as an inoculation treatment through warnings about disinformation techniques. Those who had received "inoculation" before seeing the particular piece of disinformation tended to rate the accuracy of the false statements as much lower than those that had not been exposed to the inoculation treatment.
2. **By reforming the media**, including more democratic-participatory forms of structural organisation of the media and placing climate emergency as a top editorial and corporate

priority. Canadian journalism scholar and activist, Robert A. Hackett, makes the following recommendations (Hackett et al., 2017): *Treat media as a “public good” (like roads, airports, etc.)*. Recognize that they are part of a commons. This includes strengthening alternative media, which provides diversity. *Revive trust in a democratic media through reform*. This can be achieved with a diverse strategy that includes: giving charity status for non-profit news; allow for a “Citizenship News Voucher” (such as contributing funds to an outlet of choice when filing taxes); create trusts (like The Guardian); set up cross-subsidization schemes by applying small taxes on telecoms, cable subscriptions, advertising or spectrum licenses; increase funding for public broadcasting; and fund multimedia community access centers. *Support alternative media (through grants, donations, subscriptions, patronage, etc.)*. There are many great research and news outlets producing excellent research and reporting, like “Democracy Now!”, “National Environment Reporting Network” and “Inside Climate News”.

One of the most inspiring media reform manifestos that came out was in the form of a letter by Extinction Rebellion’s Clare Farrell (climate activist) to The Guardian (Farrell, 2018) on how the BBC can change its climate reporting practices. This is worth quoting in its entirety because it’s a model that can be applied to any media organization (Lopez & Share, 2020):

“The director general, Tony Hall, agree to a meeting with a delegation from Extinction Rebellion to discuss how the BBC can tell the full truth on the climate and ecological emergency.

The BBC declares a climate and ecological emergency.

The BBC places the climate emergency as its top editorial and corporate priority by adoption of a climate emergency strategic plan, at the level of urgency placed on informing the public about the second world war.

The BBC to divest all pension funds, investments and bank accounts from fossil fuel corporations and their bankers.

The BBC, its subsidiaries and its supply chain to agree to be zero-carbon by 2025.

The BBC to publish an annual eco-audit of all BBC operations, including summary of key ecological and carbon data.

The BBC to take a lead on encouraging other national and global media corporations to join the global efforts to save humanity/nature from existential crises.

The BBC to only allow thinktank spokespersons on air to discuss the climate emergency whose funding is fully transparent. (“The Truth” – Extinction Rebellion)

Finally, media reform also entails breaking up media monopolies and turning companies like Facebook and Google into public utilities (Lopez & Share, 2020). The domination of media oligarchs leads to a kind of monoculture in the media ecosystem.

3. **By fact-checking** carried-out by organizations which can guarantee their independence and reliability. Fact-checking organizations are at the heart of the scrutiny procedure for information disseminated in the public sphere, mainly online, with combatting

misinformation being their main objective (Demertzis & Poulakidakos, 2024). Based on specific protocols, these organizations assess the accuracy of verifiable information circulating in the public sphere, either as statements or as news/references to facts, by investigating raw and/or secondary sources of data. This form of assessment of published statements and information seeks to hold politicians, journalists and other public stakeholders accountable for the accuracy of their statements. In the context of checking the validity of information introduced into the public sphere, fact-checkers look for reliable sources which can confirm or refute such information, either in whole or in part.

Contrary to the current prevailing trend of sensationalist journalism, rapid consumption and poor understanding of the concepts introduced in the public sphere, fact-checking the accuracy of public information advocates the logic of research, critical thinking, comparison of data and the search for the most appropriate sources. It highlights the need to consume and digest information content in a more responsible way, so that we can (co-)judge and formulate a reasoned opinion on what is happening in the public sphere (Demertzis & Poulakidakos, 2024).

## References

- Adnoc. *Our leadership*. Adnoc. <https://www.adnoc.ae/en/our-story/our-leadership> [accessed 20 January 2024]
- Bago, B., Rand, D.G., Pennycook, G., (2020). Fake news, fast and slow: Deliberation reduces belief in false (but not true) news headlines. *Journal of Experimental Psychology: General*, 149(8), 1608–1613. <https://doi.org/10.1037/xge0000729>.
- BBC. (2019, March 12). *Greenpeace hits back at Trump tweet on climate change denial*. BBC. <https://www.bbc.com/news/world-us-canada-47543905> [accessed 2 December 2023]
- Beauvais, C., (2022). Fake news: Why do we believe it?, *Joint Bone Spine*, Volume 89, Issue 4, 105371Jul;89(4):105371. doi: 10.1016/j.jbspin.2022.105371
- Benkler, Y., Faris, R., & Roberts, H. (2018). *Network propaganda. Manipulation, disinformation and radicalization in American politics*. Oxford University Press.
- Carrington D. (2023, June 8). *Army of fake social media accounts defend UAE presidency of climate summit*. The Guardian. <https://www.theguardian.com/environment/2023/jun/08/army-of-fake-social-media-accounts-defend-uae-presidency-of-climate-summit> [accessed 2 December 2023]
- Carrington D., Stocton B. (2023, December 3). *Cop28 president says there is 'no science' behind demands for phase-out of fossil fuels*. The Guardian. <https://www.theguardian.com/environment/2023/dec/03/back-into-caves-cop28-president-dismisses-phase-out-of-fossil-fuels> [accessed 4 December 2023]
- Check4Facts.gr. *Σχετικά (About us/Activities)*. Check4Facts. <https://check4facts.gr/about/project> [accessed 20 January 2024]

- Check4Facts.gr. *Σχετικά με την Δεοντολογία και την Μεθοδολογία του έργου (About the Ethics and Methodology of the project)*. Check4facts. <https://check4facts.gr/about/ethics> [accessed 20 January 2024]
- Check4Facts.gr. <https://check4facts.gr/> [accessed 20 January 2024]
- Check4Facts.gr, (2023, August 30). *Κυριάκος Βελόπουλος: Η πράσινη ενέργεια δεν αποθηκεύεται (Kyriakos Velopoulos: Green energy cannot be stored)*. Check4Facts. <https://check4facts.gr/article/173/display> [accessed 2 September 2023]
- Check4Facts.gr, (2023, October 2). *Το παραμύθι της κλιματικής αλλαγής (The climate change fairy tale)*. Check4Facts. <https://check4facts.gr/article/174/display> [accessed 5 October 2023]
- Check4Facts, (2024, February 28). *Δεν υπάρχει καμία επιστήμη που να λέει ότι η σταδιακή κατάργηση των ορυκτών καυσίμων είναι απαραίτητη για τον περιορισμό της υπερθέρμανσης του πλανήτη (There is no science that says that phasing out fossil fuels is necessary to limit global warming)*. Check4Facts. <https://check4facts.gr/article/192/display> [accessed 2 March 2024]
- Climate Action Against Misinformation, (2023, November). *Deny, Deceive, Delay (vol. 3), Climate Information Integrity Ahead of COP28*. Climate Action Against Misinformation. <https://caad.info/analysis/reports/deny-deceive-delay-vol-3-climate-information-integrity-ahead-of-cop28/> [accessed 2 December 2023].
- Cook J, Lewandowsky S, Ecker UKH (2017). Neutralizing misinformation through inoculation: Exposing misleading argumentation techniques reduces their influence. *PLoS ONE* 12(5): e0175799. <https://doi.org/10.1371/journal.pone.0175799>
- Dame Adjin-Tettey, T. (2022). Combating fake news, disinformation, and misinformation: Experimental evidence for media literacy education. *Cogent Arts & Humanities*, 9(1). <https://doi.org/10.1080/23311983.2022.2037229>.
- Demertzis, N., & Poulakidakos, S., (2024). Issue 43 - Preamble. *Science and Society: Review of the Political and Moral Theory*, 43, 3–10, recovered from <https://ejournals.epublishing.ekt.gr/index.php/sas/article/view/36884> [accessed 21 February 2024].
- Farrell, C., (2018, December 16). *BBC has a key role in tackling the climate emergency*. Letters, The Guardian. [BBC has a key role in tackling the climate emergency | Letters | The Guardian](https://www.theguardian.com/letters/2018/dec/16/bbc-has-a-key-role-in-tackling-the-climate-emergency) [accessed 3 November 2023].
- Ferrara, E., Varol, O., Davis, C., Menczer, F., Flammini, A., (2016). The rise of social bots, *Communications of the ACM*, Volume 59, Issue 7, pp 96–104, <https://doi.org/10.1145/2818717>
- Grant, M. (2015). *Roman historians: Information and misinformation*, Routledge.
- Greenpeace (2010, July 6). *Greenpeace Statement On Patrick Moore*. Greenpeace <https://www.greenpeace.org/usa/news/greenpeace-statement-on-patric/> [accessed 19 October 2023].
- Hackett R., Forde S., Gunster S., Foxwell-Norton K., (2017). *Journalism and Climate Crisis. Public Engagement, Media Alternatives*, Routledge.
- Hsu T., Lee Myers S. (2023, November 30). *Disinformation is one of Climate Summit's Biggest Challenges*, The New York Times. <https://www.nytimes.com/2023/11/30/technology/cop28-climate-disinformation.html> [accessed 5 December 2023].
- Intergovernmental Panel on Climate Change (IPCC). <https://www.ipcc.ch/> [accessed 3 November 2023].

- Kapantai, E., Christopoulou, A., Berberidis, C., & Peristeras, V., (2021). A systematic literature review on disinformation: Toward a unified taxonomical framework. *New Media & Society*, 23(5), 1301–1326. <https://doi.org/10.1177/1461444820959296>
- Kavanagh, J., & Rich, M. D. (2018). *Truth decay. An initial exploration of the diminishing role of facts and analysis in American public life*. Rand.
- Kim, B., Xiong, A., Lee, D., et al. (2021). A systematic review on fake news research through the lens of news creation and consumption: research efforts, challenges, and future directions. *PLoS One* 2021;16 [e0260080]. <https://doi.org/10.1371/journal.pone.0260080>
- Lazer, D.M.J., Baum, M.A., Benkler, Y., et al. (2018). The science of fake news. *Science* 2018;359:1094–6. DOI:[10.1126/science.aao2998](https://doi.org/10.1126/science.aao2998)
- Lewandowsky, S., Ecker, U. K. H., Seifert, M., Schwarz, N. C., & Cook, J. (2012). Misinformation and its correction: Continued influence and successful debiasing. *Psychological Science in the Public Interest*, 13(3), 106–131. <https://doi.org/10.1177/1529100612451018>
- Lewandowsky, S., & van der Linden, S. (2021). Countering Misinformation and Fake News Through Inoculation and Prebunking. *European Review of Social Psychology*, 32(2), 348–384. <https://doi.org/10.1080/10463283.2021.1876983>.
- Lopez, A., & Share, J., (2020, April 29). Fake Climate News: How Denying Climate Change is the Ultimate in Fake News. *Journal of Sustainability Education, Vol. 23, Ecomedia Literacy*. ISSN: 2151-7452. [Fake Climate News: How Denying Climate Change is the Ultimate in Fake News « Journal of Sustainability Education \(susted.com\)](https://www.susted.com) [accessed 2 October 2023].
- Masdar. *Our management*. Masdar. [Masdar | Masdar Renewables Board of Directors](https://www.masdar.gov.ae/en/about-us/our-management) [accessed 20 January 2024].
- Matthews D., (2017, June 1) *Donald Trump has tweeted climate change skepticism 115 times. Here's all of it*. Vox. [Donald Trump has tweeted climate change skepticism 115 times. Here's all of it. - Vox](https://www.vox.com/2017/6/1/15781118/donald-trump-climate-change-skepticism) [accessed 18 October 2023]
- McDonald J., (2019, June 7). *Trump Bungles Climate Change in UK*. FactCheck.org. <https://www.factcheck.org/2019/06/trump-bungles-climate-change-in-uk/> [accessed 19 October 2023]
- Ministry of Interior, (2023, June). *National Elections, Elliniki Lisi – Kyriakos Velopoulos*. Last update on 12/07/2023. Ministry of Interior. <https://ekloges.ypes.gr/current/v/home/parties/108/> [accessed 18 October 2023]
- O'Connor, C., & Weatherall, J. O. (2019). *The misinformation age. How false beliefs spread*. Yale University Press.
- Oreskes, N., & Conway, E. M. (2010). *Merchants of doubt: How a handful of scientists obscured the truth on issues from tobacco smoke to global warming*. New York, NY: Bloomsbury Press.
- Ortoleva, P. (2019). Canards, Fausses Nouvelles, paranoid style. Classic authors for an emerging phenomenon. In J. E. Katz & K. K. Mays (Eds.), *Journalism & truth in the age of social media* (pp. 119–132); Oxford University Press. <https://doi.org/10.1093/oso/9780190900250.003.0009>
- Roozenbeek, J., van der Linden, S., & Nygren, T. (2020). Prebunking interventions based on “inoculation” theory can reduce susceptibility to misinformation across cultures. *Harvard Kennedy School (HKS) Misinformation Review*. <https://doi.org/10.37016/mr-2020-008>

- Shahi, G. K., Dirkson, A., & Majchrzak, T. A. (2021). An exploratory study of COVID-19 misinformation on Twitter. *Online Social Networks and Media*, 22, 100104. <https://doi.org/10.1016/j.osnem.2020.100104>
- Silverman, C. (2016, November 17). *This Analysis Shows How Viral Fake Election News Stories Outperformed Real News On Facebook*. BuzzFeednews. <https://www.buzzfeednews.com/article/craigsilverman/viral-fake-election-news-outperformed-real-news-on-facebook> [accessed 18 September 2023]
- Tindera M., (2020, June 26). *Meet The Billionaire Oil, Gas And Coal Tycoons Donating To Donald Trump*. Forbes. <https://www.forbes.com/sites/michelatindera/2020/06/26/these-are-the-energy-oil-and-gas-billionaires-donating-to-donald-trump/?sh=6f3bd0127d59> [accessed 19 October 2023]
- University of Kansas. (2022, December 12). *Study analyzes how fact-checkers from four different countries assess climate change claims*. ScienceDaily. <https://www.sciencedaily.com/releases/2022/12/221212140623.htm> [accessed 7 October 2023]
- Van der Linden, S., Leiserowitz, A., Rosenthal, S., & Maibach, E. (2017). Inoculating the Public against Misinformation about Climate Change. *Global Challenges*, 1(2), 1600008. <https://doi.org/10.1002/gch2.201600008>
- Vosoughi, S., Roy, D., Aral, S., (2018). The spread of true and false news online. *Science* 2018;359:1146–51. <https://doi.org/10.1126/science.aap9559>
- Vu, H. T., Baines, A., & Nguyen, N. (2023). Fact-Checking Climate Change: An Analysis of Claims and Verification Practices by Fact-Checkers in Four Countries. *Journalism & Mass Communication Quarterly*, 100(2), 286-307. <https://doi.org/10.1177/10776990221138058>
- X/twitter, Kyriakos Velopoulos. [Κυριάκος Βελόπουλος \(@velopky\) / X](https://twitter.com/velopky) [accessed 5 August 2023].

# The Online Communities & the sense of belonging in Digital Journalism

Eva Karolidou\*

## Abstract

In recent years, the landscape of traditional journalism has undergone significant transformation due to the rise of the Internet and the advent of Web 2.0. This transformation has led to the emergence of novel modes of communication and interaction, facilitating greater participation of reader-users in the news production process. These new communication avenues, often referred to as "online communities," have gradually gained prominence, reshaped established patterns of digital communication, and altered the dynamics of information consumption, production, and distribution. Scientific inquiry into these online communities, which often accompany news websites as an additional feature, focuses on the shared interests that unite members worldwide, transcending geographical boundaries. In Greek literature, there is limited exploration of successful Greek-speaking online communities that have arisen through news platforms. This study aims to shed light in this area through a case study that was conducted via a semi-structured interview with the creator of the highly acclaimed column "A, Mpa" on LiFO and founder of the feminist-oriented platform "Womanlandia," which actively encourages reader participation in commenting and selecting article themes. This research focuses on initially understanding the landscape through the insights of the interviewee. Analysis revealed that user-generated comments play a vital and organic role in shaping articles. Additionally, the article format can be described as "alternative," as there is a deliberate effort to balance news content with reader commentary, aiming to establish a community-driven platform featuring diverse articles. This approach sets initiatives like "Womanlandia" apart from traditional media companies.

**Keywords:** Online communities, digital journalism, communication, interaction, new media, case study, interview.

## Introduction

The term "online community" encompasses various research domains in literature, reflecting the diverse array of online communities that are present today. These communities include educational platforms, business or service promotion forums, and platforms dedicated to raising awareness about environmental or social issues. Each online community caters to a specific audience, operates with its own communication objectives, covers distinct subject matters, and provides unique incentives for participants.

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This study explores the development of online communities within the realm of digital journalism, as well as the emergence of a sense of "belonging." This research is based on a case study; data collection was performed via the method of expert interviews which was conducted with Lena Foutsitzi, the creator of the highly acclaimed column "A, Mpa" on LiFO and the founder of the feminist-oriented platform "Womanlandia". Experts interviews as employed method is widely utilized in theoretical sciences for its capacity to yield firsthand information (Dorussen, Lenz, & Blavoukos, 2005). Specifically, for the purposes of the study the semi-structured interview technique was utilized.

The rest of the paper is structured as follows, initially the literature review is introduced, then the methodology employed is analyzed and the results of the research are presented. Consequently, the conclusions of the study are discussed aiming to deliver meaningful context to the readers.

The advent of Web 2.0 has brought about significant changes in the field of journalism, both academically and professionally. This shift has created a highly competitive online environment, compelling news websites to explore new methods of engaging readers (Podara, Matsiola, Maniou, & Kalliris, 2019). One interactive approach to achieve this goal, while also promoting participatory journalism and diversity of perspectives, is to encourage reader participation in news production through commenting. Indeed, the comments' section fosters increased interaction between internet users—readers—and journalists and editors, a dynamic that was much more intricate during the traditional era of newspapers (Ksiazek, 2018). Drawing on literature, the concept of "participatory journalism" aligns with the active involvement of readers in the news process. Moreover, a primary objective of participatory journalism is to foster meaningful dialogue among readers.

In the early years of the previous decade, there was considerable enthusiasm surrounding participatory styles of journalism and the integration of content generated by users. This trend was fueled in part by aspirations for a more democratic and inclusive approach to journalism, aiming to incorporate input from "the people," as well as by the financial aspirations of media executives. Online news outlets engaged in numerous experiments with different methods of user involvement. Concurrently, there was a sense of both detachment and anticipation within journalism research circles, prompting discussions about reimagining the nature of public communication and the field of journalism studies (Frischlich, Boberg, & Quandt, 2019).

## **Literature review**

Discussions regarding current events occur within the framework of news media, both in public forums and institutional settings, traditionally recognized as integral to the public sphere. As per the Habermasian perspective, the public sphere denotes the domain of civil society grounded in normative principles (Habermas, 1965). Primarily perceived as a national arena for civic deliberation and the shaping of public opinion, the public sphere encompasses governmental structures and associated entities where individuals engage in discourse through

tangible or intangible public forums. Consequently, mass media has historically served as the primary vehicle for public discourse. Various viewpoints are pivotal in delineating the essence of modern public discourse, encompassing the notions of the public sphere and the influence of mass and social media.

Commenting in online discussions fails to foster a universal and shared comprehension among participants, as reactions are influenced by the diverse backgrounds, perspectives, and values of individuals inhabiting their own private spaces. Instead, the divergence of conflicting and polarizing opinions arises from the heterogeneous nature of engagement within discussion platforms and other forms of social interaction. Marwick and Boyd (2011, p. 123) argue that both traditional and social media platforms lack the capability to facilitate nuanced negotiations, leading to what they term "context collapse" – the blending of distinct social contexts. Participants operate as isolated entities within their everyday environments, promptly responding to news events and issues in their vicinity. Nevertheless, news discussions unfold as scripted social exchanges occurring within institutional media platforms, prompting intriguing comparisons with discussions on social media (Johansson, 2017).

It's important to note that the accuracy of news is essential for establishing trust between a media platform and its readers, who are more likely to engage in online discussions when they feel confident about the information presented. This dynamic can be viewed as a form of reciprocal exchange, facilitating the development of a relationship between readers and the news platform, grounded in credibility and impartiality (Fletcher, & Park, 2017). Therefore, fostering an environment of free expression in comments fosters increased participation, interaction, and diversity of viewpoints, which are highly valued by numerous online media websites (Marchionni, 2015). Allowing individuals the freedom to express their opinions in their own way is crucial for fostering trust between news organizations and their audiences.

The community's perception of newspapers' connectedness to the community largely hinges on their institutional reputation (Toff et.al., 2021). When it comes to online platforms, users tend to assess credibility based on content rather than the medium itself. Consequently, the credibility of online publications is often associated with the publication rather than any specific journalist (Hajli, Sims, Featherman, & Love, 2015). Moreover, public perception of the media is more positive when people are familiar with it. Readers are more inclined to participate in interactive features, like submitting letters to the editor or news tips, when they have a strong relationship with the news organization. However, this does not mean individual reporters are insignificant in influencing the public's engagement with online news. A reporter's personal expertise adds a layer of credibility that complements the institutional credibility of the publication. Journalists' engagement with the public fosters a stronger sense of community and encourages greater participation in discussions (Breiner, 2016).

Participatory journalism involves citizens actively contributing to news production alongside professional journalists. This collaboration occurs both within mainstream media platforms and through the integration of user-generated content acquired from sources outside traditional

media channels. At the core of conventional definitions of participatory journalism is the engagement of the public within the structured environment of professional journalism. According to Borger (2016), this professional journalistic context refers to journalists operating within established standards and protocols, with hierarchical structures or training, employed by reputable news organizations, and compensated for their contributions (Saridou, 2022).

These contributions, along with the discussions happening on a news website, promote freedom of thought and expression, while also serving as a hub for users who share similar perspectives. Conversely, aggressive, or offensive comments discourage reader participation, as they may feel directly or indirectly insulted or threatened. However, in contemporary discourse, there's a dilemma regarding whether and to what extent it's appropriate to delete malicious comments. This dilemma arises because deleting comments can protect readers, but it also raises concerns about censorship.

Therefore, if a media platform establishes trust with its audience, it becomes easier to foster an engaged community of readers who actively participate by sharing their viewpoints. This forms a mutually beneficial cycle of actions for both the news outlets and the readers. Constructive engagement through commenting facilitates interaction and the exchange of new information, which can serve as valuable material for future reporting. For instance, in "Womanlandia," community members/readers can propose topics of interest, guiding the editorial direction.

Another significant area of concern revolves around the removal of user comments and the potential equivalence to censorship. User-contributed comments present a dual-edged dynamic: While they enhance user engagement, foster online community building, and can offer valuable content to both readers and journalists, not all comments hold the same merit. Some comments may lack quality in terms of language, tone, or accuracy, potentially deviating from the standards upheld by the news outlet. Thus, while there's merit in incorporating reader comments into online articles, moderation becomes essential to ensure that published comments align with the outlet's guidelines.

Filtering out low-quality comments only tackles part of the issue; reputable news publishers also aim to highlight high-quality comments that effectively contribute to the article's discourse and uphold the site's ethos. However, employing crowdsourced approaches comes with its own challenges: They lack editorial oversight, potentially leading to biases, and fail to ensure balanced representation. Managing and moderating online news comments proves challenging due to the sheer volume of content and the need for moderators to grasp nuanced contexts, especially when dealing with sensitive or political topics. Various strategies, such as post-moderation, have been implemented to address scalability concerns, as leaving comments unmoderated can swiftly lead to degradation in quality (Park, Sachar, Diakopoulos, & Elmqvist, 2016).

The concept of news-mediated public discourse refers to the platforms provided by news organizations for public engagement on issues arising from news events. The evolution of

participatory journalism has transitioned from traditional gatekeeping roles of journalists, such as managing letters to the editor, towards a more inclusive approach that considers factors like civility and decency. However, diverse stakeholders have contrasting expectations regarding the norms governing these discourse spaces. Reader's view comment sections as arenas for exercising free speech, where mutual respect and self-regulation could enhance the quality of interactions. Commenters advocate for more community-driven moderation tools, rather than relying solely on journalists as gatekeepers, while also expecting respect, credibility, and transparency from fellow participants. Journalists perceive the audience as a community and often use comment volume as an indicator of community quality and engagement. They value comments that engage with journalistic content or contribute additional information beyond the story (Podara et al., 2021). Ideally, journalists prefer commenters who adhere to rules, stay on topic, make genuine efforts, and defer control of the space to the journalistic authority (Wolfgang, 2016).

### **Research methodology**

Since the subject under study, to the researcher's knowledge, is not yet investigated in the Greek media reality, it was decided to start the exploration with a case study with a very significant online community that was a pioneer in the area. Therefore, in order to enhance and complement the information derived from the literature, it was deemed necessary to conduct an interview with Lena Foutsitzi, owner of the "Womanlandia" platform and creator of the renowned "A,Mpa" community on LIFO. It should be noted that this is the first in a series of interviews that will be conducted to draw secure conclusions regarding how online communities develop in digital journalistic environments, what their advantages and disadvantages are, what motivates users to participate, and how the concept of belonging emerges in relation to the existential human need to belong to a social group.

"Womanlandia" hosts a plethora of articles with a feminist orientation, while also strongly encouraging reader participation to build a robust community. The interview focused on the creation of "Womanlandia," the potential challenges that arose, the significance of participation, the interaction among users, as well as between users and writers. Finally, questions were raised regarding the management of aggressive or abusive comments.

The semi-structured interview was selected as the methodological tool since the point was to let the interviewee deploy her aspects while also signifying the research points of interest. The interview with Lena Foutzizi comprised 13 inquiries, categorized into sections. The methodology, the objectives, and the principles behind establishing the online platform "Womanlandia," were the initial questions since it was deemed necessary to understand the challenges faced and the way they were addressed. Furthermore, the financial aspects and the sustainability of the endeavor were asked since it is crucial to comprehend how financial stability may be achieved while running a participatory medium. Finally, the feeling of

inclusion experienced by members, and strategies for handling malicious comments and the approach in such situations were inquired.

The interview was transcribed and thematically coded following the sections of the questionnaire. As it is an initial case study, the researcher's interest lays in mapping the field under investigation, thus, the analysis performed was focused on the correlation of the answers to the existing literature.

## **Results**

The rapid growth of the "Womanlandia" online community is likely attributed to its founder herself. Specifically, Lena Foutsitzi was initially the creator of perhaps the most popular Greek-speaking online community, "A,Mpa" on LIFO (<https://www.lifo.gr/>), which also serves as a well-known media outlet. Specific feature of "A,Mpa" was its humorous yet realistic perspective on every issue under discussion, gradually resulting in a huge audience: the "Ampaholics". Therefore, the notable popularity of "A,Mpa" served as the driving force behind a new platform with a feminist approach: "Womanlandia". Therefore, the members of the newly established community were familiar with and sought out this type of interaction.

The concept of the online community in "Womanlandia" began with comments, with the founder herself describing them as "jewels." Gradually, through the contribution of readers/members, the community expanded more and more. Therefore, at some point, public participation became crucial for the existence of this online community itself to such a great extent, as well as the articles. It is worth mentioning that there is trust between the writers and the readership audience, so opinions are shared in the comments without, however, undermining the work of the respective writer or attempting to discredit it.

After the interview was completed, certain conclusions emerged regarding the existence of an online community in a digital journalism environment. Every online community, as previously noted, possesses distinct features and communication objectives. Given this, Lena Foutsitzi's explanation was deemed essential in elucidating why "Womanlandia" qualifies as an online community:

*“The inception of the "Womanlandia" online community was sparked by remarkably relevant comments. Presently, comments have become indispensable alongside articles; they complement each other seamlessly. Many individuals visit primarily for the insightful discussions in the comments section. [...] Encountering numerous like-minded women and experiencing a sense of connection is truly enchanting. Reading comments that resonate deeply with your thoughts and feelings creates a comforting warmth. I gain valuable insights from the comments I peruse daily”.*

Regarding the participation of readers/users in an online community, this choice likely stems from the existential need of individuals to be part of a social group, even if it now develops

within the realm of the internet. In this way, the sense of "belonging" is constructed. A collective sense of identity and interpersonal connections can contribute to fostering a feeling of "belonging," a significant motivation for individuals engaging in online communities. Smaller groups may find it easier to establish a cohesive shared identity compared to larger ones, although larger groups' increased activity levels may enhance the likelihood of receiving responses and feeling acknowledged. It's worth noting that smaller communities excel in fostering connections among users, as the same individuals are more likely to interact repeatedly, thus creating opportunities for deeper social and interpersonal relationships (Hwang & Foote, 2019).

Furthermore, within online communities like "Womanlandia," tends to be initiated a shared philosophy and empathy that emerges among members. This often transforms mere coexistence in the online space into social connections or even friendships in many instances. Moreover, with the imminent rise of Web 2.0, every tool and form of social assembly became integrated into the digital public sphere. From this perspective, the need for digital interaction among people who share common interests, perceptions, or concerns naturally transferred to the internet, potentially evolving into human relationships or friendships later. The importance of engaging in an online community, rather than solely consuming or sharing articles was further discussed with Lena Foutsitzi:

*“For some individuals, merely consuming content or expressing their views suffices. However, I believe the desire to belong to a community is one of the strongest urges we experience—it's existential. Without being part of a group where we feel empathy and connection, we face profound rejection. Imagine someone who lacks a sense of belonging to a community—it's the loneliest state. We crave being part of something larger than ourselves; it provides immense support and companionship. Very few can thrive in isolation”.*

Through the comments, readers engage in productive dialogues, identifying with, agreeing, or disagreeing within the framework of interest of the respective article. Most of the time, disagreements occur at healthy levels, without insults and obscenities. In short, such a reality could easily be likened to the way every social setting operates, where dialogue takes place, there is room for every opinion, and there is always something beneficial from interacting with fellow citizens. It's more of a kind of informal learning, exchanging knowledge and opinions, through which, ultimately, everyone evolves to a greater or lesser extent.

In terms of aggressiveness in the comments, there have been instances in "Womanlandia" where members of the online community made aggressive or offensive comments, creating a polarized atmosphere in the environment. In these cases, as well as more generally, filtering comments becomes an urgent necessity to effectively protect the remaining members of the community. Moreover, it is neither pleasant nor constructive for certain opinions to be met with gunfire and insults, given that the purpose of the online community is pluralism and democracy, without,

however, being abused by some malicious users. The discussion addressed the occurrence of rage, anger, and/or aggressive behavior that occasionally surfaces within comments:

*“We've addressed instances of comments that weren't politically correct. The most significant occurred between two elections, sparking a sharp political divide. Disagreement is expected in debates. Presently, such comments are infrequent, often veering towards passive aggression. Online communities tend to attract aggressive users in general. Anonymity often leads to altered behavior; a pseudonym can sometimes evoke negative traits. Internet frustration is a widely studied global phenomenon”.*

Of course, comment moderation also presents a series of challenges for those working within the online community, as the lines between expressing an opinion and becoming aggressive or offensive are very thin. Therefore, the deletion of comments continues to concern both industry professionals and the scientific community to this day, as it remains uncertain whether such actions constitute censorship or protection of the online community from the toxicity of some users. A primary reason why conflicts may arise among members of an online community is when some of them misunderstand the purposes and philosophy that permeate the community. Consequently, a negative reaction from these users is possible. Additionally, aggressive tendencies may arise because of major socio-political phenomena, as anything happening in a country cannot leave citizens unaffected. So, a significant portion of them may express their accumulated anger in cases where they feel shielded by the anonymity provided by the internet:

*"People often interpret what they read based on their own experiences and assume it's directed at them, even when it's not. Consequently, this can lead to responses that might be hurtful or upsetting. Learning to navigate this is crucial, and many individuals are now engaging with online platforms and writing with this awareness in mind."*

*"We maintain moderation to safeguard our readers, who are also stakeholders by virtue of their financial support. This prevents unwarranted attacks from outsiders targeting those who contribute."*

Subsequently, the method of creating and operating an online community like "Womanlandia" was discussed. According to Lena Foutsitzi, this was a significant investment of time, human, and financial resources, as a platform of similar scale offers many different functions, provides a payment system, personal data security, etc. The chosen business model was subscription-based, a rather original choice for Greek standards at least, as most of the similar digital journalism websites secure their economic sustainability through advertisements of other companies. However, the subscription-based model may potentially strengthen the construction of a robust online community because only those users willing to dedicate their time and money will participate. At the same time, this business model directly impacts the quality of articles

precisely because they are aimed at a specific community of people with common interests, problems, and expectations, without desperately seeking to attract companies for advertising.

Finally, discussion was deployed about the journalistic approach of "Womanlandia". What sets it apart is the fact that it doesn't simply stick to the bare recording or transmission of news. It doesn't try to offer a news feed, broadcasting news in real-time. In fact, the news is presented from a different perspective, while efforts for interpretation and analysis are made and society's needs are always at the center. In this way, fertile ground is provided for conducting discussions, while simultaneously ensuring the uniqueness of the content.

## **Discussion**

Although the data from the mentioned research aligns with existing bibliographic references (Foote & Hwang, 2021), (Johansson, 2017) further comprehensive studies are required within Greek-speaking online communities. This is necessary as there is a lack of confirmed scientific conclusions in this specific thematic area. It is important to further study, on a scientific level, the "sense of belonging" that arises from participation in an online community and how this characteristic aligns with participatory journalism in digital environments. What is certain is that both journalism and the existential need of individuals to belong to a social framework are constantly evolving based on notable technological advancements. The imminent rise of Web 2.0 has caused fundamental changes at all levels, dragging along what was once called social interaction, immediate information, interaction, and expression of opinions.

Although the public sphere of the internet enhances pluralism and democracy, as it accommodates every perspective on every issue, many questions arise about how frequently aggressive behaviors occur, thus undermining the credibility of an online media outlet on the one hand and discouraging other users/readers from participating in public discourse on the other. Of course, managing this issue requires increased attention, as comment deletion may be considered strictly authoritarian practice, constituting censorship. On the other hand, if a particular digital media outlet remains indifferent, it may encounter unpleasant surprises, with a flood of toxic comments that question the painstaking journalistic work, offend, and denigrate other readers, etc.

Apart from that, critical discourse analysis unveils how community members express their views and opinions on various topics. Understanding which comments are retained and which are deleted after evaluation provides valuable insights into community norms and moderation practices. Identifying potential misconduct within online communities is essential for maintaining a healthy and inclusive environment. By recognizing manifestations of misconduct, such as harassment or trolling, community managers can implement effective strategies to address these issues and uphold community standards. Finally, the possibility of propaganda and misinformation spreading through user-generated content is a pressing concern. Understanding how misinformation spreads and its impact on online communities can



inform strategies for combating false information and preserving the integrity of online platforms.

#### *Limitations and Future work*

One primary constraint of the study is the limited number of Greek online communities currently evolving within journalistic websites. Nevertheless, this constraint does not necessarily impede the acquisition of valuable data for research advancement. Several crucial parameters to address for the continuation of research include: First, what drives individuals to engage in online communities is a topic of interest. Understanding the motivations behind participation can shed light on the dynamics of virtual communities and inform strategies for fostering engagement. Also, examining the impact of online community involvement on social dynamics reveals intriguing insights. Participation may facilitate networking opportunities, but it also has the potential to contribute to feelings of isolation. Understanding these dynamics is crucial for designing supportive online environments.

#### **References**

- Bailey, S., & Williams, K. (2021, September 07). Online Comment Sections: Does Taking Them Down Enhance or Hurt Dialogue in a Democracy? *Journal of Media Ethics*, 37(4), 285-287.
- Boberg, S., Frischlich, L., & Quandt, T. (2019, January 11). Comment Sections as Targets of Dark Participation? Journalists' Evaluation and Moderation of Deviant User Comments. *Journalism Studies*, 30(14), 2014-2033.
- Breiner, J. (2016, April). The Economics of Accountability Journalism: What Price Is Right? *International Symposium of Online Journalism*, 6(1), 91-109.
- Deokgun Park, Simranjit Sachar, Nicholas Diakopoulos, and Niklas Elmqvist. 2016. Supporting Comment Moderators in Identifying High Quality Online News Comments. In Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems (CHI '16). Association for Computing Machinery, New York, NY, USA, 1114–1125.
- Dorussen, H., Lenz, H. and Blavoukos, S. (2005). "Assessing the reliability and validity of expert interviews", *European Union Politics*, 6(3), pp. 315-337.
- Fletcher, R., & Park, S. (2017). The impact of trust in the news media on online news consumption and participation. *Digital journalism*, 5(10), 1281-1299.
- Foote, J., & Hwang, S. (2021). Why do people participate in small online communities? *ACM Human-Computer Interaction*, 1-25.
- Hajli, M. N., Sims, J., Featherman, M., & Love, P. E. (2015). Credibility of information in online communities. *Journal of Strategic Marketing*, 23(3), 238-253.
- Huang, X., & Tausczik, Y. (2020, December). Knowledge generation and sharing in online communities: Current trends and future directions. *Current Opinion in Psychology* (36), 60-64.
- Johansson, M. (2017, March 21). Everyday opinions in news discussion forums: Public vernacular discourse. *Discourse, Context & Media*, 19, 5-12.

- Ksiazek, T. B. (2016, August 02). Commenting on the News: Explaining the degree and quality of user comments on news websites. *Journalism Studies*, 19(5), 650-673.
- Ksiazek, T. B. (2018). Commenting on the news: Explaining the degree and quality of user comments on news websites. *Journalism studies*, 19(5), 650-673.
- Ksiazek, T. B., Nelson, M. N., & Springer, N. (2021, October 12). Killing the Comments: Why Do News Organizations Remove User Commentary Functions? *Journalism and Media*, 2(4), 572-583.
- Littig, B. and Pöchhacker, F. (2014). “Socio-translational collaboration in qualitative inquiry”, *Qualitative Inquiry*, 20(9), pp. 1085-1095.
- Manzano, A. (2016). “The craft of interviewing in realist evaluation”, *Evaluation*, 22(3), pp. 342-360.
- Marchionni, D. (2015). Online story commenting: An experimental test of conversational journalism and trust. *Journalism Practice*, 9(2), 230-249.
- Podara, A., Giomelakis, D., Nicolaou, C., Matsiola, M., & Kotsakis, R. (2021). Digital storytelling in cultural heritage: Audience engagement in the interactive documentary new life. *Sustainability*, 13(3), 1193.
- Podara, A., Matsiola, M., Maniou, T. A., & Kalliris, G. (2019). News usage patterns of young adults in the era of Interactive Journalism. *Strategy & Development Review*, 9.
- Saridou, Th. (2022). *Participatory journalism: Practices, challenges, and perspectives*. PhD Thesis. Thessaloniki: Aristotle University of Thessaloniki.
- Toff, B., Badrinathan, S., Mont’Alverne, C., Ross Arguedas, A., Fletcher, R., & Nielsen, R. (2021). Listening to what trust in news means to users: Qualitative evidence from four countries. [Report] Reuters Institute for the Study of Journalism.
- Wolfgang J. D. (2016). Pursuing the Ideal, *Digital Journalism*, 4(6), pp. 764-783.

## **The public's active participation in news: The role of the voluntary radio of Thessaloniki**

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*For Nafsika*

### **Abstract**

Nowadays, one of the main axes of study of modern journalism is the participation of the public in the news production process, which is complex and multidimensional. The concept of public participation in the production of news is defined as the action taken by the public to influence the content of the news through their intentional actions. The aim of this research is to investigate the role of the active participation of citizens in the production of radio content and in the formation of listening options through the case study of the voluntary radio of the municipality of Thessaloniki. Semi-structured interviews were conducted among four individuals and head of institutions that used to host radio shows in the voluntary radio of the municipality of Thessaloniki. Through the content analysis it was concluded that this form of news production process promotes pluralism and citizens' access to a wide range of information while it strengthens the identity of specific communities and enables them to encounter the wider social spectrum. Furthermore, it promotes the fight against negative stereotypes and familiarization with social groups, which are at risk of social exclusion by contributing to awareness, engagement and participation of local communities.

**Keywords:** community media, participatory journalism, voluntary radio, experts' interviews.

### **Introduction**

Lately, mainly through the proliferation of social media, the participation of citizens in informing and shaping the news is a reality. Furthermore, listening to radio content is a daily habit for a large percentage of the public. Radio is considered a traditional medium, however through processes that derive from the local communities and affect them, it can be used as a medium of implementing participatory journalism. It can significantly contribute to the awareness, engagement and participation of the local communities and even more generally of the civil society, in issues such as culture, creativity, charity, solidarity, environmental awakening, mutual understanding, dealing with all kinds of crises (social, energy, economic, food, etc.), etc.

In a global media environment, citizen and institution initiatives that express their opinions and also self-express through their participation via a voluntary radio program can offer an alternative public sphere (Van Vuuren, 2001). The operation of the voluntary radio, globally, is

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based on citizen participation, and in its programs the cultural diversity is encouraged, all ideas are discussed, and all opinions are respected as a matter of principle and not as a concession (Foxwell, 2017). They fit into a context of communication and information beyond specific media institutions as a tool to increase public debate and communication, closer to an ideal public dialogue (Tucker, 2013) and aim to resonate through cultural dialogues about community and place (Meadows, Forde, Ewart, & Foxwell, 2009). The term community radio, and more generally community media, identifies community media organizations primarily based on community involvement and less based on geographic area, ownership, or sources of financial support (Hayes, 2018). In some cases, community radios are part of organizations that also have other educational, cultural and/or communication activities and are an alternative way of information, strengthening civil society and awareness of various issues.

The aim of this study is the investigation of the role of the active participation of citizens in the production of radio content through the case study of the voluntary radio of the municipality of Thessaloniki, which is the only one of its kind in Greece. The way that promotes the active participation of citizens in its program will be sought, as it is composed exclusively of broadcasts by volunteers, belonging to all kinds of groups and collectives, with content based on their interests and their subjects of knowledge. In this context, this study will attempt to identify and analyze the audience's will at the level of participation during information transmission and via shaping radio content.

Experts' interviews were used as a methodological tool since the research is still in an exploratory phase and this is considered an efficient and concentrated method of qualitative data collection.

The questions that this research seeks to answer are:

RQ1: What are the reasons that could lead an individual or an institution to present a program on voluntary radio?

RQ2: What is the assessment of the participation on voluntary radio?

RQ3: What is the overall opinion about voluntary radio as a medium based, not on the presentation of current affairs, but on issues of interest to society?

To answer those questions, four semi-structured interviews were conducted via email with participants that either represented themselves or an institution as radio producers during the time that the voluntary radio of Thessaloniki broadcasted.

In the rest of the paper, initially the literature review, focused on participatory journalism and community media is introduced along with the characteristics of the voluntary radio of Thessaloniki. Next, the methodology employed is presented and the derived results are analysed. Finally, the conclusions of the study are discussed.

## **Participatory journalism**

Nowadays, one of the main axes of study of modern journalism is the participation of the public in the news production process, which is a complex and multidimensional process. Citizen journalism, which as a term began to be widely used from the beginning of the 2000s, in addition to the spread of digital technologies that facilitate the procedures, also appeared because of the crisis in the credibility of professional news (Turner, 2010). According to Carpentier (2012), access, related to technology, content, people and organizations, and interaction, which refers to the establishment of social and communicative relationships with other people, are necessary conditions to make media participation possible. Accordingly, Kammer (2013), who refers to the field of media and communication, argues that public participation in the production of news is defined as the action taken with the intention of influencing the content of the news media.

Rodriguez and Fields (2002) argue that one should avoid defining alternative media based on their opposition to the mainstream media but instead focus the study on the transformational processes they bring about to participants and their communities. This focus on 'transformational processes' describes the impact of community media in the context of people's everyday lives at the local level, and it is clear that 'transformational processes' are more consequential than comparisons with mainstream media.

Nowadays, due to technological advancements new forms of communication, involving public participation, are evolving aiming to raise awareness and create participatory cultures and societies (Margaritidou, & Matsiola, 2023). Therefore, it is no surprise that at the same time, at an international level, in line with new technologies and commons-based practices, unified technology communication platforms are designed together with the members of a community through a participatory design approach, recognizing the importance of strengthening of the community media. As communication between members improves, through interaction with a community-based media platform, participants may become more active members of their community (Cibin et al., 2020).

## **Community Media**

The social value and contribution of voluntary radio becomes evident in cases where, through its program, collective consciousness can be developed and collective interest for issues concerning the local community, such as the environment (Serafini, 2019) is strengthened, creating bonds between citizens that manifest an intention to adopt sustainable behavior (Shahzalal, & Hassan, 2019). Also, its participatory nature can provide incentives and challenges to support the active engagement of citizens belonging to under-represented groups such as the elderly or members of the LGBTQI+ communities, preventing them from falling behind in terms of information and civic participation while empowering them (Nirmala, 2015; Copeland, 2018; Reuter et al., 2019). The news presented by the institutions or bodies does not

belong to the current affairs and the so-called "hard" news, but includes topics based on social, scientific, educational and cultural content. As Meadows et al. (2009, p. 167) argue, the public perceives that the definition of 'what is news' can and should go beyond the traditional journalistic boundaries that we usually define as 'news'. Through this framework of diversity, a commitment to social and cultural development is encouraged.

The use of a single theoretical framework that would potentially encompass the functions, aims and outcomes of voluntary radio may prove elusive. Through a combination of representative (for the audience) and participatory (by the audience) communication practice, the usual theories associated with larger mass media are confounded (Foxwell, 2017). Especially, voluntary radio, with the multi-participation it offers, can contribute to the development of a multicultural culture and the exchange of experiences, since its producers are, among others, municipalities, vulnerable social groups, museums, associations, NGOs, collectives, foreign language institutes, as well as ordinary people citizens. Thus, a mass media can act as a stage of open dialogue, giving the opportunity to promote culture and get to know different cultures, opinions and mindsets by enhancing public participation in the public sphere by embracing difference and diversity (Foxwell, 2017). Through its broadcasts it provides citizens with services that are largely ignored by the commercial media. It has been observed that the lack of commercial atmosphere, even with the existence of errors, reduces the distance between stations, presenters and listeners (Foxwell, 2017).

Furthermore, in a partnership framework with university journalism departments, community radio stations enter into agreements to employ students in a realistic environment (Van Vuuren, 2001). In this way, students practice in a totally realistic environment while at the same time they help citizens and institutions to find the appropriate way to express their opinions according to the particularities of the medium.

Citizen-producers, as content transmitters, also become active receivers and therefore more demanding, critical and conscious listeners. In this way they are led to media literacy education as students are involved in the process of producing a program, thus understanding the procedures, contextual and technical, that are demanded (Nicolaou et al. 2021). In particular, when children are involved, radio combines media with education admirably. Through their participation they learn what it means to research a topic, develop better language skills, expand their vocabulary and through critical listening to other broadcasts they acquire an overall critical attitude towards media content, an issue of great concern to society and has been researched for a number of years (Aslanidou, 2000).

By looking at a greater picture through the prism of a desired future society, community media could hold a crucial role in operationalizing change. As the type of media that encourages democratic participation by giving voice to all, including marginalized and underrepresented groups they provide a platform for public debate and discussion and the community has a direct say. In the digital era community media may also be found in mobile-based platforms, aiming to enhance connectivity especially among younger people (Moitra et al., 2016), that still focus

on issues that mainstream media may overlook bringing out the importance of diverse voices needed in acquiring an equitable society. The ability to challenge the local community to be involved in discussions and even debates through practicing ethical journalism may end up in collective actions towards social change thus amplifying social movements. Meadows (2013) argues community journalism plays a crucial role in addressing the ‘democratic deficit’ and recreating a ‘public conversation’ that heightens the sense of citizenship. Therefore, the prefigurative approach of community media expresses the desirability of change providing the means to be achieved.

### **Voluntary radio of the Municipality of Thessaloniki**

The voluntary radio of the Municipality of Thessaloniki has been a unique and original form of communication and information which operates on a completely voluntary and non-profit basis. It broadcasts on 100.6 fm, a frequency belonging to the Municipality of Thessaloniki, and it started broadcasting its programs in September 2011. Prior to its operation, a call was made to individuals, institutions, and organizations in order to have an expression of interest. There was a huge response, and the program was 100% covered.

There are no commercials between the programs and the equipment is mostly handled by the producers/citizens themselves. During its years of operation, 100.6 hosted broadcasts from schools of all levels as well as University departments, NGOs, municipalities, sensitive social groups, cultural organizations/museums, associations/and ordinary citizens, etc. Therefore, there are no audienceship metrics as the radio station was not included in such metrics. The main reason was its non-commercial nature that would not attract any kind of advertisers.

### **Research methodology**

To answer the research questions of the study and achieve qualitative data collection, semi-structured interviews were conducted via email with radio content creators in the voluntary radio of the Municipality of Thessaloniki to reveal their philosophy, goals, and intentions. A set of predetermined open-ended questions that allowed for detailed and expanded responses were sent via email to them to allow for flexibility in replying as they all had a very tight schedule. As the interviewees were former radio content producers, they had the experience to provide detailed and nuanced answers delivering the insider perspective through reflective insights. Furthermore, as they were familiar with the interviewing processes they had the ability to reply clearly and to the point while providing vivid examples of their involvement. The questionnaire had a clear structure starting with essential questions and moving further to more in-depth exploration. Therefore, the methodological approach was implemented in the framework of bringing to light the aspects of four radio producers that belonged to different categories of content who are considered as experts since they may provide inside information. Experts’ interviews is a widely used method in social sciences utilizing questions that may range from

open-ended conversations to semi-structured or structured interviews (Dorussen et al., 2005; Littig and Pöchhacker, 2014; Manzano, 2016).

Since the operation of the voluntary radio is a unique practice in the Greek reality, the aim of the study focused at acquiring an overview and broader insights from people who were active in the process. Therefore, four interviewees who represented themselves as radio producers or the institution they are members of, were selected to discuss with. Specifically, the four interviews were (a) an author, (b) a member of a volunteer group of the Faculties of Science and Education of the Aristotle University of Thessaloniki named Physics Partizani that present “various interactive experiments, which promise, among other things, to surprise, trouble and enchant” (Physicsgg, nd), (c) a member of the Thessaloniki Pride organization that is “a civil society organization that aims to strengthen the social visibility of the LGBTQI community as well as support of equality and their rights in Thessaloniki and the wider region” (Thessalonikipride, nd) and finally (d) a member of the Teloglio Arts Foundation of the Aristotle University of Thessaloniki whose “main goals are the systematic acquaintance of the public with art, the collection, recording and study of our cultural heritage, the creation of conditions of cooperation between artists and art scholars, as well as the essential contact of children with works of art through educational programs” (Teloglio, nd).

The interviews were conducted during September to October 2023 and to overcome time constraints due to professional and personal obligations, a questionnaire of 12 questions was created and sent to them. At first, the interviewees were asked to state how they were informed regarding the voluntary radio and how was the approach performed while pointing out the reasons that drove them to participate and their initial thoughts on the prospect of engaging in such an initiative. Consequently, they were asked specific questions on the topics of their programs as well as the frequency by which they produced their broadcasts and the impact to the audience. Among the following questions were the assessment of their participation and their general opinion on voluntary radio as a medium based, not on the presentation of current affairs, but on issues of interest to society. To conclude with, they were asked regarding their intention to participate again and their opinion if there is anything that needs to be changed. Since one of the researchers was actively involved in the voluntary radio project, thus having a common field with the participants, it increased their level of motivation to take part in the investigation (Bogner, Littig, & Menz, 2009).

Afterwards, to proceed with the interpretation, the textual data from the interviews were thematically transcribed, not detailed to each word but keeping the context (Meuser, & Nagel, 2009; Psomadaki et al. 2022). The interviews were studied a number of times by both researchers to reach to a deep comprehension level of their content. Afterwards, thematic units were created using the terminology employed by the interviewees while focusing on the main issues that were revealed and that were of interest for the scopes of the study and the primary codes and codebook were created. As this is research on a field that has not been investigated, the authors considered that the four interviews were adequate in providing an insight, however



the encountered restrictions were taken into account. Both authors read the transcribed interviews and came up with almost the same thematic units that were consequently discussed to reach the final ones used in the study. However, after a short period of time the transcripts were reviewed to ensure accuracy and clarity in a process of eliminating any repetitive data and at that point, labels were given to the themes that were introduced and the final codebook was established after having grouped similar categories. It must be mentioned that no kind of software was used at any stage of the interpretation since the dataset was a small one that could be handled.

## **Results**

Following the thematical transcription of the interviews and the creation of units, content analysis was used to analyze the collected data. Considering the research questions that were set and the labels that were given at a prior level, patterns were sought among the answers to identify the concepts. In this subsection, the results are presented based on the research questions under specific titles while allowing for further commentary on the issues that arose.

### *Presented Topics and Content*

The participants were interested in presenting topics related to the fields in which they operate. For example, the interviewee of the Thessaloniki Pride organization mentioned the topics of interest that include LGBTQ+ issues at local, national, European, and international levels with an emphasis on organizational action. The participant of Psysics Partizani group involved in the radio programs the Nobel Prizes awarded each year, scientific achievements of the year, and scientific achievements of the Aristotle University of Thessaloniki. The author mentioned that he wanted to present what appealed to his own sense of aesthetics and bring the audience closer to the world of books. Finally, the major exhibitions and the parallel events accompanying the exhibitions, such as theatrical performances and concerts, were the topics that that occupied the radio broadcasts of the Teloglion Arts Foundation, along with the presentation of the educational programs and their derivative results for adults and children.

### *Reasons for Participating and Original Thoughts*

Regarding the reasons that drove the interviewees to participate, their main point was to engage with the community and express themselves, address their issues and raise awareness about them, while promoting their actions as well. The participants' original thoughts for this initiative were that it was an excellent and innovative idea that would allow for facilitation of a civil society and a channel of offering and communication although the exposure was something that intimidated them at the beginning. As the member of the Thessaloniki Pride organization shared in his interview, the motivation to take part in this initiative was: “[...] *we are an active part of society. [...] Also, for reasons of visibility and participation in the public discourse of the LGBTI+ community*”. Furthermore, the member of the Teloglio Arts Foundation of the Aristotle University of Thessaloniki mentioned: “*Teloglio was given a platform to communicate with the people of the city.*” The ability to express their opinions that could otherwise be hidden from

mainstream media was very important to all the participants since the topics they are dealing with belong to broader alternative categories and not to the current news. Characteristically, the author said: *“I wasn't calling people that were in the foreground, nor was I looking in the background. I think that the ones I called - mostly sui generis types - would not be easily called in by the media”*. Moreover, it is indicative what the member of Psysics Partizani stated: *“[...] for communicating science to the public via live broadcast.”*, while adding: *“The voluntary radio initiative would give students a chance to try out radio and the production process, be a forum for presenting scientific positions on issues of general interest and test the radio presentation of experiments that listeners could perform with materials that were at home.”*, revealing the educational approach of the voluntary radio through practical advice. In the same aspect, space was also given to schools (teachers and students) during the radio broadcasts of the Teloglio Arts Foundation to present their impressions, the impact of the exhibition/program, and the program they created.

#### *Participation assessment*

The interviewees were asked to assess their participation on the voluntary radio of the Municipality of Thessaloniki and answers received were very encouraging. They think that such initiatives that open doors for civil society to present concepts and concerns must be facilitated by the Municipality, permitting institution and organizations to leave their natural space to approach the public of the city. The positive assessment was also based to the feedback they had either during the radio programs through messages and participation in quizzes or through comments they received at a later stage.

This very positive experience was expressed in their replies; the member of the Thessaloniki Pride organization stated: *“We were able to have our own voice in a public information medium.”* The author vividly described: *“The years have gone by, and I still think about those Fridays. I hear the signal of the show and it moves me. I've met great people through these shows and I'm proud of my choices. I learned from them. [...] I am grateful!”*. It is very important to realize that these radio programs offered a platform for locals that are concerned with culture, such as authors, poets, artists to reach a wider audience and present their work. However, it is crucial to declare that the positive assessment does not concern only the producers but the local society as well as perceived the participants. The member of the Teloglio Arts Foundation of the Aristotle University of Thessaloniki clearly replied that: *“The freedom of expression provided to us by the voluntary radio, [...] proved that the pioneering initiative had a positive effect both to institutions and citizens as well as the city itself.”*

#### *Overall opinion*

The overall opinion of the interviewees about the role of voluntary radio as a medium based, not on the presentation of current affairs, but on issues of interest to society, however not typically presented by the media was also explored by this study. Their aspects converge that through the polyphony it hosts, it gives the opportunity to individuals, groups, and institutions to introduce subjects underdeveloped. Characteristically, the member of Psysics Partizani, who

presented scientific positions on topics of general interest, such as earthquakes, geological configuration of the country, biodiversity, climate change, environmental radiation, etc. during the radio programs, replied: “[...] as topics that are important and of interest to society that do not receive adequate attention from radio or television news broadcasts can be presented”. Furthermore, the member of the Teloglio Arts Foundation of the Aristotle University of Thessaloniki mentioned that the voluntary radio conveyed the daily life of its broadcasters and its audience “[...] sharing what is happening in the city [...] making visible people and institutions, who do not share journalistic current affairs, but their own reality and this is valuable and necessary”.

When asked if they would like to participate in voluntary radio again in view of its re-opening, all interviewees answered positively and declared themselves strong supporters of the "magic of radio". They consider that this specific initiative does not concern a program that is opposite the "other" radio, but next to it. It is broadcasted by people who are not professionals and is made out of their love to contribute somehow.

## **Discussion**

The public's active participation in news provision through the voluntary radio of Thessaloniki has proven to be a valuable approach to the local community contributing to presentation of very interesting collectives and topics that would otherwise be left unheard. It fostered participation of under-represented in the mainstream media groups that gladly, as pointed out, contributed to the endeavour.

The results of this study affirm that the voluntary radio promoted pluralism and citizens' access to a wide range of information, at the same that it strengthened the identity of specific communities and enabled them to meet the wider social spectrum (Serafini, 2019). It is very important to understand that it functioned both as a medium of expression of the radio producers and as a medium of information for the audience that had the chance to hear alternative perspectives and content thus democratizing media (King, 2017).

Through the programs, the voluntary radio contributed to the education and literacy of the public and of the producers as well, since it was open to all (school students, individuals, institutions, etc.). It provided the capability of developing skills in media production, such as interviewing and equipment handling, as argued by Todorova (2015), as well. Furthermore, the specialized information that was offered educated the citizens and contributed to the empowerment of the community members to make informed decisions. As mentioned by one of the interviewees, after the health crisis of the pandemic and the current climate crisis the public has an increased interest in science and there is need for calm and confirmed information, point out the contribution of the voluntary radio to raising awareness.

The radio programs promoted the fight against negative stereotypes and familiarization with social groups, which are at risk of social exclusion building stronger and more cohesive

communities (Nirmala, 2015). It is in the authors' firm belief that voluntary radio is a unique example of a media that had become a forum for open dialogue that brought people together around shared interests and concerns.

As all research this one comes with limitations, the main of which is the small number of participants. Although they are considered experts, the number of four is relatively small compared to the total number of individuals, bodies and organizations that broadcasted their programs on voluntary radio and this the reason this research is considered a pilot one. Future research should include more radio producers and furthermore should address as well to the public which is the audience of this unique initiative to obtain the views of the recipients of this unique project.

## References

- Aslanidou, S. (2000). *The myth of the passive viewer*. Athens: Dromeas.
- Bogner, A., Littig, B., & Menz, W. (2009). Introduction: Expert interviews—An introduction to a new methodological debate. In *Interviewing Experts Research Methods Series*, edited by Bogner, A., Littig, B., Menz, W. Palgrave Macmillan: London, UK, pp. 1-13.
- Carpentier, N. (2012). The concept of participation. If they have access and interact, do they really participate? *Revista Fronteiras – estudos midiáticos*, 14(2), 164-177.
- Cibin, R., Robinson, S., Scott, M. K., Duarte, S., Žišt, P., Laura, M., Sciannamblo, M., Ashby, S., Csíkszentmihályi, C., Pantidi, N., & Teli, M. (2020). Co-designing convivial tools to support participation in community radio. *Radio Journal: International Studies in Broadcast & Audio Media*, 18(1), 43-61. [https://doi.org/10.1386/rjao\\_00015\\_1](https://doi.org/10.1386/rjao_00015_1).
- Copeland, S. (2018). Broadcasting queer feminisms: Lesbian and queer women programming in transnational, local, and community radio. *Journal of Radio & Audio Media*, 25(2), 209-223.
- Dorussen, H., Lenz, H. and Blavoukos, S. (2005), “Assessing the Reliability and Validity of Expert Interviews”. *European Union Politics*, 6(3), pp.315-337.
- Foxwell, K. (2017). Sounds like a whisper: Australian Community Broadcasting hosts a quiet revolution. *Westminster Papers in Communication and Culture*, 5(1).
- Hayes, J. E. (2018). Community media and translocalism in Latin America: cultural production at a Mexican community radio station. *Media, Culture & Society*, 40(2), 267-284.
- Kammer, A. (2013). Audience participation in the production of online news. Towards a typology. *Nordicom Review*, 34, 113-126. <https://doi.org/10.2478/nor-2013-0108>.
- King, G., (2017). History of Struggle: The Global Story of Community Broadcasting Practices, or a Brief History of Community Radio, *Westminster Papers in Communication and Culture* 12(2), 18-36. doi: <https://doi.org/10.16997/wpcc.227>.
- Littig, B. and Pöchhacker, F. (2014), “Socio-Translational Collaboration in Qualitative Inquiry”, *Qualitative Inquiry*, 20(9), pp.1085-1095.
- Manzano, A. (2016). The craft of interviewing in realist evaluation. *Evaluation*, 22(3), pp.342-360.

- Margaritidou, S., & Matsiola, M. (2023). Alternative communication forms in raising public awareness: The interactive documentary. In *Envisioning the Future of Communication, 1(1)*, edited by Poulakidakos, S., Matsiola, M. & Yannacopoulou, A.. <https://doi.org/10.12681/efoc.5334>.
- Meadows, M., Forde, S., Ewart, J., & Foxwell, K. (2009). Making good sense: Transformative processes in community journalism. *Journalism, 10(2)*, 155-170.
- Meadows, M. (2013). Putting the citizen back into journalism. *Journalism, 14(1)*, 43-60. <https://doi.org/10.1177/1464884912442293>
- Meuser, M. & Nagel, U. (2009). The expert interview and changes in knowledge production. In *Interviewing Experts Research Methods Series*, edited by Bogner, A., Littig, B., Menz, W. Palgrave Macmillan: London, UK, pp. 17–42.
- Moitra, A., Das, V., Vaani, G., Kumar, A., & Seth, A. (2016, June). Design lessons from creating a mobile-based community media platform in Rural India. In Proceedings of the eighth international conference on information and communication technologies and development (pp. 1-11).
- Nicolaou, C., Matsiola, M., Karypidou, C., Podara, A., Kotsakis, R., & Kalliris, G. (2021). Media studies, audiovisual media communications, and generations: The case of budding journalists in radio courses in Greece. *Journalism and Media, 2(2)*, 155-192.
- Nirmala, Y. (2015). The role of community radio in empowering women in India. *Media Asia, 42(1-2)*, 41-46.
- Physicsgg, (nd). Physics Partizani. Available online: <https://physicsgg.me/2011/05/13/physics-partizani/> (last accessed 21 April 2024).
- Psomadaki, O., Matsiola, M., Dimoulas, C. A., & Kalliris, G. M. (2022). The significance of digital network platforms to enforce musicians' entrepreneurial role: Assessing musicians' satisfaction in using mobile applications. *Sustainability, 14(10)*, 5975.
- Reuter, A., Bartindale, T., Morrissey, K., Scharf, T., & Liddle, J. (2019, May). Older voices: Supporting community radio production for civic participation in later life. In Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems (pp. 1-13).
- Rodriguez, C., & Fields, W. (2002). Citizens' media and the Voice of the Angel/Poet. *Media International Australia, 103(1)*, 78-87.
- Serafini, P. (2019). Community radio as a space of care: An ecofeminist perspective on media production in environmental conflicts. *International Journal of Communication, 13*, 5444–5462.
- Shahzalal, M. D., & Hassan, A. (2019). Communicating sustainability: Using community media to influence rural people's intention to adopt sustainable behaviour. *Sustainability, 11(3)*, 812.
- Teloglio, (nd). The foundation. Available online: <https://www.teloglion.gr/to-idryma/> (last accessed 21 April 2024).
- Thessalonikipride, (nd). The organization. Available online: <https://thessalonikipride.com/i-organosi/> (last accessed 21 April 2024).
- Todorova, M. S. (2015). Dusty but Mighty: Using Radio in the Critical Media Literacy Classroom. *Journal of Media Literacy Education, 6(3)*, 46-56.
- Tucker, E. (2013). Community radio in political theory and development practice. *Journal of Development and Communication Studies, 2(2-3)*, 392-420.

Turner, G. (2010). *Ordinary people and the media: The demotic turn*. London: SAGE.  
<https://dx.doi.org/10.4135/9781446269565>

Van Vuuren, K. (2001). A newsroom of our own? Community radio and news. *Media International Australia*, 99(1), 77-90.

## **Predictive journalism: The case of Greek sports and betting websites**

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### **Abstract**

Predictive journalism is an emerging genre in data journalism that incorporates predictive information such as estimates, forecasts, etc. It helps the audience to speculate about possible future events and outcomes. In recent years, there has been a fusion of predictive journalism with sports, as sports allow journalists to make predictions about the outcome of a match, how a team will line up on the field, and so on. The present study examines the application of predictive journalism in Greek sports and betting websites. It aims to analyze the volume and the content of articles, as well as where journalists base their predictions, concluding that, although Greek sports websites publish approximately 100 football-related articles per day, the percentage of predictive journalism articles are rather small to non-existent in some of them.

**Keywords:** data, sports, predictive journalism.

### **Introduction**

The emergence of computational methods and the abundance of data have been used by journalists as they appear to help them to anticipate future developments (Pentzold & Fechner, 2021). Journalists, using new tools and resources, can analyze trends, patterns, and probabilities and make more informed predictions about upcoming events.

Predictive journalism is a type of data journalism. It incorporates predictive information such as forecasts or other estimates into news production processes using computational modeling techniques like machine learning and simulation. It often features interactivity and includes some form of data visualization (Diakopoulos, 2022). Based on probabilities, it leads to various future scenarios, some of which may occur while others may not (Pentzold & Fechner, 2021). It is applied in various fields such as politics, medicine, sports, etc.

The continual growth of data information underscores the increasing importance of tracking, collecting, and effectively utilizing data. The emergence of data journalism has led to significant transformations in the sports journalism industry, shifting the focus from merely reporting news to adopting new writing methods that leverage data-driven insights (Gao, Tang & Lu, 2023). This condition forms a deeper integration of quantitative analysis and storytelling in sports reporting, enhancing the depth and quality of coverage for audiences. As information and communication technology advances rapidly, the integration of big data in the sports industry

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extends beyond the playing field, intertwining closely with various aspects of sports management and administration (Gao, Tang & Lu, 2023).

Until recently, the use of data and statistics to measure and analyze sports performance primarily focused on basic events such as wins, losses, points, and assists. However, over the last 10-15 years, richer and more complex statistical methods and models have emerged. The availability of larger datasets and computational analysis of that data leads to the development of these so-called analytics (Fu & Stasko, 2022). Data and modern analytical methods have allowed researchers and coaches to gain a much better understanding of athletic performance and make analytical predictions. Data visualization in sports serves two roles: analytical (or exploratory) purposes and narrative (or communicative) purposes, as sportswriters both analyze games and communicate insights to audiences (Fu & Stasko, 2022).

In this context, this study examines whether and to what extent predictive journalism is used by sports journalists in Greece. Specifically, it conducts content analysis on three sports and three betting websites, and records the topics, the number of articles related to predictive journalism, and the predictions made by the journalist.

### **Data Journalism – Definition and characteristics**

Data journalism can be defined as the process of extracting valuable information from data, crafting articles based on this information, and integrating visualizations (interactive in some cases) into the articles, which help readers understand the significance of the story or allow them to find data relevant to them (Veglis & Bratsas, 2017). In data journalism traditional journalistic methods intersect with data analysis, programming, and visualization techniques (Appelgren, Huttenrauch & Nygren, 2012).

Data journalism projects use (large) sets of (digital) quantitative data as their "raw material," which undergo some form of (statistical) analysis to uncover and tell stories (Coddington, 2015; Royal & Blasingame, 2015). They often use open data and open-source code, promoting transparency (Borges-Rey, 2017). Also, the results are frequently visualized (Gray, Bounegru & Chamber, 2012), and in some cases try to enable users to collect, analyze, and interpret the data (Borges-Rey, 2017). Data journalism "tells" a compelling story, like traditional journalism, however, the difference lies in the fact that now the story comes from the data itself (Kalaitzi, Veglis & Bratsas, 2018).

Visualizations are a basic characteristic of data journalism articles and convey a large volume of data with substantive information (Veglis & Bratsas, 2017). Classic data visualizations include charts, maps, and timelines, either individually or in combination. A visualization can be static or dynamic/interactive. In a static visualization, there is only one view of the data, and often multiple "readings" by the user are required for a complete understanding of the available information. In a dynamic visualization, users explore the data themselves. An interactive visualization should initially provide an overview of the data but also include tools for



discovering details. Additionally, it may incorporate animated transitions and well-designed interfaces to engage the audience (Murray, 2013).

Dynamic visualizations, according to the interactivity can be categorized as follows: *Transmissional*: Projects that use simple interactive visualizations. They allow the user to view the visualization and provide some additional explanations for various elements in the form of information displayed in a window. *Consultational*: Projects that offer multiple views of the same data, as well as projects that include interactive visualizations allowing the user to focus on specific areas (such as maps, timelines, etc.). *Conversational*: Projects that allow user input of data that can change the visualization (Jensen, 1998).

In data journalism, quantitative evidence and computational techniques convert into story formats. This is essential for making them meaningful, communicable, and relevant to audiences (Pentzold & Fechner, 2021). So, data journalists follow a specific workflow, which includes the detection of the information, the interpretation of the findings, and the configuration of narratives that are related to their audience's interests and understanding. The translation of complex data and computational analyses into compelling stories allows data journalists to bridge the gap between raw data and audience comprehension, thereby making the information accessible and impactful.

## **Predictive Journalism**

According to Pentzold & Fechner (2021), the mere availability of digital information and algorithmic calculations has not inherently revolutionized journalistic efforts to anticipate, outline, and communicate forthcoming trends and events. Although these technological resources offer valuable tools for data analysis and prediction, their impact depends on how journalists utilize them within the broader context of their reporting practices. Digital information and algorithms should be integrated by journalists into their workflows, interpret the insights derived from them, and effectively communicate their findings to their audiences.

Predictive journalism, as a subset of data journalism, specializes in producing forecasts and predictions based on evidence and data analysis. By using the resources referred, it aims to cover the audience's demand for informed insights and forecasts in various domains, including sports. So, audiences can be provided with valuable foresight and understanding of future events, contributing to a deeper engagement and comprehension of complex topics.

Predictive journalism involves integrating predictive information like forecasts, nowcasts, hindcasts, or other estimates into various stages of news production, including reporting, publication, and distribution. This integration typically relies on computational modeling techniques, such as machine learning and simulation to generate these predictions. Also, it often adopts an interactive approach and typically incorporates various forms of data visualization. Through interactive features and visual representations, predictive journalism engages audiences more effectively, enabling them to explore and understand complex predictions. A

common objective of predictive journalism is to communicate the associated probability with a prediction, aiming for transparency and clarity. The impact of predictive journalism extends beyond audience perception to its reception, utilization, and influence on media production processes themselves (Diakopoulos 2022).

Thus, predictive data journalism represents a relatively new frontier in news production. It serves as a lens through which to explore the broader landscape of data-driven journalism and its potential for innovation (Pentzold & Fechner, 2021). By delving into predictive analytics and forecasting techniques, journalists can unlock new dimensions of storytelling and analysis. This emerging field offers exciting opportunities to anticipate and address future events, trends, and developments, thereby enriching the practice of journalism and enhancing its relevance in an increasingly data-driven world. As predictive data journalism continues to evolve, it will likely play a pivotal role in shaping the future of news production and consumption.

### **The role of data in sports journalism**

Which is the relationship between data and sports journalism? What role do the data have in sports news journalism? Nowadays, big data is used to draw up results predictions. So, probability models in sports coverage are aimed at extracting readings and new interpretations from a set of datificated information that already exists. This set of ordered data is already used by the media, leagues and sports institutions specialized in the storage and processing of sports statistics, such as the American Stats LLC or the British Opta Sports (Rojas-Torrijos & Garcia-Cepero, 2020).

Specifically, sports results prediction models have already been used by the media (for example the Financial Times or the website Five ThirtyEight) which have made data their trademark (Arias-Robles, 2017). These publications have developed them to diversify their sports coverage and to provide new angles and perspectives rather than just seeking to broadcast facts.

Therefore, models based on advanced statistics, such as those created by El País for the 2018 Football World Cup, measure probabilities and make future projections from already existing data. So, rather than making mere predictions, they determine which scenarios are more probable within a competition according to a general trend and how to tell the reader about these predictions, following a methodology which characterizes data journalism (Rojas-Torrijos & Garcia-Cepero, 2020).

### **Predictive journalism in sports: The beginning**

Sports data mining tools as derivatives of the data mining technique appeared in large numbers, allowing players, coaches, and opponents to better understand their competitive level. Thus, a new industry has emerged that uses the application of data mining in sports for commercial purposes (Herbinet, 2018).

Below there are some popular sports data mining tools:

**Advanced Scout:** IBM developed Advanced Scout in the mid-1990s as a data mining tool used to analyze NBA data. The application was specially designed for NBA coaches and statistic analysts to discover hidden patterns or features in basketball data, which provided a new insight using business intelligence and data mining technique (virtualscoutschool.com, 2019). There were two sources of data for this tool, one of which came from a court event collection system that included time-stamped event data such as shots, rebounds, etc. The other source was the game tape, which included frames of the game. This resource could be maintained by coaches to prepare for upcoming opponents as well as to control their players' mistakes and in turn improve them effectively (Schumaker, Solieman & Chen, 2010).

**Digital Scout:** Digital Scout is a software used to collect and analyze game-based statistics and tools for baseball, basketball, and football etc. (Solieman, 2006).

**Synergy Online:** This system is similar in functionality to Advanced Scout and is dedicated to basketball-based media. It contains an index of live video broadcasts, where coaches, players and fans are able to query games in real time and receive continuously updated player statistics using this software (Schumaker et al., 2010).

**NHL-ICE:** In recent years, hockey has experienced a data-centric renaissance. The National Hockey League (NHL) has formed a technology joint venture with IBM to develop a data mining application, NHL-ICE. This is similar to Digital Scout, which is an online real-time game scoring and statistics' system. Coaches, broadcasters, reporters, and fans can look up statistical data through in this app when visiting the NHL website. Also, fans can use this system to watch the match repeatedly and meanwhile broadcasters and journalists can dig up these data and try to find out the backstages to add them to their reports (Knorr & Ng, 1998).

### **Sports, predictive journalism, and betting**

In the world of professional sports, predictive analytics is used more and more as teams look to gain a competitive edge. Predictive analytics is the process of using data and statistical models to make predictions about future events or outcomes. By utilizing predictive analytics, teams gain an understanding of how different strategies will affect their performance in the future. On the spectator side, this technology has helped in the analysis of statistics such as NBA picks and various odds to help fans in making informed betting decisions.

Teams have also begun using predictive analytics to identify potential new players who may be more successful than those currently on their roster. For example, by analyzing player stats from past seasons, teams can identify which players are most likely to perform well in certain areas and use that information when making draft picks or signing free agents. The use of predictive analytics is likely to continue in the future as technology continues to advance, and data becomes easier to access (dailypress.net, 2023).

Nowadays, the prediction of sports results is very popular among fans all over the world, which greatly contributes to the expansion of sports betting. This is especially evident in the most

popular sports, such as football and basketball. Many people have developed various systems with the aim to provide the best possible prediction of the winners of sporting events. The main problems with these systems are that users are often influenced by emotions or that these systems do not work with the right data set (Miljković, Gajić, Kovačević & Konjović, 2010).

There are several research that have dealt with the topic of predicting the results of sports events: For example, Byongho, Jinhyuck, Chonghyoun, Hyeonsang, and McKay (2008) presented an approach for predicting the results of football matches called FRES (Football Result Expert System). It uses a combination of Bayesian inference and rule-based reasoning. Each game is represented as a series of streams. The probabilities of certain events, such as a possible player change or formation change, are calculated based on previous data in each stream and are used to trigger certain rules to determine decisions for the next stream. The system was applied to the 2002 FIFA World Cup matches and correctly predicted the champion and the second runner-up, as well as the six out of the eight teams in the quarterfinals.

Regarding basketball over the past decades, different statistical principles have been applied by researchers, considering the technical characteristics of previous games to predict the probability of the home team winning in future games (Zak, Huang & Siegfried, 1979). The range of available data resulted in low prediction accuracy (Kuhn & Johnson, 2013).

Furthermore, artificial neural networks (ANNs) are among the most used approaches in machine learning for sports outcome predictions (Markoski, Pecev, Ratgeber, Ivkovic & Ivankovic, 2011). Connection systems (as they are also called) are computational systems inspired by, but not necessarily identical to, the biological neural networks that make up animal brains (Loeffelholz, Bednar & Bauer, 2009). Such systems learn to perform tasks by examining examples, generally without being programmed with task-specific rules. Their power comes from the nonlinearity of the hidden neurons that adjust the weights to achieve a high level of prediction accuracy, all while avoiding overfitting (Santos, Pazos & Sierra, 2011).

One of the first studies that used an ANN model to predict results for the National Football League (NFL) was conducted by Purucker (1996). Data from the first eight league matches and five characteristics of each match were selected and then they used clustering techniques. Purucker's system had 61% accuracy.

Also, Artificial Intelligence has affected journalism and sports. The algorithms of AI analyze the betting history, preferences, and behavior of a user, adjust suggestions, bets, and promotions for each user, improving their experience. Furthermore, AI processes numbers from a wide range of sources, including player statistics, team performance, weather conditions, and even sentiment on social media (Van Isacker, 2024). So, increased accuracy of predictions, faster decision-making, reduction of human errors in betting strategies are offered (Dooley, 2024).

All of the above, in combination with the development of technology, resulted in the prevalence of betting and consequently "betting journalism": It is characteristic that on September 9, 2021, the first day of the 2021-22 NFL season, Arizona became the 23rd US state which legalized

sports gambling, allowing its residents to bet either in physical locations or online. The mass legalization of sports gambling has already had significant effects on the sports business in America, with everyone - from state governments to major professional sports leagues, media companies to Native American casinos in all over the country - wanted to get in to action. The “why” is easy to be understandable: A 2017 study by the American Gaming Association pegged the expected economic return of a mass sports betting legalization movement at \$41.2 billion (Green, 2021). Also, Bloomberg reported that players bet more than \$7 billion on sports in October 2021 – an increase of more than 2,000% since June 2018, when the United States Supreme Court struck down a federal law that banned sports gambling in every State except Nevada (Moritz, 2022).

The betting market has grown very rapidly in the last decade, thanks to the increased coverage of live football matches as well as the higher accessibility of betting websites and the development of mobile devices and tablets (Herbinet, 2018). In 2013 the value of the betting industry, which included both illegal and legal markets, was estimated at \$700 billion to \$1 trillion (£435 billion to £625 billion) per year. Around 70% of this trade was estimated to come from football trading (Keogh & Rose, 2013). In 2021, the market size of the UK sports betting sector reached a value of \$5.4 billion, which represented the 5% of the global market size and making football the market leader. Earlier in 2020, the COVID-19 outbreak affected the sector as most outdoor sports facilities were stopped and people were forced to spend most of their time at home. This resulted in little to no sports taking place during the year, which meant that there were no betting activities. As a result, in the year 2020 the market value of sports betting in the UK showed a decrease of 10% (globaldata.com, 2021). As it is understood, football and gambling have now become so intertwined that it is difficult to imagine a match day experience without the influence of betting (Rackham, 2023).

### *Research questions*

The main question to which the present research is asked to answer is whether predictive journalism applies to Greek sports websites, especially during periods of intense sporting activities. We recognize that this type of journalism is gaining more and more ground, as the widespread adoption of data journalism has been playing a key role in this direction.

The main research question is framed by a series of sub-questions, which are the following:

RQ1: What is the volume of predictive journalism articles related to football published on the Greek sports and betting websites?

RQ2: What are the subjects covered?

RQ3: Which data do journalists base their predictions on regarding these articles?

## Research methodology

A quantitative content analysis has been chosen for this: According to Berelson (1952), this is a research technique with the aim of objective, systematic and quantitative description of the manifest content of communication. As Bryman (2017) claims, content analysis is about uncovering the obvious content of each element.

Many studies applying quantitative content analysis do not develop their own coding protocols but rely on pre-existing ones by other researchers (White & Marsh, 2006). In the present research, the researchers developed their own coding protocols given that similar research does not exist.

### *Research material and sample*

To answer the above questions, the research focused on the articles related to football which were published on three sports websites (sport24.gr, gazzetta.gr, sdn.gr) and three sports betting websites (betarades.gr, kingbet.net, bethome.gr). As one of the most popular sports on the planet, football is always followed very closely by many people. In recent years, new types of data have been collected for many games in different countries, such as play-by-play data including information about every shot or pass in a match (Herbinet, 2018). The data concerns the period from November 4th to November 19th, 2023. Totally, the sample consists of 4.379 articles published on the six websites that were mentioned above and more specifically of 917 articles posted on sport24.gr, 1.439 posted on gazzetta.gr, 1.689 posted on sdn.gr, 115 posted on betarades.gr, 113 posted on kingbet.net and 106 posted on bethome.gr (Table 1).

**Table 1.** The number of articles that were published from November 4th to November 19th, 2023

Website's name	Number of articles	Number of articles of predictive journalism
sport24.gr	917	3
gazzetta.gr	1.439	2
sdn.gr	1.689	0
betarades.gr	115	5
kingbet.net	113	9
bethome.gr	106	12

## Results

Analytics have been very impactful for teams, as the use of them helps teams to gain insights into their players' strengths and weaknesses, as well as the overall performance of the team. This allows them to make more informed decisions about how to best utilize their resources and optimize their strategies. Analytics also provides teams with data-driven insights into game

situations, allowing them to better anticipate opponents' moves and adjust their own strategies accordingly. Analytics can help teams identify areas for improvement in terms of player development or team chemistry. It can also be used to track progress over time and measure the effectiveness of different strategies or tactics. All in all, analytics has revolutionized the way teams approach performance and strategy, giving them an edge over their competition (dailypress.net, 2023).

But as it concerns the application of analytics in sports journalism, it was found that the volume of predictive journalism articles published by the sports and betting websites during the study period was very low, especially for sports websites. It is characteristic that although a total of 1,689 articles were published on the sdn.gr website, none of them were related to predictive journalism. This means that it is not particularly widespread on Greek sports websites. Moreover, the subjects covered by these predictive journalism articles were related to match predictions for the Greek League (Super League and Super League 2) and European Cups such as Champions League, Europa League, and Europa Conference League.

Finally, as it concerns where the columnists base their predictions on, it was found that they are based on the following:

- The strategy, the tactics and the analysis of the match
- Determining the playing style of team players and opponents (using statistics)
- The teams' results so far
- The dynamics of opponents
- What the teams have done in the past in the same institution/in a similar situation.

The result confirms the literature, as the collection of data has placed Data Science at the forefront of the football industry and many potential uses and applications presented below:

- Strategy, tactics, and match analysis
- Identifying the players' playing style
- Player acquisition, player valuation and team's budget
- Training regimens
- Predict and prevent injuries using test results
- Performance management and forecasting
- Match results
- Tournament planning and scheduling
- Calculation of betting odds

A particularly important element of Data Science in football is the ability to evaluate a team's performance in matches and use that information to try to predict the outcome of future matches based on that data. The results of sporting events can be difficult to predict, as surprises often occurs. Football is an interesting example, as a) the matches have a fixed duration (unlike, for example, tennis or volleyball) and b) it has a unique type of scoring matches, namely, goals.

The possible outcomes for a team participating in a football match are win, lose, or draw. Therefore, it may seem quite simple to predict the outcome of a match. Traditional prediction methods simply use match results to evaluate team performance and build statistical models to predict future match results. However, due to the low scoring in matches (for example, less than 3 goals per game on average in the English Premier League over the past 15 years), there is a random element associated with the number of goals scored during a match. For example, a team which has many chances to score could be unlucky and not convert any of its scoring chances to goal, while a team with only one scoring chance could score a goal. This makes match results an imperfect measure of a team's performance and thus an incomplete metric against which to predict future results (Herbinet, 2018).

A possible solution to this problem can be provided by using in-game statistics: In recent years, detailed match statistics have become available, which create the opportunity to look further than the match result itself. This allowed the development of metrics such as "expected goals" which calculate the number of goals a team would be expected to score in a match, removing the random element of scoring. The emergence of new Machine Learning techniques in recent years also allows for better predictive performance in a wide range of classification and regression problems. Exploring these different methods and algorithms allowed the development of better models in both predicting the outcome of a match and the actual ranking (Herbinet, 2018).

## **Conclusions**

Data journalism is applied in the field of sports, as evidenced by the many examples that exist in the field of sports journalism. In recent years, new technologies have made it possible to collect and analyze more data in this area. The above contributed to the formation of sports analysis, a type that is found especially in specific periods of time, such as for example before and/or after a football match. This development helped to connect predictive journalism with sports, allowing journalists to make predictions based on data.

Also, the sports industry has grown considerably, thanks to more people understanding the power of predictive analytics. Now, broadcasts and social media teams are starting to realize the benefits of providing these metrics to fans. Based on a recent Nielsen report that 51% of people are checking live stats while watching sports, fans are seeking more than just an opinion (Hensley, 2022).



In the context of this work, the following were observed: Each sports website publishes an average of 100 football-related articles per day. The subjects varied from interviews, opinion articles, republishing of Press releases, announcements etc. to analysis articles and data journalism articles. Despite hosting these kind of articles (such as articles with numbers, tables, and visualizations), the percentage of predictive journalism articles was rather small to non-existent in some cases. This creates a big concern, as predictive journalism has invaded many fields, and one would expect that the field of sports journalism would be one of the first to be applied.

### **Future research**

In the future, our goal is to study more sports and betting websites both in Greece and abroad, in order to establish whether the results of this research are different or remain the same in a wider range of websites and in a different period of time. Besides, the study period of this work is short and indicative, not representative. In addition, the goal is to extend the study of predictive journalism to other sports, such as basketball, tennis, volleyball, etc. The reference to these sports is based on the fact that there are daily reports on the websites for them.

However, research on the application of predictive journalism in sports will be more complete if we ask sports journalists themselves. The latter will be asked to answer questions related to the way they work in the case of forecasts and predictions. In other words, they will be asked where they base their predictions on, if the way of predictions has changed due to artificial intelligence, if they notice more general differences in recent years, how their predictions can be made more effective, etc. It should also be investigated whether predictions based on computational methods are absolutely certain, and if not, how the possibility of error can be reduced.

Finally, it is important to investigate the public's attitudes towards predictive journalism articles with the use of a questionnaire in the future. In other words, it is appropriate to study whether the public can read and understand the content of such articles, if they encounter any difficulty and at what point, what they like and what they don't like to read, etc.

### **References**

- Appelgren, E., Hüttenrauch, H., & Nygren, G. (2012). Data Journalism: Implications and Opportunities. Digital Humanities Congress 2012, The University of Sheffield, 60.
- Arias-Robles, F. (2017). Nuevas narrativas digitales en el periodismo deportivo. En J. L. Rojas-Torrijos (Coord.), *Periodismo deportivo de manual* (pp. 203-232). Valencia: Tirant lo Blanch.
- Borges-Rey, E. (2020). Towards an epistemology of data journalism in the devolved nations of the United Kingdom: Changes and continuities in materiality, performativity and reflexivity. *Journalism*, 21(7), 915-932. <https://doi.org/10.1177/1464884917693864>

- Byongho, M., Jinhyuck, K. Chonghyoun, Ch., Hyeonsang, E. & McKay, R.I. (2008). A Compound Framework for Sports Prediction: The Case Study of Football. *Knowledge-Based Systems*, 21(7): 551-562.
- Coddington, M. (2014). Clarifying Journalism's Quantitative Turn: A typology for evaluating data journalism, computational journalism, and computer-assisted reporting. *Digital Journalism*, 3(3), 331–348. <https://doi.org/10.1080/21670811.2014.976400>
- dailypress.net (2023). *The Rise of Predictive Analytics in Professional Sports*. <https://www.dailypress.net/sponsored-content/2023/04/the-rise-of-predictive-analytics-in-professional-sports/>.
- Diakopoulos, N. (2022). Predictive Journalism: On the Role of Computational Prospection in News Media. Tow Center for Digital Journalism.
- Dooley, J. (2024). *The Impact of AI in Sports Betting Success*, Medium. <https://james-dooley.medium.com/the-impact-of-ai-in-sports-betting-success-18e16fbed2fa>
- Fu, Y. and Stasko, J. (2022). Supporting Data-Driven Basketball Journalism through Interactive Visualization. In CHI Conference on Human Factors in Computing Systems (CHI '22), April 29–May 5, 2022, New Orleans, LA USA. ACM, New York, NY, USA, 17 pages. DOI: <https://doi.org/10.1145/3491102.3502078>
- Gao, K., Tang, L. and Lu, J. (2023). An Analysis of Sports News in the Era of Big Data - Visual Data News with NBA Coverage as an Example, G. Guan et al. (Eds.): ICBDS
- globaldata.com (2021). *Market Size of the Sports betting Industry in the UK (2017-2021, \$ Billion)*. <https://www.globaldata.com/data-insights/travel-and-tourism/market-size-of-the-sports-betting-industry-in-the-uk/>
- Gray, J., Bounegru, L., & Chamber L. (eds) (2012). *The Data Journalism Handbook*. O' Reilly.
- Green, A. (2021). *The sports betting legalization trend: What journalists need to know*. <https://businessjournalism.org/2021/09/sports-betting-legalization-journalists-need-to-know/>
- Hensley, N. (2022). *Why Fans Crave Predictive Analytics—And How Sports Can Deliver Them*. <https://www.forbes.com/sites/forbescommunicationscouncil/2022/11/04/why-fans-crave-predictive-analytics-and-how-sports-can-deliver-them/?sh=140151da228b>
- Herbinet, C. (2018). *Predicting Football Results Using Machine Learning Techniques*. Individual Project Report. Imperial College London.
- Jensen, J. (1998). Interactivity Tracking a new concept in media and communication studies. *Nordicom Review*, 19(1): 185-204.
- Kalatzi, O., Bratsas, C. & Veglis, A. (2018), The principles, features and techniques of data journalism, *Studies in Media Communication*, 6(2): 36-44.
- Knorr, E.M. & Ng, R.T. (1998). *Algorithms for mining distance-based outliers in large datasets*. In Proceedings of the International Conference on Very Large Data Bases (pp. 392-403). USA: Citeseer.
- Kuhn, M. & Johnson, K. (2013). *Applied Predictive Modeling*. New York: Springer.

- Loeffelholz, B., Bednar, E. & Bauer, K.W. (2009). Predicting NBA games using neural networks. *Journal of Quantitative Analysis in Sports*, 5(1).
- Markoski, B., Pecev, P., Ratgeber, L., Ivkovic, M. & Ivankovic, Z. (2011). *Appliance of neural networks in basketball – basketball board for basketball referees*. 2011 IEEE 12th International Symposium on Computational Intelligence and Informatics (CINTI), Budapest, pp.133-137.
- Miljković, D., Gajić, L., Kovačević, A. & Konjović, Z. (2010). *The Use of Data Mining for Basketball Matches Outcomes Prediction*. IEEE 8th International Symposium on Intelligent Systems and Informatics, Subotica, 10-11 September 2010 (pp. 309-312). <https://doi.org/10.1109/SISY.2010.5647440>.
- Moritz, B. (2022). *What Happens to Sports Media When Everyone's a Gambler?* <https://globalsportmatters.com/business/2022/01/11/what-happens-sports-media-sports-betting/>
- Murray, S. (2013), *Interactive Data Visualization for the Web*, O' Reilly.
- Pentzold, C., & Fechner, D. (2021). Probabilistic Storytelling and Temporal Exigencies in Predictive Data Journalism. *Digital Journalism*, 9(6): 715–736. <https://doi.org/10.1080/21670811.2021.1878920>
- Purucker, M.C. (1996). Neural network quarterbacking. *IEEE Potentials*, 15, 9-15.
- Rackham, A. (2023). *Gambling: Who are the betting firms sponsoring your team?* BBC.com. <https://www.bbc.com/news/entertainment-arts-64662006>
- Rojas-Torrijos, J.L. & Garcia-Cepero, J. (2020). Perception of sports data journalism among heavy users. Case study: predictive model during the 2018 Football World Cup in El País. *Revista Mediterránea de Comunicación/Mediterranean. Journal of Communication*, 11(2): 295-310. <https://www.doi.org/10.14198/MEDCOM2020.11.2.8>
- Royal, C., & Blasingame D. (2015), *Data journalism: An explication*, #ISOJ, 5(1): 24-46.
- Santos, J.M.S., Pazos, A.B.P. & Sierra, A.P. (2011). *Team performance in professional basketball: an approach based on neural networks and genetic programming*. XIII IASE and III ESEA Conference of Sports, Prague.
- Schumaker, R.P., Solieman, O.K. & Chen, H. (2010). Sports knowledge management and data mining. *Annual Review of Information Science and Technology*, 44(1): 115-157.
- Solieman, O.K. (2006). *Data mining in sports: A research overview*. Dept. of Management Information Systems.
- Van Isacker, B. (2024). *How Is Artificial Intelligence Impacting the Online Sports Betting Industry?*. <https://www.side-line.com/how-is-artificial-intelligence-impacting-the-online-sports-betting-industry/>
- Veglis, A., & Bratsas, C. (2017), *Reporters in the age of Data Journalism*. *Journal of Applied Journalism & Media Studies*, 6(2): 225-244.
- virtualscoutschool.com (2019). *Advance Scouting*. <https://virtualscoutschool.com/lessons/advance-scouting-2>.

# **Public Service/Interest Journalism in Transition: Greek media professionals' perceptions of broadcasters' mission in the platform era**

Achilleas Karadimitriou\*

## **Abstract**

Since the mid-1990s, the evolving digitalisation of communications has given rise to new challenges for public service broadcasters (PSBs) and privately owned broadcasting organizations (POBOs), which have turned into media platforms by extending their services beyond traditional radio and television broadcasts. Considering several transformations, instigated by the platformisation of communication, this study raises the question concerning to what extent is there a policy defense of legacy broadcasting media in Greece against a background of growing competition, thriving in an environment dominated by technology-led companies (e.g., Meta) and Over the Top (OTT) subscription-based models of television content's distribution (e.g., Netflix). Taking as a case study the Greek media market, this paper aims to discuss the wider operational challenges faced by contemporary broadcasting organizations attempting to serve the public service/interest journalism mission. The research draws on traditional and newly established theoretical concepts - like public interest/service journalism (Europe), public or civic journalism (USA), and ongoing platformisation of communication - and its findings are based on a questionnaire survey, conducted through the online participation of media professionals from the Greek media market.

**Keywords:** platformisation of communication, public service/interest journalism, media platforms, digital platforms culture.

## **Introduction**

The public service broadcasting (PSB) system in Europe was created based on the philosophy of BBC organization's first Director-General, John Reith. Although over the years it has been reasonably adapted to the evolutionary pressures of the communication field, it strongly connected the idea of PSB with a series of core values: educating, informing, and entertaining the public, promoting democratic principles and domestic culture, promoting pluralism and social cohesion, ensuring universal public access to services offered by broadcasters of non-commercial nature (Banerjee and Seneviratne 2005; Mendel 2011; Ofcom 2005). Since the

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2000s, scholars have argued that the idea of PSB cannot remain entrenched in the traditional framework of radio and television services but should also include the new online media services (Trappel, 2008) with the relevant media organizations turning into public providers of digital entertainment and information services (Arino & Ahlert 2004).

From this perspective, in the new digital field, the old notion of “public service broadcasting” (PSB) has expanded under the new term “public service media” (PSM) which describes the enlarged presence of broadcasters in new online audiovisual platforms. In this context, they have been regarded as providers and aggregators of public value content for diverse digital platforms (Leurdijk, 2007). According to scholars, it seems that in the new media environment the transfer of PSM services, namely communication services of a public-social nature, is considered a collective venture to which many "players" contribute at the same time, and therefore the cooperation between them needs to be strengthened (Donders 2012: 42).

In the new digital media field, PSM services can be considered all those actions that regardless of the medium of origin (radio, television, internet, mobile device) fulfill public interest objectives that have been established legally (Donders & Pauwels, 2012: 83). This argument is enhanced in the platform-dominated environment in which even commercial broadcasters provide the public with a wide range of online (video-on-demand/streaming) services. Therefore, the question raised is whether the provision of content of public-social value remains the exclusive prerogative of traditional PSBs, or whether it has been extended -in some respects- to media organizations serving commercial interests.

The notion of public service has been widely discussed and analysed by media scholars in various countries (Donders 2021; Moe & Syvertsen 2009; Murdock 2005). Scholarship projects of such type usually adopt either a normative stance, seeking to examine the values that should be incorporated into the mission of PSM, or a policy perspective exploring the compliance of PSM with their remit, framed by potential changes in the regulatory framework required because of technological advances. Nevertheless, in previous research, Urbániková (2023) highlighted the scarce literature concerning the perceived ideal of public service by journalists and managers working for PSM organizations. Literature is even more scarce as to whether and how the public service ethos is interpreted by the media professionals of privately owned broadcasting organizations (POBOs). This study addresses this research gap by taking as a case study the particularities of the Greek broadcasting system and by setting a twofold contribution as an objective.

Specifically, it examines the concept of public service/interest journalism from the perspective of those media professionals whose job is to apply this concept in practice, namely journalists and managers working for the Hellenic Broadcasting Corporation (ERT), but also from the viewpoint of peers working for privately owned broadcasting organizations. By illuminating this under-researched area, we aspire to reach potential suggestions or recommendations regarding how the coexistence between the PSB and privately owned media organizations can combat the increasing dynamics of the powerful worldwide digital intermediaries.

In Greece, even though typically the privately owned broadcasters are not required to operate under the burden of a public service mission, as applied in the case of the Hellenic Broadcasting Corporation (ERT), there is a Constitutional article indicating that the direct control of the state to which radio and television are subject " aims at the objective and equal transmission of information and news, as well as speech and art's products, ensuring the quality level of the programs imposed by the social mission of radio and television and the cultural development of the country, as well as the respect for the value of the human being and the protection of childhood and youth" (Constitution, Article 15; Stratilatis 2023). In this regard, commercial broadcasters' operation, despite their profit-driven status, is closely related to a social (public interest) mission whose implementation ensures the healthy evolution of the media ecosystem overall. In this research, the terms "public interest" and "public service" are employed interchangeably to refer to news media output aimed at serving the good of all citizens.

### **The core values of European public service/interest journalism vs US public or civic journalism**

Public interest/service journalism (PSJ/PIJ) refers to news output that serves the community and advances democratic societies. The beginning was made in Europe by John Reith, the first Director-General of the BBC, articulating the triad of "informing, educating, and entertaining" the public through miscellaneous content of PSBs addressing all portions of the audience. This distinctive value-related infrastructure was enriched over time, as exemplified by the EBU, which put forward six core principles for PSM of the digital era: universality, independence, excellence, diversity, accountability, and innovation (EBU 2014). In this regard, journalism practices incorporating impartial, trusted news and current affairs serve objectives that empower individuals to participate in the public sphere (Iosifidis 2011) and confront their needs even in unstable circumstances (Chasi and Rodny-Gumede 2022). Transplanting the values of PSJ from Western to Eastern Europe has proved a great challenge (Stewart 2012).

In the American news industry, theorizing the main notions related to the PSB system reflect an evolving but not identical approach to that of Europe. Public journalism (or civic journalism) in the 1990s was perceived as a media operating model aimed primarily at cultivating engagement with the audience (Merritt 1998, Rosen 1994). Other principles related to this model were establishing open dialogue mechanisms with the audience, the potential of ordinary citizens to influence news media outlets' agendas, news-making on a more comprehensible basis, and reporting that mobilizes citizens toward positive issues (Nip 2008).

Despite its decline at the beginning of the 21st century, internet technologies are argued to have facilitated some of its principles to be applicable even in the new media age (Ferrucci 2017: 356). A revised practice of public journalism, called "public service journalism", was observed by Ferrucci (2015a) in a new market model of the news industry, exemplified by the digitally native news nonprofit (DNNN) organizations, whose operation is based on alternative revenue

sources compared to those employed by traditional media (e.g., donations from the public, grants, corporate sponsorships). Other advantages lie in that they also tend to cover community-building stories (Konieczna & Robinson 2014) and present news by emphasizing the context, the diversity of sources, and the potential solutions, to a greater extent than traditional media (Ferrucci 2015b).

From this perspective, US public service journalism refers to a news-making process in which citizens' participation is vital, and the emphasis is placed on topics impacting citizenship and democracy (Ferrucci, 2015a). The difference between public journalism and public service journalism lies in the degree of citizens' participation in setting the news agenda: in the former case the objective was equal participation in news agenda building between citizens and journalists, whereas in the latter case, the active role of citizens is framed by the predominance of journalists in maintaining the role of final decision-maker in news agenda setting (Ferrucci, 2017: 359).

According to Ferrucci (2017: 367), PSJ is currently applied by digitally native news nonprofit (DNNN) organizations through digital technological means which facilitate citizens' involvement in news-gathering procedures without prioritizing a space to create their content. In this model of news agenda-setting, journalists aim to serve the entire public - not merely a loyal audience - and advocate open lines of communication with all citizens, through regular community meetings, whose input is vital to news production processes. Every day citizens are encouraged and requested to argue, comment, correct, enhance, and affect news-gathering procedures.

The divergent approaches between Europe and the USA indicate that the potential of journalism to promote and advocate the public good is interpreted differently among societies, according to the political, cultural, and ethical context in which journalism practices are set in force. Even if we consider case studies beyond Europe and the USA, it is observed that PIJ serving the common good takes on new patterns of implementation. For instance, in South Africa, where the notion of community is valuable, journalism that contributes to the public good is perceived as decolonial storytelling that supports the establishment of peaceful and just societies for all and invests in the redefinition of practices addressing a diverse nation (Chasi & Rodny-Gumede 2022: 1629 & 1635).

### **Perceptions of Public Service Media (PSM) Mission**

The perceptions related to PSM mission differentiate between academics, institutions, audiences, media organizations managers, and journalists, as different emphasis is placed on a wide range of core values. A study investigating how journalists and managers, working for the PSB of Slovakia (RTVS) perceive the essence of public service mission and journalism, against a backdrop of clashes between reporters/editors and newly recruited managers, reveals that both

professional groups emphasize independence from market pressure rather than autonomy from political power. Their perceptions lack the elements of high-quality entertainment and current affairs related to interpretations-explanations as part of the public service mission, and at the same time, limited acknowledgment is given to news output aimed at closely examining power holders. They discuss PSM mainly from a market-failure perspective, meaning that they see them as a precious counterbalance against commercial media by providing niche content considered important despite its unpopularity (Urbániková 2023: 1366-1368).

A study exploring the extent to which PSJ in Spain contributes to developing the public voice of citizens, by analyzing the perceptions of TVE's news programmes audience, reveals a lack of recognition of their status as citizens requesting "neutral" information. Research participants described media as an instrument of the system offering citizens limited freedom in giving or withholding consent as to the conditions of the system generally. More diversity in journalism content is requested accompanied by the need for citizens' voices to be considered in news-making processes (Graván, Mateos, & Broullón-Lozano 2020).

As to the case of the USA, the research of Beam et al. (2009) is indicative of US journalists' commitment to informing the public and serving the public interest by addressing all socio-economic groups in their communities even in conditions of economic pressure and technological turmoil. The maintenance of PSJ as a core professional value is also reflected, albeit to a lesser extent, in journalists' perceptions of media owners' and media managers' stances, who are believed to embrace the principle of serving the public as a quite important or extremely important organizational objective.

Quality journalism is another aspect of the communication field, challenged by the shift to a digital, mobile, and platform-dominated media environment. Quality journalism's understanding varies in the relevant literature, and different features of news coverage have been associated with it. Six of them have been articulated by Urban and Schweiger (2014) who emphasize principles like diversity, focus on issues with social impact, comprehensible content conducive to public opinion formation, neutral and balanced storytelling, accuracy, and ethics in news reporting.

In the digital environment, quality news content and popularity are not considered to be antithetical values. The perceptions of managers, editors, reporters, and business staff members of local and regional newspapers in four countries refer to a definition of quality journalism incorporating traditional news values, like proximity in the sense of serving a local audience, particular emphasis on producing public-service reporting revolving around local news and targeting a wide audience (Jenkins & Nielsen 2020).

### **Innovations and public service media (PSM) content in the platform era**

Due to the digitization phenomenon, reflection on the mission and importance of PSBs has been rekindled, including opposing views (Donders, Raats, & Tintel 2020, Harrison & Wessels 2005,



Jakubowicz 2006). To be more precise, the debate about PSM has expanded, incorporating, among others, video-on-demand (VOD) platforms which, combined with interfaces in general, are considered an integral part of the media systems (Distelmeyer 2018, Kelly 2020, Kelly & Sørensen 2021).

As PSM organizations undergo a new phase of digital transformation within a networked field of communications convergence, they are proposed to shift their mission to big data aimed at offering personalized services with an emphasis on young audiences and integrating data journalism into the newsroom (Murschetz, 2020: 82, EBU, 2019). Moreover, the increasingly competitive environment of the media market, intensified by the rising popularity of subscription-based audiovisual content distribution of international appeal (e.g., Netflix), has urged PSM to adopt datafication processes, i.e. systems of algorithmically curated content selection (e.g. the VoD platform DRTV of Danish PSB, Sørensen 2020).

Amid these innovative initiatives, the strategies developed by PSM in the online environment are heterogeneous in terms of their degree of maturity and targeting (Donders 2019: 1012) with the relevant research confirming that there is no linear response process to new trends in the audiovisual field (D' Arma et al. 2021; Kelly & Sorensen 2021). Some of them refer to indulging in co-productions with video-on-demand service providers in their quest to achieve international sales (D' Arma et al. 2021: 695) with the choices of young audiences perceived by media managers as vital to the sustainability of PSM (Lowe & Maijanen, 2019: 14).

In today's networked communication field, PSM organizations are believed to have the potential to resist phenomena harmful to the public sphere, such as fake news dissemination, and at the same time preserve the variety of their news output regardless of ideological and moral patterns. This mission is called by d'Haenens (2021: 452) "responsive diversity", a concept that includes not only the highlighting of diverse and heterogeneous issues, opinions, and attitudes but also the distance of individuals from their ideological frameworks aimed at raising their awareness towards the process of critical dialogue.

The rapid development of algorithmic technology has led PSM to employ news bot practices within newsrooms based on the collaboration of technologists and journalists. This is exemplified by the BBC's experimentations with chatbots for chat-like interaction with users or with one-way distribution bots primarily for news publishing during the period 2015-2017. The aim was to improve audience reach and engagement, particularly among young digital users, by providing a personalised tone for news and an individualised, interactive, conversational mode of address (Jones and Jones 2019).

## **Research Questions**

This study assumes that in Greece despite the different operational value-related infrastructure between the Hellenic public service broadcasting corporation (ERT) and the privately owned media, significant convergences occur in media professionals' views when it comes to the

challenges afflicting the implementation of the social mission of journalism. Even though the two sides of the media industry are motivated by different aims when implementing journalism practices, the embracement of a public mission in journalism may be counterfeit from both camps reflecting a structural crisis of the whole media ecosystem.

Based on the theoretical framework, as developed above, the research questions raised can be summarised as follows:

Q1. What perceptions do media professionals working for the Hellenic Broadcasting Corporation (ERT) and privately owned media corporations hold concerning journalism in the platform era? Are the attributes associated with the journalism profession aligned with a public interest/service rationale and to what extent do they indicate a policy defense against the challenges of the platform era?

Q2. Do the perceived working patterns in the two types of media organizations reflect considerable divergences between them?

Q3. To what extent do media professionals' perceptions of contemporary newsrooms' editorial decisions indicate shifts in the core values related to public service/interest journalism under the pressures of the platform era?

## **Research Methodology**

To examine the research questions about PSJ implementation in public broadcasters as opposed to commercial ones, an online survey was conducted based on a sample of availability, whose participants filled in the digital questionnaire uploaded on the shout.com platform. The questionnaire was dispersed through email to all journalistic staff members of the Hellenic public service broadcasting corporation as well as to commercial media journalists belonging to the Journalists' Union of Athens Daily Newspapers (JUADN) during the period April-June of 2023 and 2024 respectively.

The research participants' views regarding media organisations' contribution to public service/interest journalism were investigated based on 22 variables, constructed according to an 11-point scale (zero to ten). Before data analysis implementation, the 11-point scale was converted into a 3-point scale (1. Zero or minimal contribution/importance/threat, 2. Moderate contribution/importance/threat, 3. Very strong or outstanding contribution/importance/threat), serving better the purposes of the research project. The questionnaire also included several open-ended questions based on which the respondents articulated in detail their viewpoints on major operational features of the news division where they offer their services. Besides, to enhance the research findings with qualitative data five semi-structured interviews were conducted with journalists and managerial executives working for the Hellenic public service broadcasting corporation and for mainstream commercial broadcasters.

The research sample consists of both male and female journalists with a slight predominance of the former (Table 1). In terms of age, most of the participants belong to the middle age category (35-44 years old) or an even more mature age group (45-54 years old) reflecting media professionals with a long career in journalism (mostly over 20 years). In the case of ERT public service broadcasting corporation, most of the participants are either television journalists or editors-in-chief in radio, television and web services sectors, whereas in the case of privately-owned media organisations the sample comprises mostly journalists contributing to all types of media output, followed by editors-in-chief and journalists working exclusively for the web, printed media or television sector.

**Table 1:** Research participants' main features (%).

	<b>Hellenic Public Service Corporation (ERT)</b> (N= 60)	<b>Privately owned / Commercial Broadcasters</b> (N= 81)
<b>Gender (%)</b>		
Men	57	59
Women	43	41
<b>Age Category (%)</b>		
Up to 24 years old	0	0
25-34 years old	0	4
35-44 years old	22	17
45-54 years old	40	36
55-64 years old	35	35
65+	4	9
<b>Years of Media Services Experience (%)</b>	(1 <sup>st</sup> column in ERT broadcaster 2 <sup>nd</sup> column in media field overall)	
Up to 5	7 0	0
6-10	9 0	0
11-15	4 5	10
16-20	9 13	10
Over 20	71 82	80
<b>Current Position in Media Organisation (%)</b>		
• TV Journalists	36	11
• Radio Journalists	5	2
• Web Journalists	9	14
• Printed press Journalists	0	10
• Journalists in combined media types	7	25
• Editors-in-chief	19	14
• News production team members	7	2
• Head of News Division	2	5
• Administrative positions (e.g. press office services, editorial consultant, proofreading employee)	13	17

Source: Author's research.

## Research Findings

### *Innovation and news output contribution to public service/interest journalism*

The research findings reveal that the media professionals of the privately owned media outlets acknowledge the innovative level of the news organisation in which they work to a greater extent than the employees of ERT, both in terms of its informative and web services sector (Table 2). This reflects not merely a great divergence in the self-perception of the two camps, but also the greater challenges with which the PSB is persistently faced (e.g. interventionism culture in news editorial practices and staff positioning). From this perspective, it can be argued that the ERT broadcaster, first and foremost, needs to convince its human resources of its initiatives' relevance, otherwise convincing the audience of its overall value as an institution seems wishful thinking.

**Table 2:** Perceived innovation in the information output and online services of the Greek broadcasting organizations.

On a scale from zero to ten, please rate how innovative you consider the media organisation you work in, compared to its competitors, in terms of...	weighted average	no or little innovative (ratings 0-3)	Quite innovative (ratings 4-6)	Very or extremely innovative (ratings 7-10)
<b>ERT broadcaster's employees</b>				
<b>its information services</b>	4.04/10	47	33	20
<b>its online services</b>	5.14/10	27	39	34
<b>Privately owned broadcasters' employees</b>				
<b>its information services</b>	5.69/10	22	34	44
<b>its online services</b>	5.84/10	15	43	42

Source: Author's research.

Moreover, the perceived contribution of news output to public service/interest journalism is -to some extent- a point of divergence between the professionals of the Hellenic public service broadcaster (ERT) and those of privately owned media organisations (Table 3). The employees of ERT seem to applaud mostly the extraordinary potential of radio content to serve public service news values, followed by online news, as opposed to their competitors from commercial media who seem to favor primarily online news in terms of the influence they can exert in this direction. On the other hand, television output is considered the least useful in ensuring public service news values by both categories of media professionals, signifying that the once adorable medium has now lost its dynamism among the news professionals' circles. Nevertheless, regardless of the corporate identity of a media organization, both sides overwhelmingly acknowledge the relevance of producing and disseminating content that aligns with public service core values on the part of all media outlet types of the country (public service or commercial ones) by employing appropriate journalism practices (91% and 79% of the sample respectively evaluate this aspect of high or outstanding importance).

**Table 3:** Perceived contribution of television, radio, and online news services to public service/interest journalism.

On a scale from zero to ten, please rate to what extent you consider that the following services offered by the media organisations you work in contribute to public service journalism	weighted average	zero or minimal contribution (ratings 0-3)	moderate contribution (ratings 4-6)	very strong or outstanding contribution (ratings 7-10)
<b>ERT broadcaster's employees</b>				
<b>Television News</b>	5.68/11	34	35	31
<b>Radio News</b>	6.63/11	21	33	46
<b>Online News</b>	6.16/11	25	35	40
<b>Privately owned broadcasters' employees</b>				
<b>Television News</b>	4.17/11	60	29	11
<b>Radio News</b>	5.86/11	31	41	28
<b>Online News</b>	6.02/11	33	30	37

Source: Author's research.

The special value placed on online news by research participants does not seem to pay off equally for all audience categories. Particularly in the case of the ERT broadcaster, the media professionals appear mostly pessimistic and wary of the potential to appeal to a young audience as opposed to their peers in commercial media who express a quite more optimistic view on the matter. As to the digital news sector's future development, the employees of broadcasters, which comprise the research sample, intra-organizationally share differing perceptions of the management's readiness to adopt new strategies or profess ignorance of the matter (by 31% in the ERT case and 20% in commercial broadcasters' case).

Journalists working in privately owned media organisations are more convinced about the potential of the newsroom in serving the values of PSJ compared to ERT broadcasters' journalists. Nevertheless, media professionals of both sectors acknowledge the challenges that act as a deterrent to serving the public service ethos. The employees of commercial media highlight the inhibiting factor of the media organisation's editorial policy ("the line of the media outlet" as defined in the Greek context), which may be amendable from time to time, censorship in general, the insufficient knowledge of journalists on several topics, the perception of news as a commodity, as well as the adoption of "churnalism" in news processing and dissemination. The occasional trend of covering superficially current affairs in the sense of "journalists dealing with fluff instead of the substance that affects citizens" is another major weakness that is expressed. Despite these challenges, commercial media employees are, for the most part, moderately or highly optimistic about the editorial strategies adopted within newsrooms claiming their focus on serving public service values.

By contrast, ERT broadcasters' employees rate very low the potential of the newsroom in contributing to public service values, criticizing persistent and intertemporal vulnerabilities of

the broadcaster, among which stand out the following: the governmental interventionism in news-making and administrative matters (such as the appointment of managers and other executives based on nepotism values), lack of staff members' evaluation governed by civil servant mentality, self-censorship of journalists in agenda-setting process as well as avoidance of permanent staff renewal. This negative perception of ERT broadcaster's employees does not incorporate the organisation's ability to respond to technological developments. The journalists of the Hellenic public service broadcasting corporation rate themselves almost equally with the commercial journalists in terms of multimedia capabilities (6.14/10 and 6.09/10 weighted average respectively), claiming that the ERT broadcaster "should provide high-quality services without adapting to the general meanness that prevails".

#### *Criteria of news agenda-setting*

Traditionally the news agenda-setting process adopted by PSM organizations and commercial news outlets has been driven by different criteria following the mission of each media category. Specifically, the goal of universality in serving the needs of the entire public is believed to push PSM to a more multi-prismatic selection of news flow compared to commercial media organisations. However, our research findings do not reflect a clear divergence between public service and commercial media in terms of how the news agenda of the day is configured (Table 4, Appendix). For instance, the criterion of "what the public likes most" seems to be frequently employed as a decisive factor in the news agenda-building process by both types of media organizations (in the ERT broadcaster very frequently used by 45%, while in commercial media very frequently used by 53% or always by 17%).

The distinctive presence of the "audience preferences" criterion in how newsroom members select the news agenda for public dissemination, partly explains the convergences in the thematic categories of news output released into the air. Journalists derived both from the ERT broadcaster and privately owned media outlets acknowledge the daily coverage of topics regarding civic life, politics, economy, society, environment, culture, athletics, and international affairs. In terms of the news agenda configuration, the only divergence lies in the enhanced emphasis placed on celebrity topics by the commercial broadcasters, whereas in the case of the public service channels the coverage of such issues is argued to be mostly rare.

In many respects, the news agenda-building process is based on an almost identical prioritization of criteria between public service and commercial broadcasters (Table 5, Appendix). Among the criteria that stand out in terms of weight, during the editorial decision task, is the connection of an event with institutional authorities, the public personalities it incorporates as well as the selections of the competitors regarding the news topics that deserve special prominence. The latter criterion is considered of outstanding relevance even by the ERT broadcasters' employees who are ideally expected to serve the principle of thematic diversity addressing the needs and preferences of all audience categories. The findings reveal that commercial media organizations, compared to their public competitor, set additional criteria as

decisive, to a greater extent than the ERT organization, such as the potential impact of a news topic on society and its connection to human interest storytelling.

*News editorial practices*

Media professionals both from the ERT broadcaster and commercial media organizations primarily evaluate themselves as highly capable of utilizing multimedia tools in journalistic practices (50% and 56% respectively describe themselves as multimedia users to a great extent). Nevertheless, this positive self-assessment does not ensure a quality-driven news output. Journalists from both types of media outlets mostly criticize contemporary news editorial strategies as having deteriorated in quality compared to the past, even though this common perception is based on differentiated rationales. The ERT broadcaster’s news professionals frequently associate the qualitative decline of news editorial practices with the need to serve the government's communication policy, while those working for commercial media raise the issue of increasing difficulties when it comes to the task of news verification in a context of a professional ethos which currently deprioritizes the news editorial policy aimed at public service values. Minor exceptions are believed to appear in an admittedly contradictory media landscape. This perception is reflected in the argument raised by a journalist working for a privately owned media organisation, who sees a few news digital ventures oriented to investigative journalism as a counterbalance:

“The picture is contradictory. In mainstream media, editorial strategies tend to turn for the worse. For the first time, however, recently a small but distinct community of independent - mainly online - media has appeared, moving in the field of independent investigative journalism, which adopt, with considerable success, new editorial strategies that, as a rule, tend to serve the public interest”.

Overall, media professionals from both types of broadcasting organizations evaluate quite low the potential of newsroom practices in service public service/interest journalism values (table 5).

**Table 5:** Perceived integrated newsroom model’s and editorial strategies’ contribution to PSJ, according to broadcasters’ employees (%).

On a scale from zero to ten, please rate to what extent	weighted average	zero or minimal contribution (ratings 0-3)	moderate contribution (ratings 4-6)	very strong or outstanding contribution (ratings 7-10)
• the current way of organizing the newsroom contributes to serving PSJ	4.2/10	41.8	34.5	23.6
• do you consider that the editorial strategies currently adopted by the broadcaster contribute to serving PSJ	3.91/10	47.3	34.5	18.2

Source: Author’s research.

As to the recommendations proposed with the aim of improving the existing editorial strategies applicable in the newsroom, journalists from both sectors - PSM and privately owned news organizations - emphasize the need to work on the claim of independence from governmental influences and guided editorial policies imposed by the media owners respectively. This unanimous perception of how contemporary journalistic practices are implemented is indicative of the plight or of the unfavorable position of inefficiency in which journalism in Greece has fallen. Journalists ask for a radical change in the way news coverage is implemented putting forward, in different ways, the imperative need to make the media more multifaceted.

In this regard, ERT public service broadcaster's journalists propose "more research on social topics, more emphasis on the daily problems of the citizens", framed by a non-exclusion policy regarding article writing and dissemination, whereas commercial journalists suggest that "since the world is changing, journalism is expected to adopt a polycentric perception of things", accompanied by a rise in reporters' knowledge level. The question of the pursuit of greater objectivity in news coverage is directly raised by ERT journalists, while their peers working in the commercial sector emphasize the necessity of the privately owned media sector to transform the processes based on which the personnel is selected, upgraded, or evaluated.

#### *Threats endangering public service/interest journalism ethos*

In terms of the threats afflicting media organizations' pursuit to serve PSJ, the Hellenic Broadcasting Corporation (ERT) and the privately owned media are informed both by shared features and differentiations (Table 6, Appendix). Interventionism in journalistic practices and the lack of meritocracy in journalistic staff selection are perceived as the greatest challenges in both types of media organisations. From a comparative perspective, the interventional policy in journalistic operations is emphasized as a very strong/outstanding threat mostly by the media professionals of the commercial media sector - rather than the PSB sector - indicating an admittedly lack of independence in how the commercial newsrooms perform their tasks. Indicative of the seriousness of the problem is the viewpoint of a journalist arguing that "one of the most considerable challenges that may determine the future of journalism is asserting independence from the boss line and power systems". Based on a similar rationale the media professionals of the ERT newsroom seek to claim independence from the governmental line considering equally important the pursuit of renewing the journalistic staff with younger and more active journalists".

Another shared threatening factor affecting the mission of public service journalism is argued to be the insufficient training of journalists on new media developments coupled with the reduced journalistic staff. These are also challenges perceived as outstandingly unfavorable for the journalism profession to a greater extent by commercial newsroom professionals rather than by ERT broadcaster's employees. Nevertheless, in the case of the Hellenic Broadcasting Corporation (ERT), the threats rated as extremely important are more numerous - compared to those of the privately owned media -referring to the limitation of resources allocated to the



public service broadcaster or the possible replacement of the licence fee with other forms of financing.

## Conclusions

In contemporary media markets in which large-scale digital intermediaries have provoked the digital disruption phenomenon, the developments in public service/interest journalism are worth coherent assessment by considering the platformisation of communication that has raised new challenges pertinent to the healthy operation of the (small) national media markets. This study raises the crucial question of the sustainability of public service/interest journalism mission based on the perceptions of media professionals working for legacy broadcasting organizations in Greece (for Hellenic Broadcasting Corporation ERT and commercial media).

Both categories of news professionals perceive television as the least dynamic medium in serving the public service/interest journalism values. This is a considerable finding that can be related to the commercialization features embraced by the newsrooms in Greece since the savage deregulation of the broadcasting sector. The hard-to-attract youth audience, which prefers social media platforms as news sources or often belongs to the news avoiders' category, is a challenge for both types of media organizations with the employees of the public service broadcaster (ERT) expressing stronger concerns about this matter despite its great strides towards digitization.

The multidimensional threats articulated by research participants as a deterrent to public service/interest journalism mission point to a structural crisis faced by the journalism field in Greece. Media professionals derived from both types of media organizations highlight the regime of independence-lack in which they perform their journalistic tasks against a backdrop of limited or non-meritorious staffing of media organizations. Their common perceptions of the journalism profession as suffering from overt interventionist forces and self-censorship trends are related to the distorted development of the broadcasting system, stigmatized by governmental control over its operations against a background of long-lasting interrelationships between media, politics, entrepreneurship, and the state (Papathanassopoulos et al., 2021).

These findings align with previous research confirming that journalism in Greece has failed to act as the fourth estate (Wiseman, 2023). Examining the perceived threats comparatively, it is noteworthy that despite the shrinking advertising market that has led to layoffs of journalists and the closure or reorganization of historical media titles (Karadimitriou, 2020), research participants do not perceive the declining revenue as the primary threat to journalism sustainability. Instead, they highlight interventionism and lack of meritocracy in staff handling, challenges that reflect long-standing vulnerabilities of the national media system. The cultivation of renewed knowledge and skills, based on retraining sessions in new media practices, combined with the fight against self-censorship or interventionism is considered a way out of the threats facing contemporary journalism.

Despite the deep awareness of the structural crisis that Greek journalism is going through, the voices of resistance or recommendations to reverse the existing problematic working setting are hardly visible in Greek journalists' responses. This comes in contrast to the stances held in other countries such as Slovakia, which represents a fragile democracy, nevertheless, PSM organizations are believed to claim the vitality of the journalism profession. The relevant research has revealed the resistance practices used by journalists, when their autonomy is endangered, incorporating several internal and external collective initiatives based on mutual support, through which journalists' voices are articulated and heard even at the cost of their jobs (Urbániková, 2021).

The high importance given to “what the audience likes” in combination with “what the competitor is promoting” as predicting factors in the news agenda-building process of both public service and commercial broadcasters is a special feature indicating a uniformity of strategic mindset among the highly ranked media professionals that hardly ensures the principle of diversity in news coverage. Moreover, despite the integrated model of newsroom operation, confirmed by most research participants, this innovation is mostly perceived as impotent or limited efficient in safeguarding public service/interest journalism objectives. This entails that in the platform era quality journalism addressing all audience categories is not reliant so much on familiarizing with technological advancements but rather on releasing the long-lasting vulnerabilities of the past.

To meet this objective broadcasting organizations should consider carefully the enhanced role of journalism education in cultivating new models for professionalism and media entrepreneurship (Lowe & Stavitsky 2016: 323). In the platform age, the success of such a plan seems to prerequisite the synergy of all types of news organizations under the rationale that the traditional values in journalistic practices must be consistently reclaimed and put into renewed force aimed at making news production of a public service ethos combined with the related journalistic values a feasible task. The resolution of the crisis in Greek (public service /interest) journalism necessitates systemic reforms by broadcasters and a broader transition towards transparent and meritocratic media organizations, eager to adopt strategic plans of policy enhancement and editorial strategies' reinvigoration in alignment with the demands of the platformised era.

The analysis reveals that the perceptions held by media professionals do not amount to a rejection of what the concept of public service/interest journalism stands for; however, the core values of the concept are mis-practiced under a media market tied to long-standing dependencies of the past and newly imposed threats of the platform society. The responses of research participants seem to challenge the assumption that a strong commitment to public service/interest journalism can be served more efficiently by the public service media rather than by privately owned media organizations. The research findings show that a reconsideration of those arguments excluding public service/interest journalism from profit-driven news

organizations is imperative based on the rationale that each media marketplace, due to its particularities, needs to be examined on an ad hoc basis.

## References

- Arino, M. & Ahlert, C. (2004). Beyond broadcasting: the digital future of public service broadcasting. *Prometheus*, 22 (4), 393–410. <https://doi.org/10.1080/08109020412331311678>
- Banerjee, I. and Seneviratne, K. (2005). *Public Service Broadcasting: A best practices sourcebook*, AMIC, UNESCO. Retrieved from <https://unesdoc.unesco.org/ark:/48223/pf0000141584> (accessed 9/9/2024).
- Beam, R. A., Brownlee, B. J., Weaver, D. H., & Di Cicco, D. T. (2009). Journalism and Public Service in Troubled Times. *Journalism Studies*, 10 (6), 734–753. <https://doi.org/10.1080/14616700903274084>
- Chasi, C., & Rodny-Gumede, Y. (2022). Decolonial Journalism: New Notes on Ubuntu and the Public Interest. *Journalism Studies*, 23 (13), 1625–1637. <https://doi.org/10.1080/1461670X.2022.2083006>
- d’Haenens, L. (2021). Reclaiming the public square in times of post-truth and platformisation: A crucial mission for public service media. *European Journal of Communication*, 36(5): 450-453. <https://doi.org/10.1177/026732312111043181>
- Donders, K. (2021). *Public Service Media in Europe: Law, Theory and Practice* (1st ed.). Routledge. <https://doi.org/10.4324/9781351105569>
- Donders, K. (2019). Public service media beyond the digital hype: distribution strategies in a platform era. *Media, Culture & Society*, 41 (7): 1011–1028. <https://doi.org/10.1177/0163443719857616>
- Donders, K. (2012). *Public Service Media and Policy in Europe*. Hampshire: Palgrave Macmillan.
- Donders, K. & Pauwels, C. (2012). "Ex Ante Tests: A Means to an End or the End for Public Service Media?". In Lowe, G. F. & Steemers, J. (Eds), *Regaining the Initiative for Public Service Media Ripe 2011* (pp. 79-95). Göteborg: Nordicom.
- Donders, K., Raats, T., & Tintel, S. (2020). (Re)defining public service media from an economic perspective: Damned if they do, damned if they don't. In von Rimscha, M. B. (Ed.), *Management and Economics of Communication* (pp. 203–222). De Gruyter Mouton. doi: 10.1515/9783110589542-011
- EBU (2014). *Public Service Values, Editorial Principles and Guidelines*. Le Grand-Saconnex: EBU. Retrieved from <https://www.ebu.ch/guides/public-service-values-editorial-principles> (accessed 1/4/2024).
- Ferrucci, P. (2017). Exploring Public Service Journalism: Digitally Native News Nonprofits and Engagement. *Journalism & Mass Communication Quarterly*, 94 (1), 355-370. <https://doi.org/10.1177/1077699016681968>
- Ferrucci, P. (2015a). Public journalism no more: The digitally native news nonprofit and public service journalism. *Journalism*, 16, 904-919.

- Ferrucci, P. (2015b). Primary differences: How market orientation can influence content. *Journal of Media Practice*, 16, 195-210.
- Harrison, J., & Wessels, B. (2005). A new public service communication environment? Public service broadcasting values in the reconfiguring media. *New Media & Society*, 7 (6), 834–853. doi: 10.1177/1461444805058172
- Iosifidis, P. (2011). The public sphere, social networks and public service media. *Information, Communication & Society*, 14 (5), 619–637. <https://doi.org/10.1080/1369118X.2010.514356>
- Jakubowicz, K. (2006). Keep the essence, change (almost) everything else: Redefining PSB for the 21<sup>st</sup> century. In I. Banerjee & K. Seneviratne (Eds.), *Public Service Broadcasting in the Age of Globalization*. AMIC Asian Media Information and Communication Centre, Nanyang Technological University School of Communication and Information.
- Jenkins, J., & Nielsen, R. K. (2020). Proximity, Public Service, and Popularity: A Comparative Study of How Local Journalists View Quality News. *Journalism Studies*, 21 (2), 236-253, DOI: 10.1080/1461670X.2019.1636704
- Jones, B., & Jones, R. (2019). Public Service Chatbots: Automating Conversation with BBC News. *Digital Journalism*, 7 (8), 1032–1053. <https://doi.org/10.1080/21670811.2019.1609371>
- Karadimitriou, A. (2020): "Journalistic Professionalism in Greece: Between Chronic and Acute Crises". In Karatzogianni, A., & Veneti, A. (Eds.), *The Emerald Handbook of Digital Media in Greece: Journalism and Political Communication in Times of Crisis* (pp. 159-178). London: Emerald Publishing.
- Konieczna, M., & Robinson, S. (2014). Emerging news non-profits: A case study for rebuilding community trust? *Journalism*, 15, 968-986.
- Leurdijk, A. (2007). "Public Service Media Dilemmas and Regulation in a Converging Media Landscape". In Lowe, F. G. & Bardoel, J. (Eds), *From Public Service Broadcasting to Public Service Media*, (pp. 71-85). Göteborg: Nordicom.
- Lowe, G. F. & Maijanen, P. (2019). Making sense of the public service mission in media: youth audiences, competition, and strategic management, *Journal of Media Business Studies*, 16:1, 1-18, DOI: 10.1080/16522354.2018.1553279
- Lowe, G. F., & Stavitsky, A. G. (2016). Ensuring public service news provision in the era of networked communications. *International Communication Gazette*, 78 (4), 311-329. <https://doi.org/10.1177/1748048516632163>
- Mendel, T. (2011). *Public service broadcasting: A comparative legal survey*, Paris: UNESCO. Retrieved from <https://unesdoc.unesco.org/ark:/48223/pf0000192459> (Accessed 15/4/2021).
- Merritt, D. (1998). *Public journalism and public life: Why telling the news is not enough* (2<sup>nd</sup> ed.). Mahwah, NJ: Lawrence Erlbaum.
- Moe, H. and Syvertsen (2009). "Researching Public Service Broadcasting." In Wahl-Jorgensen, K. and Hanitzsch, T. (Eds.), *The Handbook of Journalism Studies* (pp. 398–412). Abingdon, New York: Routledge.

- Murdock, G. (2005). "Public Broadcasting and Democratic Culture: Consumers, Citizens, and Communards." In Wasko, J. (Ed.), *A Companion to Television* (pp. 174–198). Malden, Oxford, Carlton: Blackwell Publishing.
- Nip, J. Y. M. (2008). The last days of civic journalism. *Journalism Practice*, 2, 179-196.
- Ofcom (2005). *Ofcom Review of Public Service Television Broadcasting. Phase 3 – Competition for Quality*, February 8. Retrieved from <https://www.ofcom.org.uk/siteassets/resources/documents/consultations/uncategorised/8764-psb3/psb3.pdf?v=324131> (accessed 10/9/2024).
- Papathanassopoulos, S., Karadimitriou, A., Kostopoulos, C., & Archontaki, I. (2021). Greece: Media concentration and independent journalism between austerity and digital disruption. In J. Trappel, & T. Tomaz (Eds.), *The Media for Democracy Monitor 2021: How leading news media survive digital transformation* (Vol. 2) (pp. 177–230). Nordicom, University of Gothenburg. <https://doi.org/10.48335/97891888554285>
- Rosen, J. (1994). Making things more public: On the political responsibility of the media intellectual. *Critical Studies in Mass Communication*, 11, 363-388.
- Stewart, J. (2012). A suitable case for transplant? The BBC and public service journalism in post-communist Romania. *Journalism Practice*, 7(3), 329–344. <https://doi.org/10.1080/17512786.2012.724542>
- Stratilatis, K. (2023). «Article 15: the constitutional regulation of radio and television and other audio-visual media». Στο Vlachopoulos, S., Kontiades, X., & Tasopoulos, G. (Eds.), *Constitution: Interpretation by Article*. Electronic Publication. Athens: Center for European Constitutional Law. Retrieved from <https://www.syntagmawatch.gr/wp-content/uploads/2023/02/%CE%86%CF%81%CE%B8%CF%81%CE%BF-15-me-cover.pdf>
- Trappel, J. (2008). Online Media within the Public Service Realm?: Reasons to Include Online into the Public Service Mission. *Convergence: The International Journal of Research into New Media Technologies*, 14 (3): 313-322. <https://doi.org/10.1177/1354856508091083>
- Urbániková, M. (2023). Arguing About the Essence of Public Service in Public Service Media: A Case Study of a Newsroom Conflict at Slovak RTVS. *Journalism Studies*, 24(10), 1352-1374. <https://doi.org/10.1080/1461670X.2023.2214935>
- Urbániková, M. (2021). Resisting Perceived Interference in Journalistic Autonomy: The Study of Public Service Media in Slovakia. *Media and Communication*, 9(4), 93-103. <https://doi.org/10.17645/mac.v9i4.4204>
- Urban, J., & Schweiger, W. (2014). News Quality from the Recipients' Perspective: Investigating Recipients' Ability to Judge the Normative Quality of News. *Journalism Studies* 15(6): 821–840.
- Wiseman, J. (2023). Unlearning what they taught us. *British Journalism Review*, 34(4), 61-66. <https://doi.org/10.1177/09564748231216247>

Appendix

Table 4: Perceived relevance of criteria applied to news agenda-setting process (%).

	ERT Broadcaster	Privately owned broadcasters	ERT Broadcaster			Privately owned broadcasters		
On a scale from zero to ten, please rate the importance of the following criteria in the news selection process adopted by the public service broadcaster (ERT)	weighted average	weighted average	criterion of zero or minimal importance (ratings 0-3)	criterion of moderate importance (ratings 4-6)	criterion of high or outstanding importance (ratings 7-10)	criterion of zero or minimal importance (ratings 0-3)	criterion of moderate importance (ratings 4-6)	criterion of high or outstanding importance (ratings 7-10)
<b>What the public likes most at a given time</b>	6.02/11	7.27/11	27	47	26	22	23	55
<b>News topic's association with a social media influencer</b>	3.95/11	4.64/11	59	29	12	50	28	22
<b>Whether an event is related to institutional authorities</b>	9.0/11	8.09/11	9	15	76	14	20	66
<b>Public figures involved in a news event (except for persons related to institutional authorities)</b>	7.89/11	7.46/11	9	35	56	19	26	55
<b>The impact of a news topic on society</b>	6.93/11	7.64/11	18	39	43	17	22	61
<b>Whether a news event contains a human-interest story</b>	6.86/11	7.32/11	17	41	42	15	33	52
<b>The dramatization that encapsulates a timely news topic</b>	6.95/11	7.11/11	23	30	47	21	26	53
<b>What the competitors / the rest of the country's news organizations are disclosing</b>	7.79/11	7.73/11	18	15	67	17	19	64

<b>The current topics (trending topics) being discussed on social media platforms</b>	6.23/11	6.54/11	28	29	43	32	24	44
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Source: Author’s research.

**Table 6:** Perceived threats afflicting public service/interest journalism mission (%).

	ERT Broadcaster	Privately owned broadcasters	ERT Broadcaster			Privately owned broadcasters		
	weighted average	weighted average	zero or minimal threat (ratings 0-3)	moderate threat (ratings 4-6)	very strong or outstanding threat (ratings 7-10)	zero or minimal threat (ratings 0-3)	moderate threat (ratings 4-6)	very strong or outstanding threat (ratings 7-10)
On a scale from zero to ten, please rate to what extent you consider the following to operate as a threat to public service journalism								
<b>Reduced journalistic staff</b>	7.71/11	7.59/11	21	15	64	20	17	63
<b>Interventions in journalistic work</b>	8.8/11	8.6/11	15	11	74	18	4	78
<b>Social media platforms utilization in the context of journalistic work</b>	5.55/11	6.26/11	43	33	24	31	26	43
<b>Limitation of resources earmarked for the broadcaster</b>	8.45/11	6.81/11	14	13	73	25	31	44
<b>Possible abolition of the licence fee and application of an alternative form of funding</b>	8.4/11	NA	15	17	68	NA	NA	NA
<b>Lack of meritocracy in the way journalistic personnel is employed</b>	9.29/11	8.4/11	10	8	82	13	18	69
<b>Frequent changes in administrative-managerial staff</b>	6.86/11	6.23/11	22	32	46	32	32	36
<b>Limited technological means available to journalists</b>	7.46/11	6.84/11	23	22	55	25	25	50

<b>Insufficient training of journalists regarding the new media developments</b>	7.73/11	7.77/11	19	22	59	17	19	64
<b>The competition emanating from commercial broadcasters</b>	NA	NA	35	29	36	14	45	41

Source: Author's research.



## **Foreword to the fifth thematic: Political Communication, Leadership, and Crisis Management in Public Discourse**

Maria Matsiola\*

The fifth thematic is titled “Political Communication, Leadership, and Crisis Management in Public Discourse” and it delves into the multifaceted dynamics of political communication, leadership, and the strategies employed during crises as they manifest in public discourse.

The thematic begins with the study titled “Narratives of sustainability in public political discourse” that explores the interplay between political communication, social media, and the evolving narrative of sustainable development, offering insights into how this critical concept is negotiated and performed in public discourse. Specifically, the study examines the framing of the concept of sustainable development within Greek political discourse, focusing on how it is communicated through social media. The research investigates the frequency and manner in which Greek parliamentary candidates and their political groups use their personal Twitter accounts and group pages to frame sustainable development, both during election campaigns and while in office.

The second paper of this thematic is titled “Sentiment Analysis in the Political Dialogue: Case Study of the Candidates for the Presidency of the SYRIZA-Progressive Alliance party” and focuses on analyzing speeches delivered by the five candidates for the presidency of the party at the Continuous Congress of Syriza – Progressive Alliance on September 2nd, 2023. The sentiment analysis can offer valuable insights into the overall mood and emotional tone of a political discussion and the objective of the study is to determine whether the apparent positive tone in candidates' speeches reliably predicts electoral success and whether the topics addressed in each speech influence its overall sentiment.

The third paper, titled “Communication Crisis Management - Communication Actions and Image Management Strategies - Case Study” focuses on discussing the nature of crises and their impact on organizations, particularly focusing on communication strategies during such events. Specifically, it examines the Volkswagen emissions scandal, known as Dieselgate scandal, which

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began in September 2015 when the company was caught violating the Clean Air Act and it sets the foundation for exploring crisis management and communication strategies.

The fourth paper is titled “Leadership, rhetoric, crisis management and mediation: The communicative dimension of the leader in the context of searching for the profile of the modern leader and the leader of the future” and delves into the concept of leadership by highlighting the communicative dimension of the leader. Based on literature review it analyzes different aspects of leadership, composes the profile of the modern leader and the leader of the future, defines and describes concepts equally important to leadership, such as rhetoric, crisis management and mediation and interconnects and relates these concepts to leadership.

The fifth and last paper is titled “Ideology and cultural references in shadow theatre. The case of Karagiozis” and is an ideological and cultural approach to the Shadow Theatre and in particular an episode of Karagiozis. It focuses on the episode *"Alexander the Great and the Cursed Serpent"* and it approaches the Shadow Theatre as a timeless and cross-cultural medium suitable for ideological, sociological, and psychoanalytical analysis, excluding more conventional theatrical or folkloric interpretations. The chapter analyzes the emitted message from the perspective of the popular collective creator and its reception by both general and child-specific audiences. The study draws a parallel between dream imagery (manifest content) and shadow theatre depictions, framing its analysis within the psychoanalytical dimensions of audience engagement and cultural production.

## Narratives of sustainability in public political discourse

Thomai Baltzi, Nikolaos Vryzas \*

### Abstract

Currently, the concept of sustainable development occupies a prominent role in local, national and international debates about the planning, decision-making and policy practices that are supposed to guide current and future societies worldwide (Jacobsson, 2019). Its heavy use, even by institutions such as the European Union, shows that it is now a powerful tool for governance (Luke, 2005). However, these few applied practices of sustainable development reveal the weakness that the concept itself and its use carries (Linnér and Selin 2013, 2005). This research aims to map the frames of sustainable development as it is attributed in public political discourse both during an election period and during the governmental period. Specifically, the study focuses on the frequency and the way in which Greek parliamentary candidates through their personal Twitter accounts, as well as through their political group pages, semantically frame the sustainable development narrative and hence how it is put into public discourse. The rationale of the research is part of the scholarly debate on the social semiotic construction of a hegemonic narrative (Andrée, 2011) through social media. The classification will be based on the method of Entman's (1993) empirically grounded theory "Framing Theory", which analyses the semiological construction of certain aspects of a perceived reality through which a particular definition of the problem, causal interpretations, moral evaluations and/or recommendations for managing an issue are presented. The analysis reveals an interesting paradox, indicating contradictory understandings of the semantic and narrative performance of sustainable development.

**Keywords:** sustainability, ideology, neoliberalism, media, twitter analysis.

### Introduction

Sustainable development has been at the core of political discussions in recent decades and has increasingly become integrated into the agendas of policymakers and institutional bodies, as well as corporate strategies (Biermann et al. 2012). A consequence of this dialectic is the growing environmental risks such as climate change, biodiversity loss, and the global nitrogen cycle (Benson et.al 2014, Sala et al. 2020). Indeed, sustainable development, stemming from the urgent need to address these issues, has been the primary environmental rhetoric in political circles. However, despite being a global phenomenon of rhetorical dialectic, it remains more ambiguous

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than ever, resulting in it not being well understood by the general public and hence not gaining much traction in practice (Fuchs 2017).

According to Bauman (2005), the ambiguity of the term sustainability arises from contemporary political debates, following the redefinition it underwent during the creation of the Brundtland Report (Vallance et.al 2011), which engendered a general and indefinite dialectic of the term aimed at evolving within each ideological approach and national policy context (Nurmela et al. 2002). Therefore, sustainable development practices are adopted by countries and governments (Rosati and Faria, 2019), which are called upon to adopt the sustainable goals based on the national priorities they have identified (Antwi-Agyei et al. 2018, Allen et al. 2018).

Therefore, public awareness on sustainable development issues is shaped and constructed by political discourse and, by extension, by the Mass Media, which serve as the communication channel between political decisions and civil society (Grover 2021, Vakeel and Panigrahi 2018, Scheyvens et al. 2016, Carroll 2016). Until now, the scientific community has not definitively defined the framing of sustainable development, which is constructed by political discourse, thus revealing gaps in understanding regarding the mechanisms adopted by governments in sustainability rhetoric (Muff et al. 2020, Winkler and Williams 2017, Fukuda-Parr 2016, 2019, 2020).

This study aims to elucidate and compare the dialectic of sustainable development as constructed by the Greek political and media scene and communicated to the general public through social networks. Specifically, after clarifying the terms and conditions from international and domestic literature, an exploratory study follows on the Twitter accounts of Greek elected officials, the media, and the general public during the 2022-2023 pre-election period. The framing analysis model according to the principles outlined by Entman (1993) was selected, which is conducted through topic modeling."The following subsection introduces and clarifies the different interpretations of sustainable development through relevant studies, and then delves into the semantics of the term. This is followed by a section presenting the presentation of sustainability in the neoliberal system and how it is constructed through specific ideologies as a tool of governance. The paper then continues with the specific case study, methods and materials used. Finally, a final discussion is provided where the main results are highlighted, as well as the conclusions drawn.

## **The dialectic of sustainable development**

In recent years, the concept of sustainable development has played a central role in public decision-making and has become a primary goal of governance policy (Hugé et al. 2013, 2016). The central narrative guiding it, through which sustainability will bring about development that meets the needs of the present while ensuring the coverage of future generations' needs (WCED 1987),

constitutes a response to the environmental impacts threatening the integrity of the planet, including present and future human livelihoods and well-being across multiple dimensions (Millennium Ecosystem Assessment, MEA 2005).

Already, as of September 2015, a new Sustainable Development Agenda was adopted by 193 members (UN 2017), reinforcing three main pillars or the triple bottom line of sustainable development (Pal & Jenkins 2014), which included promoting economic development aimed at prosperity, preserving the environment, and promoting social justice. However, according to several researchers, the concept of sustainability, as it has been shaped by the Brundtland report and thereafter, has led to oversimplification, thereby enveloping it in a veil of neutrality (Wilson & Swyngedouw 2014, Raco 2014, Raco, Imrie & Lin 2012).

According to Kagawa (2007), the diverse ideological representations emerging in the concept of sustainable development contribute to making it an argument of 'general purpose' or 'catch-all'. Moreover, the rhetoric of flexibility and the positive tone surrounding it (Kagawa 2007), while simultaneously the assessment of policies for sustainable development cannot be easily observed (Clarke and Islam 2006), leads sustainable development into the realm of symbolic politics. According to Wilson and Swyngedouw (2014), who conducted an analysis regarding the term's weakness, the Brundtland report and its 17 goals create an ideologically neutral character of sustainability through the ambiguity of the concept, resulting in a lack of understanding of sustainable development policies and ultimately leading to the failure of the concept. The paradox, however, is that while the concept is presented as neutral across various ideologies, at the same time, it is malleable enough to be applied to any ideology (Lynch & Khan 2020).

Therefore, the continuous transformative construction of sustainability rhetoric often encompasses ambiguous, ambivalent, and incoherent interpretations (Doulton and Brown 2009). Specifically, as Dryzek (2005) states, the interpretive frameworks underlying a concept/dialectic depend on the group of people constructing them. To date, several scholars have delved into the analysis of sustainable development frameworks, particularly in media representation, especially in traditional and digital media (Koteyko 2012, p. 31, Diprose 2018, Baltzi et al. 2022). Specifically, Lewis (2000), recognizing the significance of constructing sustainable development, conducted a study in the United States, which showed that American media do not host conflicting sustainability frameworks but consistently present three specific developmental frameworks. He demonstrated that sustainable development is framed to a greater extent in economic, technological, and industrial terms. Furthermore, in a related study conducted in 2012 on British newspapers, a significant overlap was found between climate change, business activity, and carbon accounting, while there was a complete absence of the pillar of social justice (Koteyko 2012, p. 31, Diprose 2018). Subsequently, Atanasova (2019) conducted a framing analysis study on a self-funded and independent news medium, the newspaper 'Positive News.' Her study consistently identified the

use of three frameworks: economic development, technology, and to a much lesser extent, the de-growth framework. In a relevant context, Baltzi, Skamnakis, and Kostarella argued in their 2022 research on the Greek digital media that the dialectic of sustainable development is primarily framed in terms of economic development.

Moreover, the studies under consideration consistently demonstrate that economic development, technological solutions, and entrepreneurial activity dominate the frameworks of sustainable development, excluding the other two pillars, environmental conservation, and social justice (Audet, 2014; Agyeman 2007; Bailey & Wilson 2009; Escobar 1995). According to Davies (2014) and Lewis et al. (2008), the framing of sustainable development is shaped by specific worldviews and ideological approaches, which in many cases align with the dominant political discourse. This occurs because the dialectic of sustainable development offers significant benefits to policymakers as they are portrayed as active politicians acting on a global phenomenon that concerns everyone (Newig 2007; Leiserowitz et al. 2005).

The analysis of sustainable development is thus a multifaceted and multidimensional issue, which is in a continuous transformative process as different discourses coexist under the umbrella of the post-discourse of the concept. To date, the scientific community has mainly focused on analyzing the frameworks of sustainable development in the mass media and how they systematically construct the concept. The present study aims to identify and compare the rhetoric of sustainable development in political and media discourse during an election period, as noted by Froio et al. (2016), which can be a reasonable political strategy, especially during election periods."

## **Methodology and tools**

### *Research Objective*

The primary objective of this study is to examine how the concept of sustainable development is framed and defined within both intra-political discourse and media rhetoric on the social media platform Twitter. The selection of this case study was based on a comprehensive literature review, which identified a gap in research focusing on how sustainable development is framed in political discourse. Therefore, this research aims to provide a broader contribution to the academic community. Twitter was chosen due to its role as a platform for political consultation (Grover et al. 2019), utilized by political leaders, public institutions, news agencies, engaged citizens, and others. Furthermore, Twitter has become an official communication channel between decision-makers and the general public (Aswani et al. 2018; 2019). Following an exhaustive review of both domestic and international studies to ensure a comprehensive understanding of the topic and methodological approaches, this research seeks to address the following specific research inquiries:

What frames are employed in constructing the concept of sustainable development within intra-political discourse?

What frames are utilized in constructing the concept of sustainable development within media discourse?

Which frames prevail in the discourse of the public?

### *Research Design*

The selected research period spans from June 1, 2022, to June 22, 2023, coinciding with a national pre-election period in Greece. This period was chosen to facilitate a comprehensive analysis and provide insights into the research questions posed. Specifically, the national pre-election period serves as a case study to examine the narrative frameworks surrounding sustainable development in political discourse, media coverage, and public perception. By focusing on this pre-election timeframe, it becomes feasible to assess the extent to which political parties incorporate sustainable development practices into their agendas, the alignment between political agendas and media coverage, and the prevalent interpretative frameworks of sustainability within the broader public.

The analysis in this research followed three primary stages. Initially, Greek tweets were identified and extracted based on seven predetermined keywords identified on the Twitter social network: "circular economy," "environment," "sustainable development," "sustainable," "climate change," "climate crisis," "green economy," and "renewable energy sources." Subsequently, a sample of 164,671 tweets was collected over the course of one year, each containing at least one of these keywords. Following a rigorous assessment of data quality to ensure suitability for the study, 169,815 tweets (100% of the sample) were deemed valid and included in the analysis.

The second stage involved an initial categorization of the collected data from the first stage. Specifically, utilizing the digital tool VouliWatch, an independent, non-profit organization for open governance, official Twitter usernames of Greek MPs and political parties were gathered and subsequently classified in the database. The identified parties and their respective MPs were: Nea Demokratia (ND), SYRIZA, PASOK, KKE, Niki, Elliniki Lysi, and Pleysi Eleutherias. Consequently, the majority of tweets were found within the party framework of ND, totaling 256 tweets. SYRIZA encompassed 95 tweets overall, PASOK gathered 239 tweets, and Elliniki Lysi included 49 tweets. No tweets were identified during this period for the SPARTIATES party formation, whereas only 1 tweet each was found for the KKE and Niki parties. Finally, 3 tweets were identified within the Pleysi Eleutherias party formation. Following this classification, Media Outlets were categorized next, comprising 4,403 tweets, and the public with a total of 164,671 tweets.

Regarding the categorization of media outlets, the Greek Media Registry was taken into consideration, and in a second phase, specific suffixes in their usernames and descriptions, including “info,” “jour,” “press,” “news,” “newspaper,” “time,” and “eidiseis,” were used to classify accounts under the category “Greek Media.” Subsequently, accounts with the suffix “gr” were identified and categorized following careful and in-depth observation of their content. Accounts that described and self-identified as media outlets were classified under the “Greek Media” category. The remaining accounts were removed from the sample, as they were considered to potentially represent companies or institutions with specific purposes.

The general public was categorized based on the two aforementioned classifications, along with an analysis of the accounts. Interaction levels and follower counts played a significant role in the selection of users as part of the public. Bots were not included as a separate category in the sample, as the purpose of this research is to identify the most frequent narratives surrounding the concept of sustainable development within these classifications, considering a holistic approach to the sample. In all three categorization stages, the same keywords were used to make it possible to trace the flow of information from politicians to media and from media to the public.

As a result, three final categories were established: Greek MPs, Media Outlets, and the general public. At this stage, potential shortcomings were identified. Specifically, the categorization aimed to extract comprehensive results for the research questions formulated at the initial stage. Therefore, during the result classification, possible bots, fake accounts, and Media Outlets were not identified based on their reliability. Additionally, no false news, misinformation, or propaganda were differentiated from the analyzed tweets. This selection was made to capture an overall picture of the first two groups (MPs, Media Outlets) and how this holistically influences the third group (general public).

The third stage constitutes the data analysis phase. Frame analysis through topic modeling was chosen as the analytical method. Considering Entamn's (1993: 52) theory of framing, which posits that "framing is the selection of certain aspects of perceived reality and their presentation in a communicative text, through which a specific definition of the problem, a causal interpretation, a moral evaluation, and/or a recommendation for treatment of the described object are promoted," the results of LDA, which model the texts, can be interpreted as traces of different ways of discussing a topic and thus as frames. In this study, patterns of co-occurring words related to sustainable development were sought, representing patterns of usage of certain words surrounding the dialectic and rhetoric of sustainable development (Evans 2014; DiMaggio et al. 2013). Such patterns of word usage can reasonably be interpreted as an approach to framing patterns.



### *Data Analysis*

For the data analysis stage, we have introduced the use of topic modelling, a popular Natural Language Processing technique that allows quantitative analysis of big corpora in an unsupervised way (Jacobi et al., 2028; Vrysis et al., 2021; Curiskis et al., 2020). Topic modelling aims at dividing the texts in a corpus into discrete clusters, based on some criterion of similarity. Each cluster defines a topic that has been discovered from the unstructured corpus and is described by a set of words. In the current approach, the similarity criterion is based on the extraction of the Term Frequency-Inverse Document Frequency (TF-IDF) features which is a metric of the importance of certain keywords. It is derived from the synthesis of two separate metrics, Term Frequency (TF), and Inverse Document Frequency (IDF), as implied by its name (Curiskis et al., 2020). TF expresses how often a term appears in a document, while IDF the importance of the information carried by the term. Empirically, TF-IDF is higher when a term appears often in a document, but has a smaller frequency in the collection of documents. Keywords that are common in the whole corpus are not considered important to describe a specific cluster (topic). For the clustering process, a Non-negative Matrix Factorization (NMF) model is trained. The model needs the number of clusters as input so that it performs the segmentation of the whole corpus of text in a specific number of topics. For this reason, in this case, experimentation with different predefined numbers of topics is required.

For handling the data and performing initial data cleaning, stop-word removal, etc, the Spacy library was used in Python programming language (Honnibal & Montani 2017). Additional stop words referring to artifacts coming from the Twitter data format were identified and added to the stop word list using empirical exploratory data analysis. For the implementation of the TF-IDF feature extraction and NMF model algorithms, the Python Scikit-learn library was used (Pedregosa et al., 2011). For the configuration of the TF-IDF Vectorizer, we have selected a maximum of 1000 features for vector creation. We experimented with simple words, bigrams, and trigrams to find the most intuitive results. Concerning the number of words defining a topic, we experimented from three to ten words, and we finalized it to the optimum of seven words, which achieved a better understanding of topic separation and characterization. We also experimented with different numbers of discrete topics, finalizing our design to five topics.

### *Frame Analysis of Sustainable Development*

Following the implementation of topic modeling, a systematic approach of inductive analysis was applied in the present research (VanBoxtel et.al 2023). Specifically, from the multitude of lexical sets identified, only those that fulfilled any of the four functions of a frame were selected. Each functional characteristic is presented through a line, while an additional line consolidates the sources referenced in the article, to specifically address functional characteristics of a frame. These sources may illuminate the definition of the problem, the cause, the moral evaluation, and/or the

solution. The lexical sets are continuously compared to identify similarities in propositions regarding the definition of the problem, the causes, the moral evaluations, and the solutions. The final product of this inductive frame analysis is a qualitative description of the frames (see van Gorp & van der Goot, 2012).

This qualitative description of the frames serves as a basis for understanding how sustainable development is conceptualized within different contexts. Each frame is analyzed in terms of its components:

**Definition of the Problem:** How the issue of sustainable development is defined within the lexical sets. This involves identifying the core elements that constitute the perceived problem.

**Cause:** Identifying the underlying causes or factors that contribute to the problem. This involves examining the language used to describe causation and responsibility.

**Moral Evaluation:** Assessing the moral judgments and ethical considerations related to sustainable development. This includes the values and norms that are highlighted in the discourse.

**Solution:** Proposing potential solutions or actions that are suggested to address the problem. This involves analyzing the proposed strategies and their feasibility.

The inductive approach allows for the emergence of patterns and themes that might not be apparent through a purely deductive method. By continuously comparing lexical sets and their functions, the analysis provides a nuanced understanding of the different frames of sustainable development. VanBoxtel et al. (2023) utilized this method to systematically categorize and interpret the discourse on sustainable development. The qualitative description of the frames offers insights into the diverse perspectives and approaches towards sustainable development, reflecting the complexity and multifaceted nature of the concept.

## Results

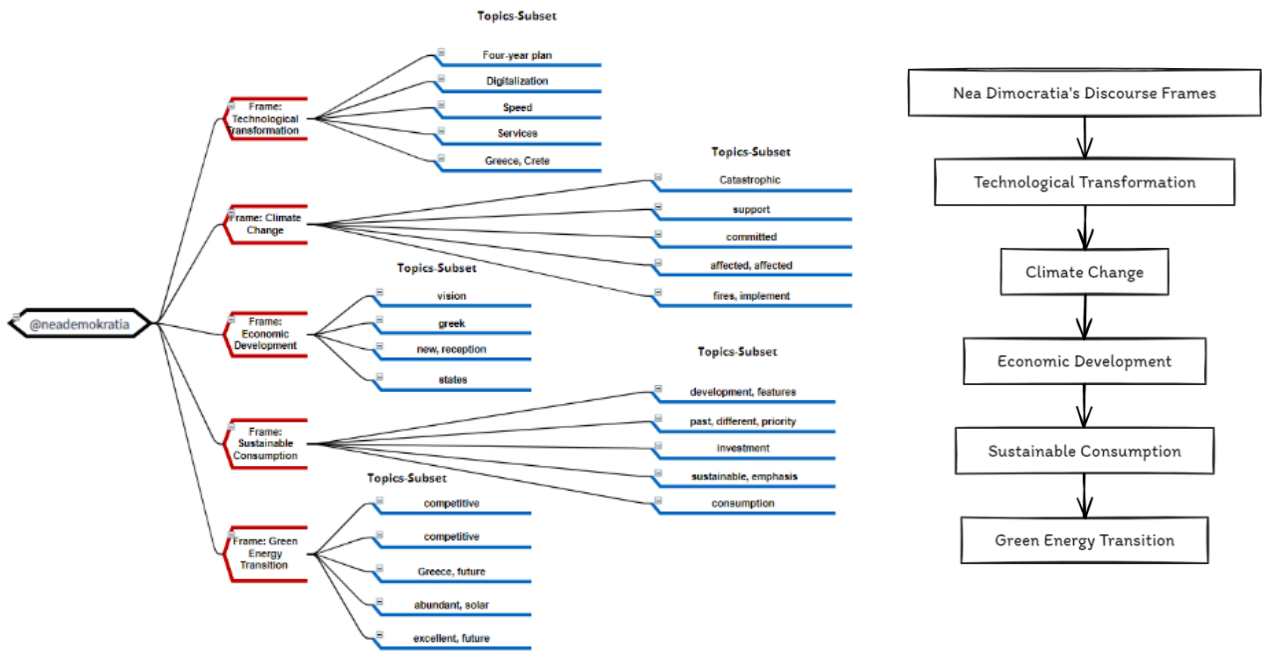
Commencing the analysis with the sets of tweets identified over the course of one year, only 169,815 references within the keywords framework of sustainable development were tallied (see Table 1). Specifically, political formations amassed merely 643 tweets in their public discourse concerning sustainable development and the frameworks surrounding it, while the Media collected a total of 4,403 tweets, and the public gathered 164,671.

**Table 1:** Total tweets of Political formations, Media and General Public

<b>Tweets political formations</b>	<b>Total tweets</b>
Nea Dimokratia	256 tweets

SYRIZA	95 tweets
PASOK	239 tweets
ELLINIKI LYSI	49 tweets
KKE	1 tweet
NIKI	1 tweet
PLEYSI ELEYTHERIAS	3 tweets
SPARTIATES	0 tweet
<b>Total political formations</b>	<b>643 tweets</b>
<b>Total Tweets of Media</b>	<b>4.403 tweets</b>
<b>Total Tweets of General public</b>	<b>164.671</b>

Following the analysis conducted on a per-category basis, Nea Dimokratia consistently presented 5 Frames for the construction of its discourse on sustainable development during the pre-election period. The first frame entails technological transformation, referring to the country's digital transition over a 4-year plan through various services to be provided to the people. This frame is prioritized and functions as a solution to the various challenges hindering sustainable development practices. Subsequently, the second frame in sequence is climate change, which appears with lexical sets such as "destruction, support, committed, affected, fires, implement." Therefore, the climate change frame is identified when the specific political formation aims to describe or inform about a national environmental disaster. The next frame is that of economic development, describing economic transformation. The fourth frame is that of sustainable consumption, focusing on new developmental terms encompassing green consumption models, green entrepreneurship, and individual responsibility in adopting sustainable practices. Lastly, the frame of green energy transition is positioned with terms like "competitive, Greece, future, solar, abundant, excellent."



**Figure 1:** @neadimokratia frame analysis through topic modelling

In the political formation of SYRIZA, the first identified frame in sequence was that of economic development. Specifically, the following lexical set, which includes "mandatory, regulation, bypass, fund, out of court, obligation, proposes, sustainable," demonstrates that SYRIZA constructs the concept of sustainable development both semantically and semiotically in economic terms. This is further evidenced in the second frame in sequence, that of Green Development, where the following Topics-Subset were identified: "sustainable, development, fair, green, step, reconstruct, 1st productive, model, development." The next frame identified is that of developmental transformation, with lexical sets including "picket, wealth, deep, redistribution, change, serious." The fourth frame is the progressive Government, with lexical sets such as "government, call, progressive, SYRIZA, strong, cooperation, mandate, popular." And the last frame is that of Democracy.

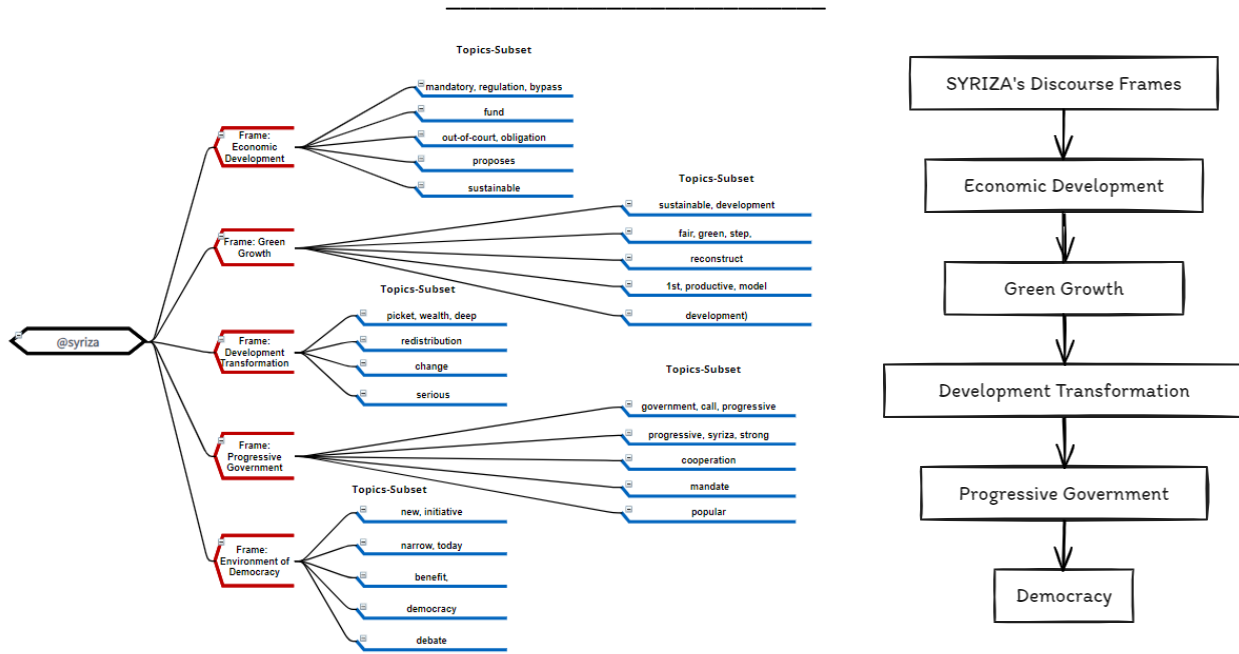


Figure 2: @syryza frame analysis through topic modeling

In the dialectics of sustainable development within PASOK and among its members, five distinct frames were identified, with the environmental framework taking precedence. Specifically, the terms "contact, environment, special microcosm, sustainable" were identified as integral components of this frame. Following closely in priority is the frame of climate change, which is elucidated through subsets encompassing "change, climate, extreme, reconstruct, phenomenon, weather, invest, due, multiply, and prevention". Within this particular political formation, the narrative of sustainable development is constructed primarily in environmental terms, emphasizing the environment and the consequential impacts of human factors. Simultaneously, it underscores the phenomenon of climate change and its profound significance (word: extreme). Subsequently, the frame of equality-inequality emerges, characterized by recurrent motifs such as "development, sustainable, reduce, inequalities, perspective, choices, policies, build, people". Following in sequence is the framework of economic development, which encapsulates keywords such as "debt, sustainable, interest, rates, larger, deficit, bonds, state, debt". This frame addresses the issue of debt and its determination of sustainability, while also incorporating notions of justice and the role of the state. Finally, the last frame in sequence is that of social assistance, which references lexical sets including "environment, health care, parliament, government, family".

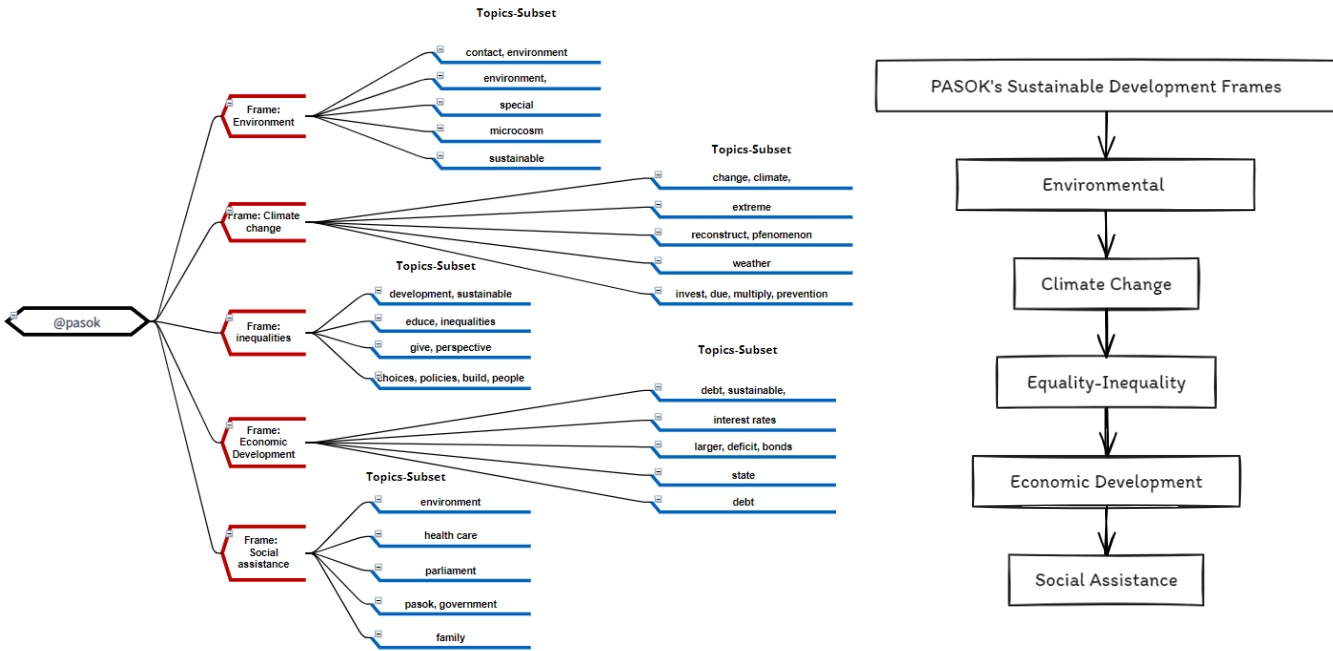


Figure 3: @pasok frame analysis through topic modeling

In the rhetoric of sustainable development within the political formation of Elliniki Lysi, the environmental framework was identified, focusing on energy transition and wind turbines. Specifically, the lexical sets presented were as follows: "environment, Elliniki Lysi, Velopoulos, political, wind turbines, way". Subsequently, the framework explored was that of climate change, with topics-subset including "climate, change, crisis, Greek Solution-Velopoulos, solution, life, obligations". In this particular frame, Greek Solution portrays climate change as a part of a conspiracy theory through which they attempt to steer public opinion in a specific direction. This framework differs from the corresponding frames identified in other political formations. The third frame identified in sequence was that of economic development, linking sustainable development with the nation, homeland, and just policies. The topic-subsets identified were as follows: "Greece, sustainable, country, development, maintain, right, homeland, patriotism, states". This specific framework also distinguishes itself in relation to the rhetoric of the corresponding frames in other political formations. The next two frames identified were those of demographic issues, positioning it as a sustainable development problem with ethnographic characteristics, and the framework of economic development, expressed in terms different from Frame 3. Specifically, this frame exhibited similar characteristics to the others, including lexical sets such as "billion, debt, servicing, private, risk, change, public, Greece".

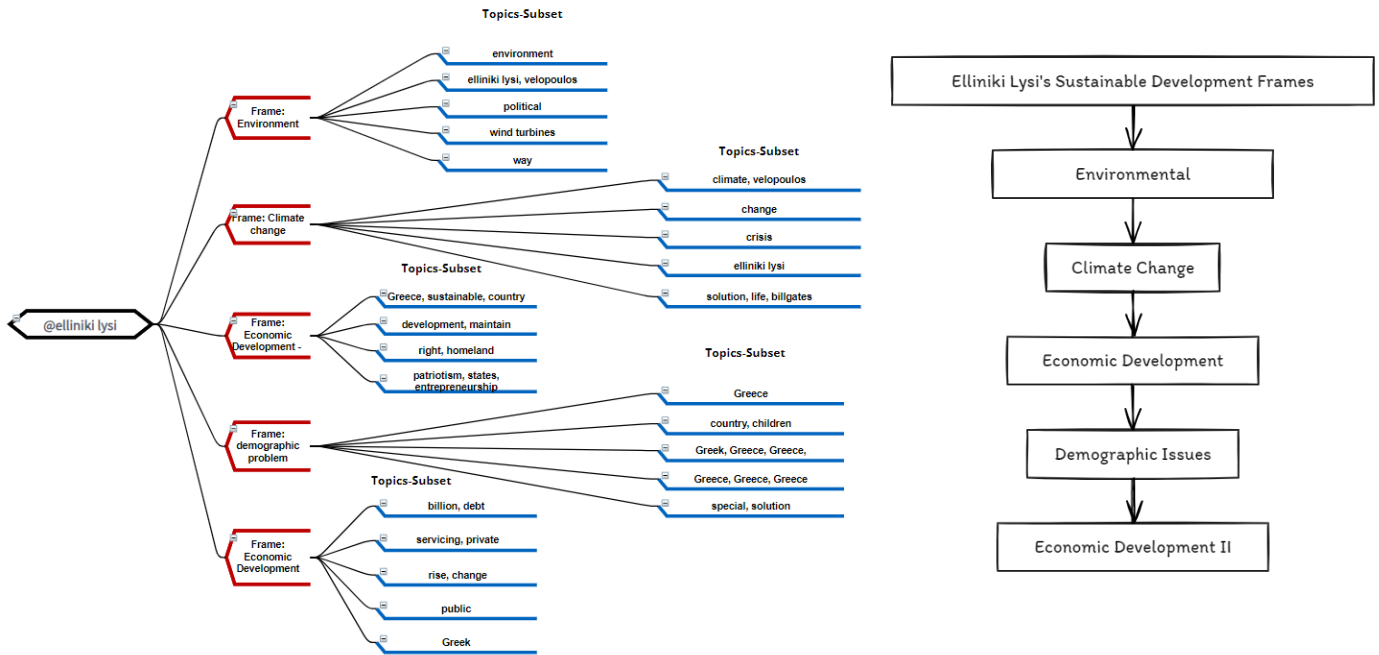


Figure 4: @elliniki lysi frame analysis through topic modeling

The rhetoric of the Greek media on sustainable development issues is surrounded by 5 constant frames during the election period. Specifically, the first frame in hierarchical order was identified as the climate change frame, which is mainly presented with the following lexical frames "climate, change, threatens, blame, effects, U.S.A, scientists, countries". The next context identified in order was that of the environment, but here too it was observed that the reference was to the family or work environment rather than the natural environment. The third context identified was that of green development. The following word sets were identified in this context: 'economy, news, politics, busyness, finance, stock market, green, energy, cyclical, transition'. The economic development context comes fourth in the order identified by keywords "sustainable development, solution, mobility, mobility, tourism, right, priority, new". Finally, the last framework identified was that of green energy transition which is defined as follows "energy sources, renewable, Greece, EU, production, electricity, 2030, benefits".

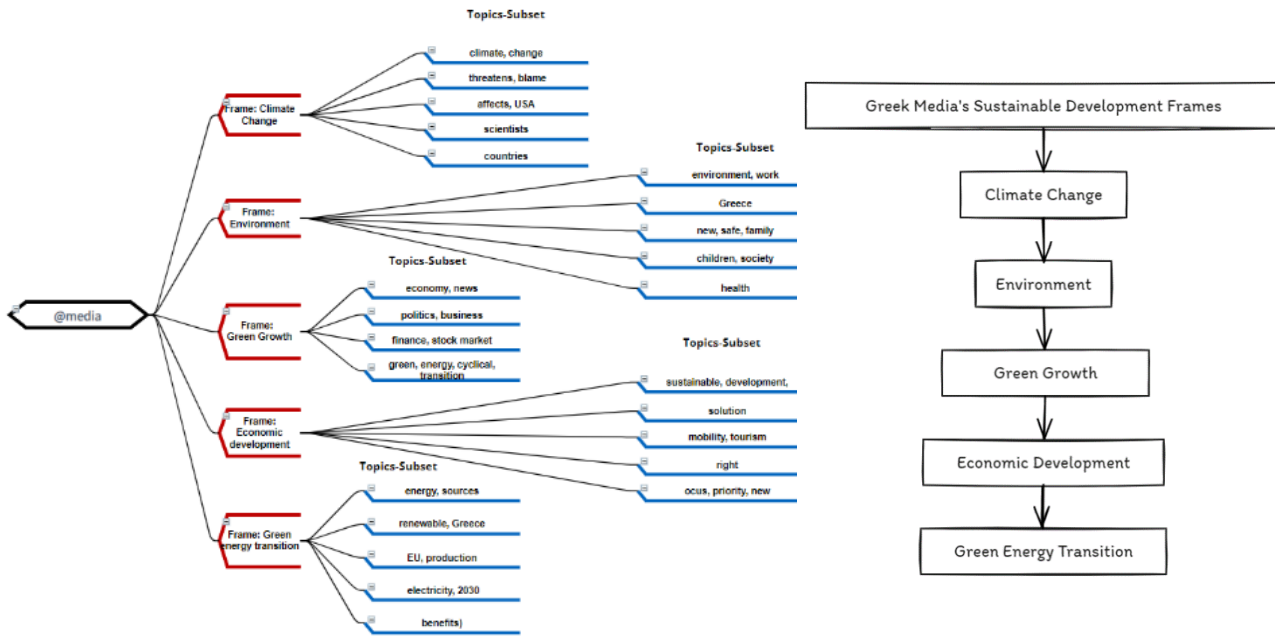
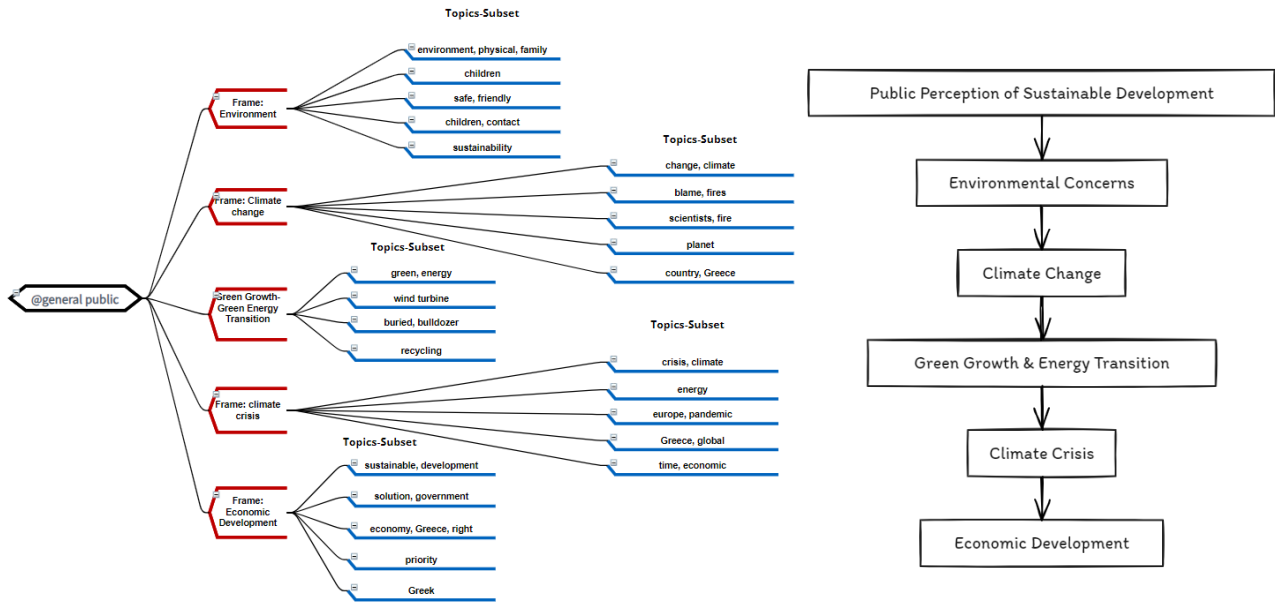


Figure 5: @media frame analysis through topic modeling

The public's perception of sustainable development is delineated by five distinct conceptual frames, as identified within key stakeholder groups, namely politicians and media. The primary frame focuses on environmental concerns, characterized by an amalgam of terms including "environment," "physical," "family," "children," "safe," "friendly," "contact," and "sustainability." Following this, the concept of climate change emerges as the next priority, encapsulated by the terms "change," "climate," "blame," "fires," "scientists," "planet," "country," and "Greece." The third framework involves a dual thematic focus on green growth and the transition to green energy, represented by terms such as "green," "energy," "wind turbine," "buried," "builder," and "recycling." Furthermore, the climate crisis is acknowledged as a significant element within the public's conceptualization, described through the keywords "crisis," "climate," "energy," "Europe," "pandemic," "Greece," "global," "time," and "economic.". Lastly, the hierarchy of perceptions culminates in the context of economic development, which is articulated through the terms "sustainable development," "solution," "government," "economy," "Greece," "right," "priority," and "Greek." This elucidation of conceptual frames highlights the multifaceted nature of public understanding concerning sustainable development.





**Figure 6:** @general public frame analysis through topic modeling

## Conclusion

The findings from this extensive analysis highlight the varied and complex ways in which sustainable development is conceptualized and discussed across different stakeholders in the political, media, and public spheres. Over a year, a significant volume of discourse was captured, revealing how each group prioritizes and frames issues of sustainability in unique ways. However, there are notable gaps and limitations in these discussions that need to be addressed for a more holistic understanding and approach to sustainable development.

**Table 2:** Comparative Frame Analysis of Sustainable Development Across Political Formations, Media Outlets, and the Public

Frame	Nea Demokratia	SYRIZA	PASOK	Elliniki Lysi	Media Outlets	General Public
<b>Technological Transformation</b>	Digital transition, services for citizens	Not prominent	Not prominent	Not prominent	Rarely mentioned	Rarely mentioned
<b>Climate Change</b>	National disasters, fires, support	Mentioned, but less prominent	Focus on "extreme phenomenon"	Conspiracy theory-driven	Urgent coverage, global	Environmental impact, scientists,

	programs		a," weather effects	rhetoric	impacts	fires
<b>Economic Development</b>	Economic transformation, growth	Central to the narrative, focus on reform	Linked to inequality, debt, and state involvement	Homeland, patriotism, just policies	Focus on tourism, mobility, sustainability	Economic stability, government solutions
<b>Sustainable Consumption</b>	Green consumption models, entrepreneurship, individual actions	Not prominent	Inequality reduction, sustainable choices	Not prominent	Not prominent	Green growth, transition to sustainable practices
<b>Green Energy Transition</b>	Solar energy, renewable sources	Green development, new production models	Renewable energy as part of climate change adaptation	Wind turbines, energy crisis	Transition to renewables, energy sources, production	Wind turbines, recycling, energy crisis
<b>Environmental Concerns</b>	Not a central frame	Embedded in broader green development	Core to the narrative, with emphasis on societal impacts	Mentioned in energy and conspiracy contexts	Environment occasionally mentioned (workplace/family)	Core concern, safe and sustainable practices
<b>Social Justice/Assistance</b>	Not prominent	Progressive policies, government collaboration	Reducing inequalities, social safety	Not prominent	Not prominent	Rarely mentioned, but implied in broader environmental concerns
<b>Equality/Inequality</b>	Not prominent	Mentioned in context of green development	Core frame, reduction of inequalities	Not prominent	Not a focus	Only indirectly referenced
<b>Demograph</b>	Not a frame	Not	Not	Highlighte	Not	Not

ic Issues		mentioned	mentioned	d, with ethnographic focus	prominent	prominent
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Political parties, for instance, demonstrate a strategic approach to framing sustainable development, each aligning their rhetoric with broader ideological narratives. Nea Dimokratia emphasizes technological transformation and climate change, aligning these frames with actionable policies and future plans. Yet, their focus on technology may overlook important social dimensions and the need for community engagement in sustainable practices. SYRIZA, on the other hand, focuses on economic and green development, embedding sustainability within economic reform. While this is a comprehensive approach, it may lack specific strategies for immediate environmental challenges and grassroots movements. PASOK prioritizes environmental issues, stressing the need for societal and policy changes to address climate impacts and social inequalities. This approach is commendable, but it might be limited by insufficient attention to economic implications and the practical implementation of proposed policies. Elliniki Lysi's discourse is distinct, mixing environmental concerns with nationalistic and demographic themes. However, this approach may risk marginalizing certain social groups and ignoring the global nature of environmental issues.

The media's portrayal of sustainable development, while varied, often reflects broader societal concerns and the immediacy of climate impacts, highlighting the urgency of addressing such issues. Their discourse suggests a call to action, urging various sectors to prioritize and respond to the pressing demands of environmental and economic sustainability. Despite this urgency, media coverage can sometimes be sensationalized, potentially leading to public fatigue or skepticism. Moreover, media narratives might not always provide in-depth analysis or long-term solutions, focusing instead on immediate crises. Lastly, the general public's engagement reveals a deep concern for environmental and climate issues, recognizing the intertwined nature of ecological health, economic stability, and societal welfare. Their diverse framing underscores a collective acknowledgment of the complexity of sustainable development and the necessity for a holistic approach. However, public discourse may often be fragmented or influenced by misinformation, which can hinder cohesive action. Additionally, there may be a lack of accessible information and resources to empower individual and community-level initiatives.

The findings highlight the diverse and conflicting approaches to sustainable development among policymakers, the media and the public. The framing of the narratives shows how each group uses different frames to promote its own agenda. Sometimes the emphasis is on technological development, sometimes on environmental protection. Similar findings emerged in Koteyko's (2012) UK media research, which found that traditional and digital media promoted sustainable

development framing in economic and technological terms, often neglecting the social justice dimension. This lack of a comprehensive approach appears to be a common factor across the world, as this study also found that the environmental dimension of sustainable development, while important, is often overshadowed by the economic or technological agenda of political parties and the media.

In sum, this analysis underscores the multifaceted nature of sustainable development discourse, reflecting a broad spectrum of perceptions and priorities. By dissecting these frames, stakeholders can better understand and address the diverse concerns and expectations of various groups, aiming for more comprehensive and inclusive sustainable development strategies. Addressing the identified gaps and limitations is crucial for fostering more effective and collaborative efforts toward sustainable development.

## References

- Allen, C., Metternicht, G., & Wiedmann, T. (2018). Initial progress in implementing the Sustainable Development Goals (SDGs): A review of evidence from countries. *Sustainability Science*, *13*, 1453-1467.
- Antwi-Agyei, P., Dougill, A. J., Agyekum, T. P., & Stringer, L. C. (2018). Alignment between nationally determined contributions and the sustainable development goals for West Africa. *Climate Policy*, *18*(10), 1296-1312.
- Aswani, R., Kar, A. K., & Ilavarasan, P. V. (2019). Experience: Managing misinformation in social media—insights for policymakers from Twitter analytics. *Journal of Data and Information Quality (JDIQ)*, *12*(1), 1-18.
- Aswani, R., Kar, A. K., & Vigneswara Ilavarasan, P. (2018). Detection of spammers in Twitter marketing: A hybrid approach using social media analytics and bio inspired computing. *Information Systems Frontiers*, *20*, 515-530.
- Atanasova, D. (2019). Moving society to a sustainable future: The framing of sustainability in a constructive media outlet. *Environmental Communication*, *13*(5), 700-711.
- Audet, R. (2014). The double hermeneutic of sustainability transitions. *Environmental Innovation and Societal Transitions*, *11*, 46-49.
- Agyeman, J. (2007). Communicating “just sustainability”.
- Bailey, I., & Wilson, G. A. (2009). Theorising transitional pathways in response to climate change: Technocentrism, ecocentrism, and the carbon economy. *Environment and Planning A*, *41*(10), 2324-2341.
- Bauman, Z. (2005). *Liquid Life*. Cambridge: Polity.

- Benson, M. H., & Craig, R. K. (2014). The end of sustainability. *Society & Natural Resources*, 27(7), 777-782.
- Biermann, F., Abbott, K., Andresen, S., Bäckstrand, K., Bernstein, S., Betsill, M. M., ... & Zondervan, R. (2012). Transforming governance and institutions for global sustainability: Key insights from the Earth System Governance Project. *Current Opinion in Environmental Sustainability*, 4(1), 51-60.
- Carroll, M. (2016). Formless meditation and sustainability. In *Spirituality and Sustainability: New Horizons and Exemplary Approaches* (pp. 139-153).
- Clarke, M., & Islam, S. M. (2006). National account measures and sustainability objectives: Present approaches and future prospects. *Sustainable Development*, 14(4), 219-233.
- Curiskis, S. A., Drake, B., Osborn, T. R., & Kennedy, P. J. (2020). An evaluation of document clustering and topic modelling in two online social networks: Twitter and Reddit. *Information Processing & Management*, 57(2), 102034.
- Davies, A., Fahy, F., Rau, H., Devaney, L., Doyle, R., Heisserer, B., ... & Pape, J. (2014). ConsEnSus: Consumption, environment, and sustainability. *Environmental Protection Agency, Johnstown Castle, Ireland*.
- Diprose, K., Fern, R., Vanderbeck, R. M., Chen, L., Valentine, G., Liu, C., & McQuaid, K. (2018). Corporations, consumerism and culpability: Sustainability in the British press. *Environmental Communication*, 12(5), 672-685.
- Dryzek, J. S. (2005). *The politics of the earth: Environmental discourses*. Oxford University Press.
- Doulton, H., & Brown, K. (2009). Ten years to prevent catastrophe?: Discourses of climate change and international development in the UK press. *Global Environmental Change*, 19(2), 191-202.
- Entman, R. M. (2007). Framing bias: Media in the distribution of power. *Journal of Communication*, 57(1), 163-173.
- Escobar, A. (1996). Construction nature: Elements for a post-structuralist political ecology. *Futures*, 28(4), 325-343.
- Fuchs, C. (2017). Critical social theory and sustainable development: The role of class, capitalism, and domination in a dialectical analysis of un/sustainability. *Sustainable Development*, 25(5), 443-458.
- Fukuda-Parr, S. (2016). From the Millennium Development Goals to the Sustainable Development Goals: Shifts in purpose, concept, and politics of global goal setting for development. *Gender & Development*, 24(1), 43-52.
- Fukuda-Parr, S. (2019). Keeping out extreme inequality from the SDG agenda—the politics of indicators. *Global Policy*, 10, 61-69.
- Fukuda-Parr, S., & Muchhala, B. (2020). The Southern origins of sustainable development goals: Ideas, actors, aspirations. *World Development*, 126, 104706.

- Grover, P., Kar, A. K., & Ilavarasan, P. V. (2019). Impact of corporate social responsibility on reputation—Insights from tweets on sustainable development goals by CEOs. *International Journal of Information Management*, 48, 39-52.
- Grover, P., Kar, A. K., Gupta, S., & Modgil, S. (2021). Influence of political leaders on sustainable development goals—Insights from Twitter. *Journal of Enterprise Information Management*, 34(6), 1893-1916.
- Honnibal, M., & Montani, I. (2017). *spaCy 2: Natural Language Understanding with Bloom Embeddings, Convolutional Neural Networks and Incremental Parsing*. *Neural Machine Translation*. In Proceedings of the Association for Computational Linguistics (ACL) (pp. 688-697).
- Hugé, J., Waas, T., Dahdouh-Guebas, F., Koedam, N., & Block, T. (2013). A discourse-analytical perspective on sustainability assessment: Interpreting sustainable development in practice. *Sustainability Science*, 8, 187-198.
- Hugé, J., Block, T., Waas, T., Wright, T., & Dahdouh-Guebas, F. (2016). How to walk the talk? Developing actions for sustainability in academic research. *Journal of Cleaner Production*, 137, 83-92.
- Jacobi, C., Van Attevelde, W., & Welbers, K. (2018). *Quantitative analysis of large amounts of journalistic texts using topic modelling*. In *Rethinking Research Methods in an Age of Digital Journalism* (pp. 89-106). Routledge.
- Kagawa, F. (2007). Dissonance in students' perceptions of sustainable development and sustainability: Implications for curriculum change. *International Journal of Sustainability in Higher Education*, 8(3), 317-338.
- Koteyko, N. (2012). Managing carbon emissions: A discursive presentation of 'market-driven sustainability' in the British media. *Language & Communication*, 32(1), 24-35.
- Leiserowitz, A. A., Kates, R. W., & Parris, T. M. (2005). Do global attitudes and behaviors support sustainable development? *Environment: Science and Policy for Sustainable Development*, 47(9), 22-38.
- Lewis, E., Mansfield, C., & Baudains, C. (2008). Getting down and dirty: Values in education for sustainability. *Issues in Educational Research*, 18(2), 138-155.
- Lewis, H. (2012). *Designing for sustainability*. In *Packaging for Sustainability* (pp. 41-106). London: Springer London.
- Lewis, T. L. (2000). Media representations of "sustainable development" sustaining the status quo? *Science Communication*, 21(3), 244-273.
- Lynch, T., & Khan, T. (2020). Understanding what sustainability is not—and what it is. *The Ecological Citizen*, 3(Suppl B), 55-65.
- Millennium Ecosystem Assessment. (2005). *Ecosystems and human well-being* (Vol. 5, p. 563). Washington, DC: Island Press.

- Muff, K., Liechti, A., & Dyllick, T. (2020). How to apply responsible leadership theory in practice: A competency tool to collaborate on the sustainable development goals. *Corporate Social Responsibility and Environmental Management*, 27(5), 2254-2274.
- Newig, J. (2007). Does public participation in environmental decisions lead to improved environmental quality?: towards an analytical framework. *Communication, Cooperation, Participation. International Journal of Sustainability Communication*, 1(1), 51-71.
- Nurmela, J., Kiiamaa, N., & Tanskanen, E. (2002). The Finns and sustainable development. *Futura*, 21(2), 11.
- Pal, M., & Jenkins, J. J. (2014). Reimagining sustainability: An interrogation of the corporate knights' global 100. *Environmental Communication*, 8(3), 388-405.
- Pedregosa, F., Varoquaux, G., Gramfort, A., Michel, V., Thirion, B., Grisel, O., ... & Duchesnay, É. (2011). Scikit-learn: Machine learning in Python. *The Journal of machine Learning research*, 12, 2825-2830.
- Raco, M. (2014). *The Post-Politics of Sustainability Planning: Privatisation and the Demise of Democratic Government*. In J. Wilson & E. Swyngedouw (Eds.), *The Post-Political and its Discontents: Spaces of Depoliticisation, Spectres of Radical Politics* (pp. 25-47). Edinburgh: Edinburgh University Press.
- Raco, M., Imrie, R., & Lin, W.-I. (2012). Community Governance, Critical Cosmopolitanism and Urban Change: Observations from Taipei, Taiwan. *International Journal of Urban and Regional Research*, 35(2), 274-294.
- Rosati, F., & Faria, L. G. (2019). Addressing the SDGs in sustainability reports: The relationship with institutional factors. *Journal of Cleaner Production*, 215, 1312-1326.
- Sala, S., Crenna, E., Secchi, M., & Sanyé-Mengual, E. (2020). Environmental sustainability of European production and consumption assessed against planetary boundaries. *Journal of Environmental Management*, 269, 110686.
- Scheyvens, R., Banks, G., & Hughes, E. (2016). The private sector and the SDGs: The need to move beyond 'business as usual'. *Sustainable Development*, 24(6), 371-382.
- Vakeel, K. A., & Panigrahi, P. K. (2018). Social Media Usage in E-Government: Mediating Role of Government Participation. *Journal of Global Information Management*, 26(1), 1-19. <https://doi.org/10.4018/JGIM.2018010101>
- Vallance, S., Perkins, H. C., & Dixon, J. (2011). What is Social Sustainability? A Clarification of Concepts. *Geoforum*, 42(3), 342-348.
- VanBoxtel, D., Swenson, R., & Steede, G. (2023). Green Framing in Corporate Poultry Videos: An Analysis of Sustainability Messaging. *Journal of Applied Communications*, 106(4).
- Van Gorp, B., & van der Goot, M. J. (2012). Sustainable food and agriculture: Stakeholder's frames. *Communication, Culture & Critique*, 5(2), 127-148.

- Vrysis, L., Vryzas, N., Kotsakis, R., Saridou, T., Matsiola, M., Veglis, A., ... & Dimoulas, C. (2021). A web interface for analyzing hate speech. *Future Internet*, 13(3), 80.
- WCED, S. W. S. (1987). World Commission on Environment and Development. Our Common Future, 17(1), 1-91.
- Winkler, I. T., & Williams, C. (2017). The Sustainable Development Goals and human rights: A critical early review. *The International Journal of Human Rights*, 21(8), 1023-1028.
- Wilson, J., & Swyngedouw, E. (2014). *The Post-Political and its Discontents: Spaces of Depoliticisation, Spectres of Radical Politics*. Edinburgh: Edinburgh University Press.



# **Sentiment Analysis in the Political Dialogue: Case Study of the Candidates for the Presidency of the SYRIZA-Progressive Alliance party**

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## **Abstract**

Sentiment analysis can offer valuable insights into the overall mood and emotional tone of a political discussion. Building upon a prior study conducted by the iMEDD (Incubator for Media Education and Development), which examined sentiments in political communication during the 2023 elections, our current study focuses on analyzing speeches delivered by the five candidates for the presidency of the party at the Continuous Congress of Syriza – Progressive Alliance on September 2nd, 2023. Through sentiment analysis, our objective is to determine whether the apparent positive tone in candidates' speeches reliably predicts electoral success and whether the topics addressed in each speech influence its overall sentiment. Our findings indicate that positive sentiment in political speeches does not necessarily correlate with electoral victory and that certain topics positively influence overall sentiment.

**Keywords:** sentiment analysis, political communication, elections, Syriza – Progressive Alliance.

## **Introduction**

One approach to conducting political analysis is through sentiment mining. Generally, sentiment mining involves a range of techniques designed to extract and analyze positive and negative feelings, opinions, attitudes, or emotions (Liu 2012). The field of sentiment analysis has been developing for nearly two decades. This area of study focuses on detecting and categorizing the subjective elements of language, particularly the expression of positive or negative feelings (Shanahan, Qu, & Wiebe 2006). Initially, sentiment analysis utilized a range of linguistic tools including comprehensivethesauri, lemmatizers, etc to determine the presence and nature of sentiment in texts. Over time, however, the field has shifted towards more automated techniques.

Sentiment analysis involves a detailed exploration of emotions, opinions, evaluations, and attitudes related to various subjects such as “services, products, individuals, organizations, issues, topics, events and their attributes” (D’Andrea et al. 2015: 27). These elements are inherently subjective and typically align with polarities such as positive/negative, good/bad, and pro/con, although

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options for neutrality or no opinion are also present. Consequently, sentiment analysis seeks to “extract subjectivity and polarity” in language to ascertain the “semantic orientation” or “the polarity and strength of words, phrases, or texts” (Taboada et al. 2011: 268). This type of analysis offers critical insights for diverse sectors, including business, where it impacts product and service perceptions, as well as in political and sociological contexts, addressing public issues and policies (Feldman 2013). In political arenas, extensive research has utilized X (former) Twitter data to assess public sentiment towards political figures, issues, and the predictive utility of these sentiments (e.g., Murthy 2015). Beyond X, where public opinions are expressed, there is another fertile area for research, namely the political rhetoric during elections. Scholars have initiated investigations into the narratives of Hillary Clinton, Donald Trump, and other contenders in the 2016 US presidential race (Degani 2016, Liu & Lei 2018), as well as drawing comparisons with other political leaders (Dilai, Onukevych & Dilay 2018).

Regarding methodologies for sentiment analysis, two predominant techniques exist: machine-learning and lexicon-based approaches, with the possibility of utilizing a hybrid approach that merges these strategies (D’Andrea et al. 2015). The recent, groundbreaking success of the so-called deep-learning methods has revolutionized many domains including sentiment analysis (Young et al. 2018). Sentiment analysis is a fundamental aspect of natural language processing (NLP), focusing on the automated classification or scaling of documents by their overall polarity on a continuum from positive to negative (Küçük & Can 2020; Pang, Lee, and Vaithyanathan 2002). On the other hand, the lexicon-based method employs a sentiment lexicon, which includes words associated with specific sentiments, to evaluate the sentiment within a given text.

The machine-learning and lexicon-based approaches to sentiment analysis each display distinct advantages and challenges. The machine-learning method is lauded for its “ability to adapt and create trained models for specific purposes and contexts,” (D’Andrea et al. 2015: 29) yet it faces limitations in terms of applicability due to the scarcity of readily available labeled data, particularly across diverse domains such as business and politics. Conversely, the lexicon-based approach is favored for its “wide term coverage” (Taboada et al. 2011) and is often preferred when the machine-learning approach proves less feasible across different fields. Existing tools and lexicons, such as those developed by Jockers(1) and Tausczik and Pennebaker (2010), demonstrate effectiveness and utility across various domains.

It is crucial to recognize that sentiment analysis can be conducted at three distinct levels: document-level, sentence-level, and aspect-level (Lv et al. 2021). Document-level analysis is focused on gauging the overall sentiment of an entire document, operating under the assumption that the document expresses a principal opinion about a specific entity or topic (Behdenna 2016). In contrast, sentence-level analysis delves into the sentiment expressed within individual sentences, thereby offering more granular insights compared to document-level analysis. Aspect-

level analysis, on the other hand, is particularly pertinent for entities that have many aspects (attributes), such as consumer products. Consequently, aspect-level analysis is extensively utilized for evaluating consumer products.

The advent of ChatGPT and similar large language models have significantly enhanced the accessibility of machine learning methodologies, particularly for those without any programming knowledge. This development is proving transformative for researchers in the social sciences and opens numerous new avenues for exploration. Originally employed to assess public sentiments towards politics, sentiment analysis has now expanded to include studies focused on political speeches using machine learning tools (Van Atteveldt, Kleinnijenhuis et al. 2008; Burscher et al. 2014; Ceron et al., 2015). These studies have shown promising results in measuring sentiment at the level of articles or speeches (Hopkins & King 2010). The emerging question is how platforms like ChatGPT can further simplify the sentiment analysis process, making it even more user-friendly and widely applicable.

To this end the iMedD (Incubator for Media Education and Development) -a non-profit journalism organization established in 2018 with funding from a grant provided by the Stavros Niarchos Foundation (SNF)- conducted in 2023 a comprehensive study (Troboukis & Kiki 2023) analyzing the campaign speeches of political leaders from the six parties represented in the Greek parliament during the 18th Parliamentary Term, which spanned from July 17th, 2019, to April 22nd, 2023. This study included speeches from the May and June 2023 elections. Its aim was to identify the main themes addressed by political leaders, determine which topics were emphasized most, and explore the qualitative characteristics of their political discourse.

To address these questions, iMedD employed a mixed-method approach that combined human expertise and artificial intelligence. The integration of the advanced ChatGPT interactive model, a standout in AI innovation, enhanced their analytical process. This model's capabilities allowed them to delve deeper into the intricacies of political rhetoric and its impact. The project served as an experimental collaboration among professionals in journalism, political theory, and data science, alongside AI, with twin objectives: to dissect the content of campaign speeches and to test the limits of modern technology.

One particularly interesting finding emerged from the study: Kyriakos Mitsotakis, the leader of the conservative New Democracy party and the victor of both elections, consistently displayed a positive sentiment throughout his speeches. This observation led to the formulation of the following new research questions:

1. What topics are discussed in the candidates' speeches?
2. Does a positive emotional tone in speeches correlate with electoral success? The field of election forecasting through sentiment analysis is rapidly expanding. It leverages natural language

processing and machine learning to predict political election outcomes by examining the sentiments expressed in online discussions and news articles (Alvi et al. 2023). Could the sentiment also predict the outcome of elections?

3. Is averaging paragraph sentiments the most effective method for gauging emotional content in the whole speech? The iMEDD study uses just the average of each paragraph to calculate sentiments in the whole speech.
4. Are there more reliable indicators than emotional tone for predicting electoral outcomes?
5. To what extent do the themes of a speech influence its overall sentiment?

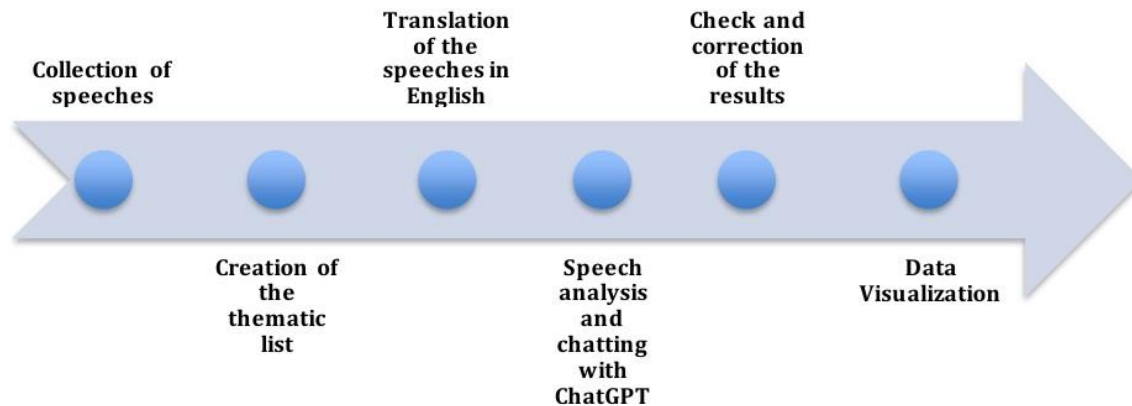
More specifically, in this paper we seek to answer these research questions by analyzing the speeches delivered by the five candidates for the presidency of the party at the Continuous Congress of Syriza – Progressive Alliance on September 2nd, 2023.

### **The political context**

After the general election in June 2023 in Greece, Alexis Tsipras, the leader of the left party Syriza - Progressive Alliance, resigned. His trajectory began in February 2008 when he was elected as the head of the Coalition of the Left, which later became known as Syriza. At that time, the party had a mere 5.04% of the vote. Under the leadership of Alexis Tsipras, the party not only increased its vote share but also became the major partner in a coalition government from 2015 to 2019. Although the party and Tsipras himself were accused of failing to fulfill their electoral promises, particularly regarding the respect of the memoranda signed with the Troika (International Monetary Fund, European Central Bank, and European Commission) to bail out the country from its debt, the government met all its obligations to the Troika and managed to usher in a new chapter for the country. The party lost the 2019 election but still garnered a relatively high 31.53% of the vote, only 4 percentage points down from 2015. Nevertheless, in May 2023, the party barely managed to achieve over 20% (20.07%), and in the June election, it failed to recover, securing only 17.83%.

The numbers were relentless and solely sufficient to compel Alexis Tsipras to step down. He announced his resignation four days after the elections, on June 29, 2023. He stated that the party needed "profound renewal and refoundation" (Stamouli, 2023). This opened the race for succession, which concluded in September of the same year when party members were called to select a new leader through direct elections. The climax of the "pre-election campaign" for the five candidates was at the SYRIZA - Progressive Alliance's Permanent Conference held on Saturday, September 2, 2023, featuring only the five candidates as speakers.

For research purposes, we provide some information about each candidate. Ms. Effie Achtsioglou, until the eve of the election, was the leading candidate. A doctor of law and a former minister in SYRIZA-PA governments, she was unblemished at the party level, young, dynamic, leftist, but also a technocrat. Euclid Tsakalotos, former Minister of Finance, and professor of economics was the person who concluded the memoranda and began refilling the country's coffers. He represented the party's most left-wing faction. Nikos Pappas, the right-hand man of the former prime minister and president of SYRIZA-PA, Alexis Tsipras, also an economist, attracted the opposition's criticism due to the controversial law regulating private television stations. Stefanos Tzoumakas, coming from PASOK, the once dominant socialist party, had served as minister in various capacities in its governments. Stefanos Kasselakis, a businessman who made his fortune in the US, was the "outsider" of the election. Without previous ties to the party or the left, he had been selected by Mr. Tsipras as the representative of the Diaspora on the party's state list ballot. Despite Effie Achtsioglou being the favored candidate, Stefanos Kasselakis prevailed in both rounds. The order of the candidates was: First Round - Kasselakis 44.91%, Achtsioglou 36.18%, Tsakalotos 8.93%, Pappas 8.68%, Tzoumakas 1.3%. Second Round: Kasselakis 55.98%, Achtsioglou 44.02%.



**Figure 1:** Our methodology

## Methodology

To address the research questions, as already mentioned, we adopted and expanded upon the methodology used in the iMEDD study, supplemented by findings from related research (Troboukis & Kiki 2023). Our approach, as illustrated in Figure 1, comprises the following steps:

### Step 1: Collection of speeches

Our analysis focused on the speeches given by the five candidates at the Continuous Congress of Syriza – Progressive Alliance on September 2nd, 2023. We acquired the complete transcripts of

these speeches through the Press Relations department of the party. This primary source material ensured the accuracy and comprehensiveness of our data, allowing for a detailed examination of the rhetorical and thematic elements present in the political discourse of the candidates.

Step 2: Creation of the thematic list

For Step 2 of our analysis process, we developed a list of thematic areas commonly found in political speeches. While we took into account the thematic categories provided in the iMEDD study (Troboukis & Kiki 2023), our list has been expanded to reflect specific aspects relevant to the electoral context. For example, terms like "left" have been included to capture ideological leanings pertinent to the speeches under review. The enriched list of thematic elements includes:

• Accountability	• Agricultural policy	• Civil protection
• Corruption	• Culture	• Debt
• Democracy	• Economy	• Education
• Elections	• Employment	• Energy
• Entrepreneurship	• Environment	• Europe
• External affairs	• Health	• Housing
• Human rights	• Infrastructure	• Justice
• Left	• Media	• Migration
• National security	• Pandemic	• Pensioners

• Privatization	• Public sector	• Social state
• Tourism	• Transparency	• Other

The element other is used to categorize paragraphs that do not fit any of these thematic areas.

### Step 3. Translation of the speeches in English

During this phase, the formatted text was translated into English using DeepL Translator (<https://www.deepl.com/>). DeepL employs machine learning technology, specifically Convolutional Neural Networks (CNNs), to provide precise translations. This technology is adept at capturing the nuances and specific terminology of the original speeches, which is essential for conducting a detailed and accurate analysis. Translating the content into English ensures that the analysis can leverage the capabilities of ChatGPT, which has a more extensive vocabulary and better understanding in English. This step is vital for preserving the integrity of the political discourse analysis, enabling more nuanced insights and interpretations.

### Step 4. Speech analysis and chatting with ChatGPT

The analysis of political leaders' campaign speeches will primarily occur at the document level; however, for greater precision, it will initially be conducted at the paragraph level. After evaluating individual paragraphs, an averaging process will aggregate these findings to provide an overall assessment. The analysis will focus on the following aspects:

- **Main Topic Identification:** Each paragraph is analyzed to determine its main topic, based on the predefined list of topics above. This list helps categorize and understand the focal points of each speech segment.
- **Sentiment Analysis:** The dominant sentiment expressed in each paragraph is identified and categorized as positive, neutral, or negative. By analyzing sentiment at the paragraph level, we can gain a nuanced understanding of how the speaker's tone varies throughout the speech and how it aligns with different thematic elements.

Using the ChatGPT API (gpt-3.5), we engage in a programmatic chat with the interactive AI model to analyze the campaign speeches. Specifically, we prompt ChatGPT to provide us with several linguistic features for each paragraph of the campaign speeches, including:

Topic/Theme Identification: The AI is prompted to determine the most likely topic or theme discussed in each paragraph of the political speech. This approach helps categorize content systematically, ensuring that thematic analysis aligns with predefined categories.

Sentiment Analysis: ChatGPT evaluates the sentiment of the speech paragraph, providing a sentiment value on a scale from -1 to 1. A value equal to +1 represents a paragraph that evokes the highest positive sentiment, whereas a value equal to -1 represents a paragraph that, according to the language model, evokes the most negative sentiment. Moreover, we also consider a “rounded” version of the sentiment coefficient as Table 1 presents. The corresponding intervals have been obtained by dividing the interval [-1, 1] into three sub- interval of equal length. The classification is divided into three categories:

- a) Negative: If the score ranges from -1 to -0.34, indicating a predominantly negative sentiment.
- b) Neutral: If the score falls between -0.33 and 0.33, suggesting a balanced or indifferent emotional expression.
- c) Positive: If the score lies between 0.34 and 1, reflecting a primarily positive sentiment.

**Table 1:** Classification of the dominant sentiment according to the value of the sentiment coefficient X

<b>X value</b>	$x \in [-1, -0.34]$	$x \in [-0.33, 0.33]$	$x \in [0.34, 1]$
<b>Result</b>	Negative	Neutral	Positive

Such quantification allows for precise measurement of emotional tone across different parts of the speech, contributing to a deeper understanding of how sentiments are distributed throughout the speech and their potential impact on the audience.

**Step 5: Check and correction of the results**

For each speech being analyzed, we construct a dataset consisting of rows corresponding to the number of paragraphs in the speech and columns representing the variables being studied. Following this, in step 5 we review and refine the results obtained from ChatGPT.

Each paragraph under analysis is reviewed by the researchers who assess the ChatGPT outputs based on the main topic of discussion. Should the ChatGPT results prove inaccurate, the working group steps in to make the necessary adjustments. Paragraphs that touch upon multiple issues are



categorized based on the most dominant topic discussed. This method ensures clarity and precision in understanding the primary focus of each speech segment.

On the contrary, if ChatGPT assigns a sentiment score that categorizes a paragraph differently from human judgment, the misclassified value is removed from the dataset and excluded from further analysis or visualizations. The researchers have followed the same method as iMEDD (Troboukis & Kiki, 2023) who chose deletion as the method to correct such discrepancies, as it is deemed the most effective strategy to maintain the integrity of the average sentiment indicators. This approach prevents ad hoc human adjustments that could skew the overall classification of the election speech as negative, neutral, or positive. This procedure ensures that the analysis remains consistent and unbiased, providing a clear and accurate representation of the sentiment conveyed in the speeches.

In our study the percentage of the successful categorization of the sentiments on behalf of chat GPT was 83%, according to the manual consequent categorization. So the researchers excluded 17% of chat GPT's automatic sentiment results.

#### Step 6: Data visualization

During the last step several tools are used in order to visualize the obtained results. More specifically, the free online generator wordclouds (worldclouds.com) is used in order to visualize the main topic of the paragraphs of the speeches. Also, we utilize MS Excel™ to generate the diagrams that demonstrate the sentiment coefficient as a function of time, and the so-called Radar charts that show the numbers of positive, neutral, and negative paragraphs of each speech.

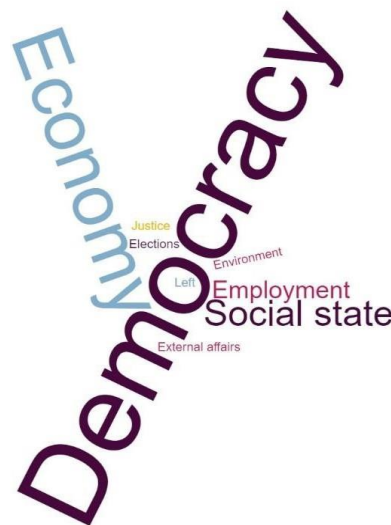
### **Results regarding the primary topics of the speeches**

In this section, we illustrate the primary topics discussed in the candidates' speeches. More specifically, as depicted in Figure 2, Democracy and Economy emerged as the two most frequently discussed topics, showing a significant difference from the other topics. One interesting point from the analysis is that only 20 topics out of the 33 of the lists.



**Figure 2:** Topics discussed in candidates’

In Ms. Achtsioglou’s speech, as figure 3 depicts, only 9 topics are discussed, with Democracy and Economy being the two most frequently addressed. Additionally, she focuses solely on issues related to the social state, and justice.



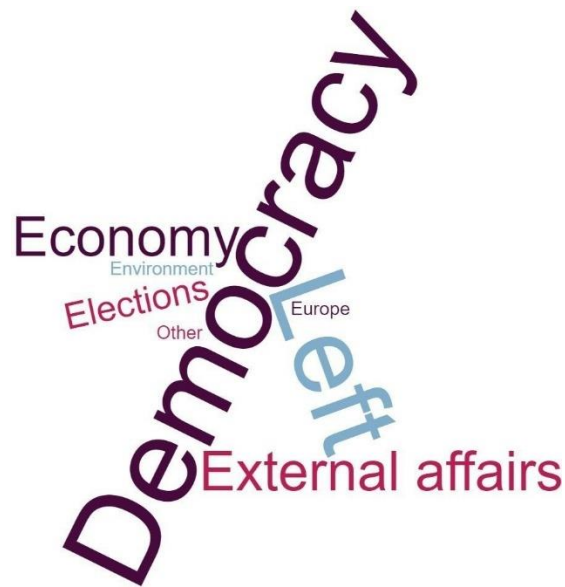
**Figure 3:** Topics discussed in Ms. Achtsioglou’s speech.

In Mr Kasselakis’ speech, as figure 3 depicts, also only 9 topics are discussed, with Democracy and Economy being the two most frequently addressed. Furthermore, the frequency of these

topics is comparable to that of the other 7 topics. Additionally, he focuses solely on issues regarding media, culture, debt, and corruption.



**Figure 4:** Topics discussed in Mr. Kasselakis's speech.



**Figure 5:** Topics discussed in Mr. Pappas's speech.

In Mr. Pappas’s speech, as figure 5 depicts, only 8 topics are discussed, with Democracy, Economy and Left being the two most frequently addressed. Additionally, an interesting observation is that there is a paragraph in his speech that cannot be classified within the list of topics.



**Figure 6:** Topics discussed in Mr. Tzoumakas’s speech.

In Mr. Tzoumakas’s speech, as figure 6 depicts, 11 different topics are discussed with Economy and Democracy being the three most frequently addressed. He focuses solely on issues regarding infrastructure, civil protection, and energy.



**Figure 7:** Topics discussed in Mr. Tsakalotos’s speech.

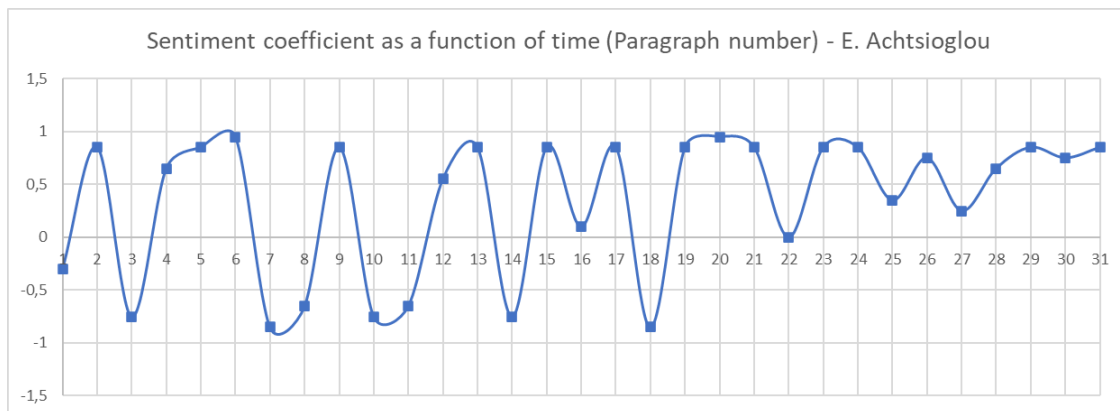
In Mr. Tsakalotos’s speech, as figure 7 depicts, only 7 topics are discussed, with Democracy and Economy and Left being the two most frequently addressed. Additionally, he focuses solely on issues related to human rights.

## Results regarding the sentiment

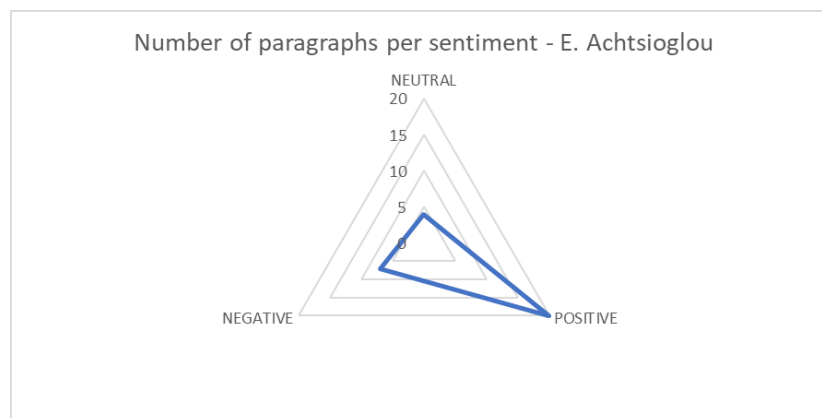
In this section, we present the findings concerning the sentiment of the five speeches. More specifically, we illustrate the sentiment coefficient for each speech as a function of time, or more accurately, as a function of the paragraph index. Also, for each speech, we provide the so-called “Radar chart” that is computed using the counts for positive, neutral, and negative paragraphs. Furthermore, we include a Radar chart that shows the results for all five speeches in the same axes, to facilitate the comparison of the speeches with respect to the evoked sentiment.

### *The speech of Ms. Achtsioglou*

The speech of Ms. Achtsioglou consists of 31 paragraphs. The sentiment coefficient as a function of the paragraph index is demonstrated in Figure 8. It is evident from the figure that the speech evokes mainly positive sentiment, with a rather positive conclusion. Out of the 31 paragraphs, 20 paragraphs were classified as positive, 7 paragraphs were classified as negative, and 4 paragraphs were classified as neutral. The respective Radar chart is given in Figure 9.

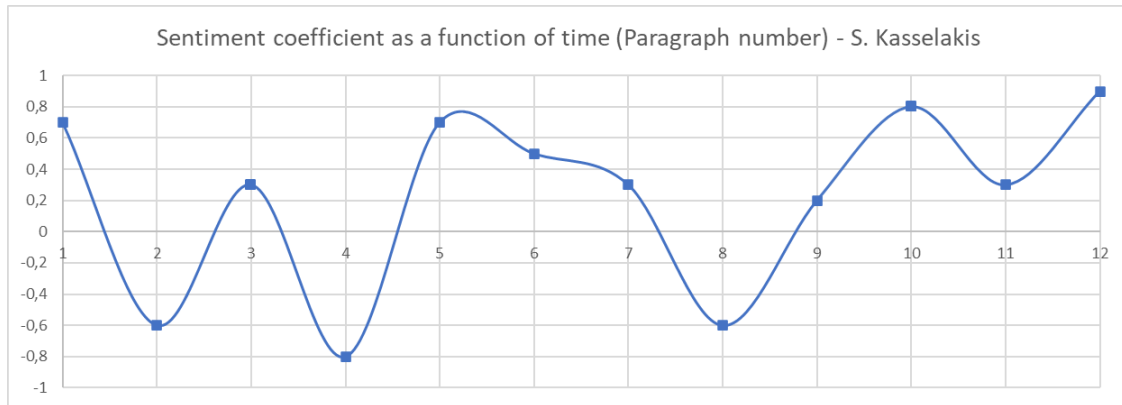


**Figure 8:** The sentiment coefficient for the speech of Ms. Achtsioglou as a function of the paragraph index

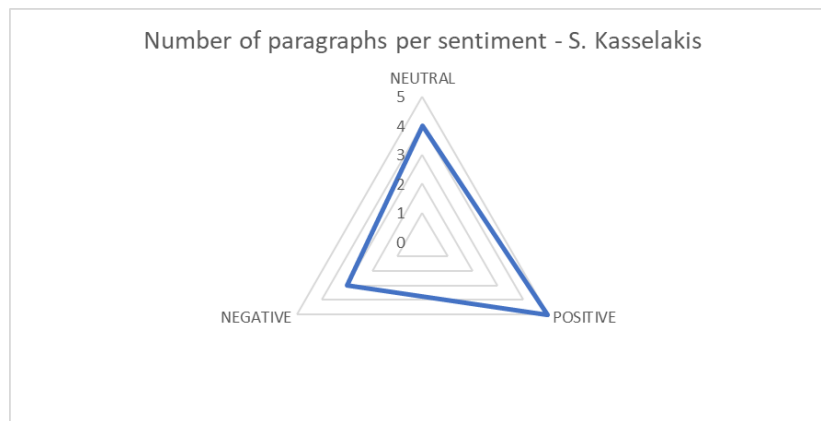


**Figure 9:** The Radar chart for the speech of Ms. Achtsioglou

*The speech of Mr. Kasselakis*



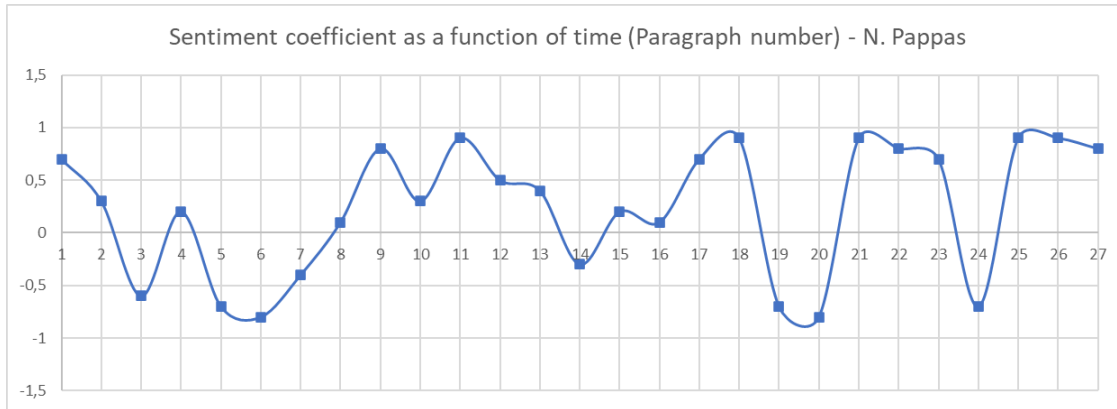
**Figure 11:** The sentiment coefficient for the speech of Mr. Kasselakis as a function of the paragraph index



**Figure 12:** The Radar chart for the speech of Mr Kasselakis

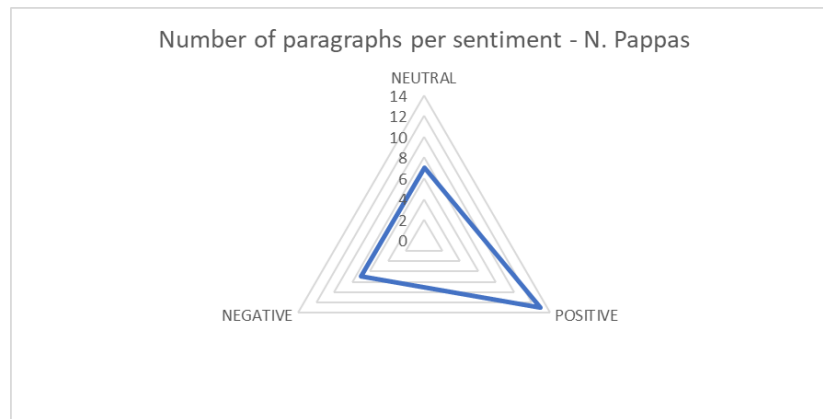
The speech of Mr. Kasselakis consists of 12 paragraphs. The sentiment coefficient as a function of the paragraph index is demonstrated in Figure 10. It can be seen that the speech appears rather balanced, in the sense that the number of positive paragraphs is only slightly greater than the number of negative paragraphs. Also, the speech contains almost the same number of paragraphs that were classified as neutral. As it was also the case in the previous speech, the speaker decided to end their speech in a positive sentiment. The Radar chart for the speech of Mr. Kasselakis is given in Figure 11. Finally, a distinctive feature of the speech of Mr. Kasselakis is the fact that it contains the smallest number of paragraphs.

*The speech of Mr. Pappas*



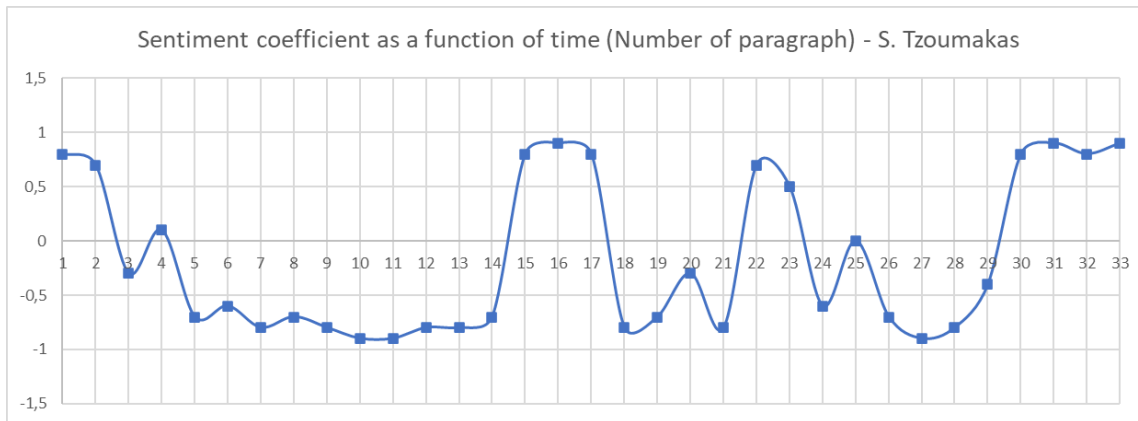
**Figure 13:** The sentiment coefficient for the speech of Mr. Pappas as a function of the paragraph index

The speech of Mr. Pappas consists of 27 paragraphs, 13 of which were classified as positive. The sentiment coefficient as a function of the paragraph index is demonstrated in Figure 12. The speech has an overall positive sentiment, especially in the second half and close to its end. This can be seen clearly in the Radar chart which is given in Figure 13.

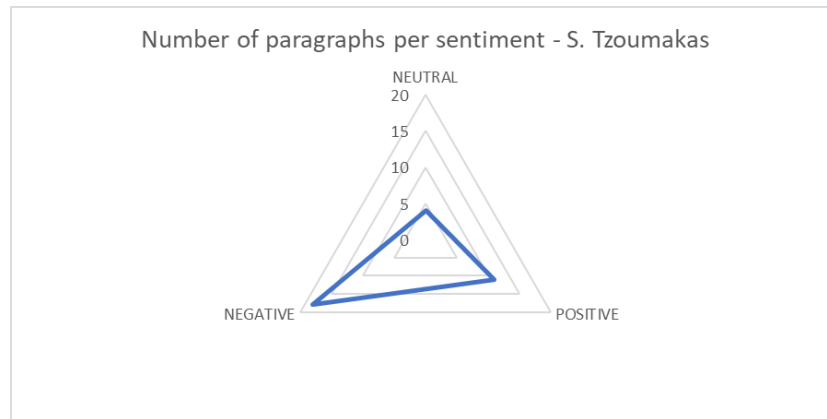


**Figure 14:** The Radar chart for the speech of Mr Pappas

*The speech of Mr. Tzoumakas*



**Figure 15:** The sentiment coefficient for the speech of Mr. Tzoumakas as a function of the paragraph index

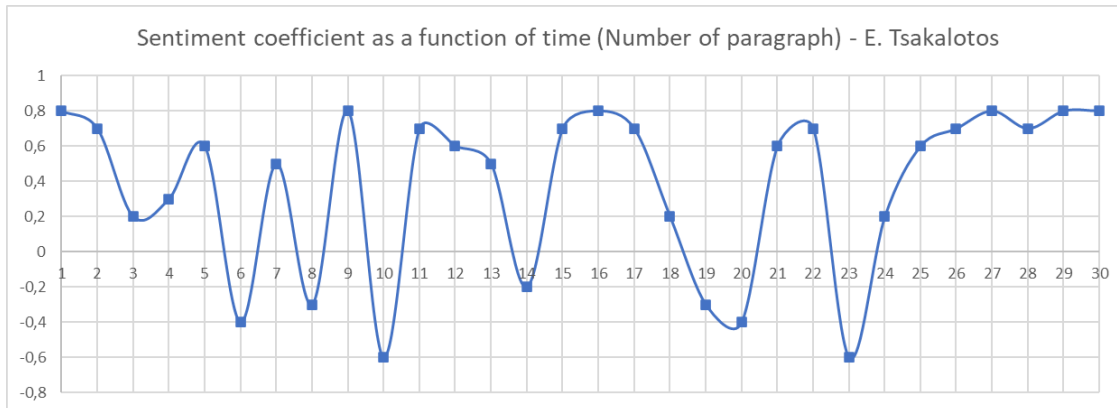


**Figure 16:** The Radar chart for the speech of Mr. Tzoumakas

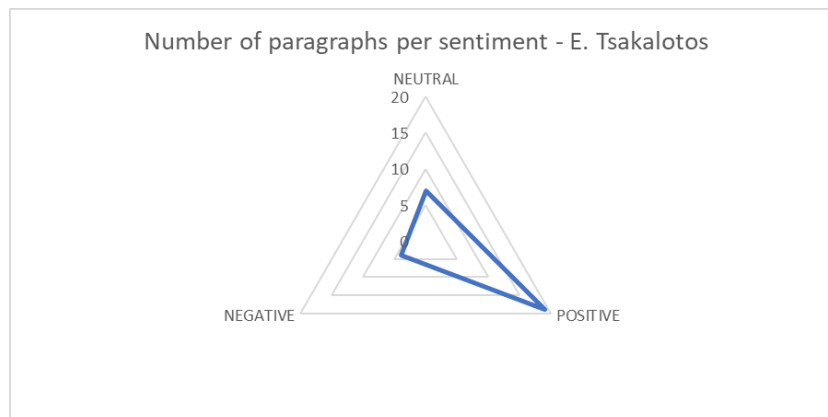
The speech of Mr. Tzoumakas consists of 33 paragraphs, 18 of which were classified as negative. The sentiment coefficient as a function of the paragraph index is demonstrated in Figure 14. Although the speech evokes mainly negative sentiment, the speaker does choose to end in a positive way. The Radar chart for the speech of Mr. Tzoumakas is given in Figure 15, where it is evident that the speaker has focused on issues that had negative sentiment.



*The speech of Mr. Tsakalotos*



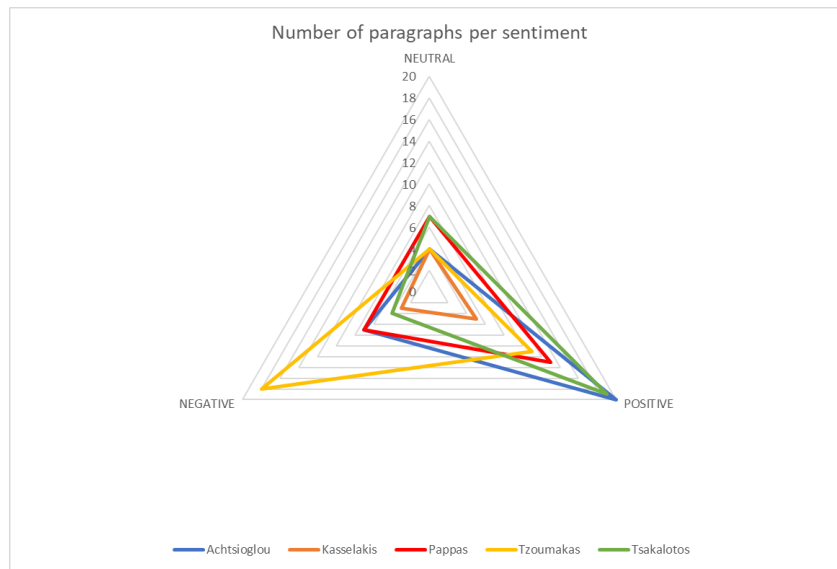
**Figure 17:** The sentiment coefficient for the speech of Mr. Tsakalotos as a function of the paragraph index



**Figure 18:** The Radar chart for the speech of Mr. Tsakalotos

The speech of Mr. Tsakalotos consists of 30 paragraphs, 19 of which were classified as positive. The sentiment coefficient as a function of the paragraph index is demonstrated in Figure 16. It is evident from the figure that the speech focused on positive issues. Interestingly, the smallest value of the sentiment coefficient for the speech of Mr. Tsakalotos is approximately equal to  $-0.6$ , which is the greater minimum value for all the five speeches. The Radar chart for the speech of Mr. Tsakalotos is given in Figure 17, where it can easily be seen that the speech focused on positive issues.

*A comparison of the sentiment in the five speeches*



**Figure 19:** Radar chart for all speeches

To facilitate a comparison of the five speeches considered in this study, Figure 18 gives the Radar chart for all speeches on a shared axis. Observing this figure, it becomes apparent that all speeches except Mr. Tzoumakas's exhibit a predominantly positive sentiment. Conversely, both the speeches of Ms. Achtsioglou and Mr. Tsakalotos display a strong positive sentiment. The speeches of Mr. Pappas and Mr. Kasselakis are more balanced in terms of sentiment. Also, these speeches feature a lower number of paragraphs.

**Results regarding the sentiment in conjunction with the topics**

In this section, we investigate if there are certain topics in speeches that positively influence overall sentiment. In Table 2 the green color indicates a positive sentiment, the orange color a neutral sentiment, while red color indicates a negative sentiment.

As it can be seen from the analysis in Table 2 there are some topics that appear to have in all the speeches when they referred positive influence e.g. left, while other topics, e.g. economy can have positive, neutral or even negative influence. An interesting observation also is that the topics covered in the speeches of Ms. Achtsioglou and Mr. Tsakalotos are quite similar.

**Table 2:** Topics and Sentiment Analysis

Candidate	Achtsioglou	Kasselakis	Pappas	Tzoumakas	Tsakalotos	Overall

Economy	Green	Green	Yellow	Red	Green	Yellow
Democracy	Yellow	Green	Yellow	Green	Yellow	Yellow
Social state	Green	White	White	White	White	Green
Environment	Yellow	White	Yellow	Red	Green	Yellow
Employment	Yellow	Red	White	Green	Red	Yellow
External affairs	Yellow	Red	Yellow	Green	Red	Yellow
Elections	Yellow	Red	White	Green	Red	Yellow
Left	Yellow	Red	Green	Green	Red	Yellow
Justice	Yellow	Red	White	Green	Red	Yellow
Corruption	Yellow	Red	White	Green	Red	Yellow
Education	Yellow	Red	White	Green	Red	Yellow
Debt	Yellow	Red	White	Green	Red	Yellow
Media	Yellow	Red	White	Green	Red	Yellow
Culture	Yellow	Red	White	Green	Red	Yellow
Other	Yellow	Red	Green	Green	Red	Yellow
Europe	Yellow	Red	Yellow	Green	Red	Yellow
Infrastructure	Yellow	Red	White	Green	Red	Yellow
Civil Protection	Yellow	Red	White	Green	Red	Yellow
Energy	Yellow	Red	White	Green	Red	Yellow
Human Rights	Yellow	Red	White	Green	Red	Yellow

Legend for Table 2		
Color	Sentiment	Characteristic Quote
Green	Positive	<p><b>Achtsioglou:</b> We are proud of our journey.</p> <p><b>Kasselakis:</b> The day after my election to the party we love and for which we are working, Syriza of the Modern Left will begin.</p> <p><b>Pappas:</b> During our administration we have had a strong proactive foreign policy that has strengthened the country and improved the conditions of calm in the region.</p> <p><b>Tzoumakas:</b> The new generation, both for the prosperity of the country as a whole and for its individual progress and development, needs to work in the knowledge economy.</p> <p><b>Tsakalotos:</b> And our identity has values, and ideas, and analyses.</p>
Yellow	Neutral	<p><b>Achtsioglou:</b> A state that will finally make the necessary modernisation changes.</p> <p><b>Kasselakis:</b> I have not known Syriza since I was born.</p> <p><b>Pappas:</b> Today, progressive reform of the EU is more necessary than ever.</p> <p><b>Tzoumakas:</b> The EU must become a state entity like the USA.</p> <p><b>Tsakalotos:</b> Because we can't tell everybody everything.</p>
Red	Negative	<p><b>Achtsioglou:</b> We are here today under the weight of a major electoral defeat.</p> <p><b>Kasselakis:</b> We have before us a rotten state and a right-wing parastate.</p> <p><b>Pappas:</b> .The transformation step was cowardly and half-hearted</p> <p><b>Tzoumakas:</b> The responsibility for forest firefighting belongs to the competent body of the State, the Fire Brigade, which today, under the responsibility of the Government, has been depleted with 3,600 vacancies.</p> <p><b>Tsakalotos:</b> They do not invest in new technologies, new products, new markets. They invest on the low wage.</p>

## Discussion and Conclusions

In this paper, we examine the speeches given by the five candidates vying for the party's presidency during the Continuous Congress of Syriza – Progressive Alliance on September 2nd, 2023 to determine the apparent positive tone in candidates' speeches reliably predicts electoral success and whether the topics addressed in each speech influence its overall sentiment. From our analysis we have identified the primary topics discussed in the candidates' speeches, with the topics Democracy and Economy addressed in all the candidates' speeches.

It is important to note that when we conducted our research in late 2023, ChatGPT had been operational for only a year, and its accuracy in the Greek language was not as high as it is now. Consequently, we had to implement step 3, which may have resulted in the loss of some language nuances, despite the researchers manually validating the translations. With the advent of ChatGPT-4, this step is no longer necessary.

From the elections' outcome it is apparent that the presence of positivity in political speeches doesn't always align with winning elections. The reason for this might be that although important, the corpus examined was not big enough so as to establish a rationale of connection/correlation between either positive or negative sentiments and winning or losing an election.. In the future, an examination of multiple speeches would allow for a statistical elaboration of the relationship between the subjects mentioned and the sentiments. Furthermore, it would be interesting to examine whether the negative sentiment is a deterrent factor for victory.

In addition, given the election outcome, it seems that the averaging of the paragraph sentiments is not the most effective method for gauging emotional content in the whole speech, since it does not capture the moments in time and in particular the outbursts that are likely to mobilize the audience emotionally and therefore politically. The sentiment coefficient for each speech as a function of time is likely to give better results but more research is needed.

Finally, the themes of a speech may likely influence its overall sentiment, however since in this case the framework is particularly important, and we cannot look forward to generalizations.

## References

- Aaldering, L., & Vliegthart, R. (2016). 'Political leaders and the media. Can we measure political leadership images in newspapers using computer-assisted content analysis?' *Quality and Quantity*, 50(5): 1871–1905.
- Alvi, Q., Ali, S.F., Ahmed, S.B., Khan, N.A., Javed, M., Nobanee, H. (2023) 'On the frontiers of Twitter data and sentiment analysis in election prediction: a review'. *PeerJ Computer Science*. 21(9). doi: 10.7717/peerj-cs.1517.

- Behdenna S., Barigou F. and Belalem G. (2016). Sentiment Analysis at Document Level. In *Proceedings of Smart Trends in Information Technology and Computer Communications. EAI Endorsed Transactions on Context-aware Systems and Applications*. SmartCom vol 628: 159-168.
- Burscher, B., Odijk, D., Vliegthart, R., De Rijke, M., & De Vreese, C. H. (2014). ‘Teaching the computer to code frames in news: Comparing two supervised machine learning approaches to frame analysis.’ *Communication Methods and Measures*, 8(3): 190–206. doi:10.1080/19312458.2014.937527
- Ceron, A., Curini, L., & Iacus, S. M. (2016). ‘First-and second-level agenda setting in the twittersphere: An application to the Italian political debate.’ *Journal of Information Technology and Politics*, 13(2): 159–174.
- D’Andrea, A., Ferri, F., Grifoni, P., Guzzo, T. (2015). ‘Approaches, tools and applications for sentiment analysis implementation.’ *International Journal of Computer Applications*, 125(3): 26-33.
- Degani, M. (2016). ‘Endangered intellect: a case study of Clinton vs Trump campaign discourse.’ *Iperstoria*, Issue 8.
- Dilai, M., Onukevych, Y., Dilay, I. (2018). ‘Sentiment analysis of the US and Ukrainian presidential speeches.’ *Computational linguistics and intelligent systems*, Lviv Polytechnic National University, p. 60–70
- Hopkins, D. J., & King, G. (2010). ‘A method of automated nonparametric content analysis for social science.’ *American Journal of Political Science*, 54(1): 229–247. doi:10.1111/ajps.2010.54.issue-1
- Küçük, D., and Can, F. (2020). ‘Stance Detection: A Survey.’ *ACM Computing Surveys* 53 (1): 1–37.
- Liu, B. (2012). *Sentiment Analysis and Opinion Mining*. Synthesis Lectures on HumanLanguage Technologies. Morgan & Claypool Publishers.
- Liu, D., Lei, L. (2018). ‘The appeal to political sentiment: An analysis of Donald Trump’s and Hillary Clinton’s speech themes and discourse strategies in the 2016 US presidential election’. *Discourse, Context & Media*, 25: 143-152.
- Lv, Y., Wei, F., Cao, L., Peng, S., Niu, J., Yu, S., Wang, S. (2021). ‘Aspect-level sentiment analysis using context and aspect memory network.’ *Neurocomputing*, 428: 195-205. <https://doi.org/10.1016/j.neucom.2020.11.049>.
- Murthy, D. (2015). ‘Twitter and elections: are tweets, predictive, reactive, or a form of buzz?’ *Information, Communication & Society*, 18 (7): 816–831. <http://dx.doi.org/10.1080/1369118X.2015.1006659>
- Pang, B., Lee, L., and Vaithyanathan, S. (2002). ‘Thumbs Up? Sentiment Classification Using Machine Learning Techniques.’ In *Proceedings of the 2002 Conference on Empirical Methods in Natural Language Processing*, p. 79–86. Association for Computational Linguistics. <https://arxiv.org/abs/cs/0205070>
- Feldman, R., (2013). ‘Techniques and applications for sentiment analysis.’ *Communications of the ACM*, 56 (4): 82-89.
- Shanahan, J., Qu, Y., Wiebe, J., eds. (2006). *Computing attitude and affect in text: Theory and applications*, Dordrecht, the Netherlands: Springer.
- Stamouli, N. (2023). ‘Greek opposition leader Tsipras resigns as Syriza chief after election defeat’. *Politico*, June 29, <https://www.politico.eu/article/greek-opposition-leader-tsipras-resigns-syriza-chief-after-election-defeat/>

- Taboada, M., Brooke, J., Tofiloski, M., Voll, K., Sted, M. (2011). ‘Lexicon-based methods for sentiment analysis.’ *Computational Linguistics*, 37: 267-307
- Tausczik, Y. R., & Pennebaker, J. W. (2010). ‘The Psychological Meaning of Words: LIWC and Computerized Text Analysis Methods.’ *Journal of Language and Social Psychology*, 29(1): 24-54. <https://doi.org/10.1177/0261927X09351676>
- Troboukis, Th., Kiki, K. (2023). ‘Political discourse during the two-month election period.’ *iMEdD lab*. <https://lab.imedd.org/en/o-politikos-logos-kata-ti-dimini-proeklogiki-periodo/>
- Young T., Hazarika D., Poria S. and Cambria E. (2018), "Recent Trends in Deep Learning Based Natural Language Processing [Review Article]," in *IEEE Computational Intelligence Magazine*, vol. 13, no. 3, pp. 55-75, Aug. 2018
- Van Atteveldt, W., Kleinnijenhuis, J., Ruigrok, N., & Schlobach, S. (2008). ‘Good news or bad news? Conducting sentiment analysis on dutch text to distinguish between positive and negative relations.’ *Journal of Information Technology and Politics*, 5(1): 73–94. doi:10.1080/19331680802154145

# Communication Crisis Management - Communication Actions and Image Management Strategies - Case Study

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## Abstract

The present paper focuses on discussing the nature of crises and their impact on organizations, particularly focusing on communication strategies during such events. More specifically, the present paper examines the Volkswagen emissions scandal, known as Dieselpgate scandal, which began in September 2015 when the company was caught violating the Clean Air Act. This case exemplifies a preventable crisis where technology failures led to harmful products. Overall, the present paper sets the foundation for exploring crisis management and communication strategies, particularly in the context of the Volkswagen scandal. The research, in conclusion presents how Volkswagen tried to restore its reputation through public announcements as a result of the adoption of corrective measures.

**Keywords:** Communication, crisis, management strategies, VW scandal.

## Introduction

The literature on corporate ethics, governance, and crisis communication has extensively debated the so-called Dieselpgate or VW emissions scandal. While there is extensive literature on corporate misbehavior and its financial punishment, only a handful of studies have particularly investigated corporate communication behavior in the case of such a severe crisis. This research contributes to the growing list of studies in crisis communication, which will look at how VW addressed its crisis through official statements, press releases, and communications with executives. This paper has identified several research gaps in the literature. Although most of these studies dwell on the financial, legal, and environmental implications of these corporate scandals, a detailed examination of how companies employ communication strategies in restoring brand reputation is beyond the scope of their various analyses. There is also a deficiency in more empirical tests of

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the responses towards corporate communications during crisis situations. The purpose of this paper, therefore, is to try to fill such gaps by testing the communications strategies of VW against the Coombs' Situational Crisis Communication Theory, or SCCT, in an effort to determine how the responses would impact public perception and corporate reputation. This paper tries to shed some light on what communication strategies VW employed after the beginning of the scandal, and further evaluates their effectiveness in mitigating the crisis. By systematically analyzing the responses of VW, this study will contribute to the extension of our understanding of the relationship between corporate communication and crisis management. (Coombs' Situational Crisis Communication Theory (SCCT) )(Coombs, 2007; Coombs, 2015; Coombs, 2021).

### **Context of Study-Literature review**

The VW scandal has been also widely known as either Dieseldgate or Emissiongate. Chronologically, the event falls into September 2015 when, after the inspection from the US Environmental Protection Agency or the EPA, a conclusion was made on the violation of the Clean Air Act by the car manufacturer VW.

The same article by Yannis Skoufis reported that the cars selected to be violators were certified to either the US EPA Tier 2/Bin 5 emissions standard, or the ULEV California LEV-II standard. Both of those standards mandate that nitrogen oxide emissions may not exceed 0.043 grams per kilometer (0.07 g/mi) for engines with a full useful life, defined as 190,000 kilometers or 120,000 miles and 240,000 kilometers or 150,000 miles, correspondingly, depending on the vehicle and also specific optional certification options (Boston, W., Varnholt, H., & Sloat, S. 2015).

This is one of the most stringent nitrogen oxide standards in the world. For example, the current standards in Europe- Euro 5 (2008 "EU5 compliant", 2009 –2014 models) and Euro 6 (2015 models)-limit nitrogen oxide emissions to only 0.18 g /km (0.29 g /mi) and 0.08 g /km (0.13 g /mi), respectively.

It was revealed that the company had deliberately designed turbocharged direct injection diesel engines to turn on emission controls only when the car was being used in a laboratory test but not otherwise. As a result of this, cars did not pass the US standards when undergoing controlled testing and sometimes emitted as high as forty times more on the highway .

The company had fitted this software in almost 11 million cars worldwide, all 500 000 of which were sold in the US from 2009 to 2015.

In 2014, ICCT presented a study that reported data from three different sources on 15 vehicles regarding the difference in emissions between European and American cars. This is because the independent body, pressed by the CEO, had decided to conduct this very common test of emissions on three cars through road testing in the US because regulations there are more strict compared to



Europe. What they want to prove is that the cars will be able to pass this test; however, two of the three cars, the VW Passat and the VW Jetta, presented discrepancies, while there were no differences in the BMW X5. More specifically, five scientists from West Virginia who worked at the university of the same name detected, during live tests, additional emissions in a percentage of 66% of diesel cars. These cars, as mentioned above, were namely a VW Passat, a VW Jetta and a BMW X5 (Topham et al., 2015).

All the three above-mentioned vehicles had been previously certified to fall below emissions limits at standard laboratory tests conducted at a California Air Resources Board facility. For the VW Jetta and the BMW, the test was a real 2400km drive. For the final test, however, they wanted even more mileage for the Passat, driving the route from Los Angeles to Seattle and back again, more than 3200 km. While the BMW actually met or stayed below the standard, under real-world driving conditions, the other two vehicles were found to surpass US limits.

The general conclusion was then that the cars' emissions are far above not only the strict limits of the USA but also the less strict ones of Europe. According to the testers, there were so many tests conducted that there is no probability of mistake in them that could justify the result. US real test results confirm Europe's from ICCT:.

Scientists at the University of Virginia could not find the tampering device, but this was exposed after a year-long study by a group of researchers who found that the device was actually a piece of the cars' programming code which was activated every time it underwent testing. These findings sparked the interest of regulators in various nations who started investigating VW and led to the company's share price falling by a third (Ruddick, 2015).

Headed by then CEO Martin Winterkorn, VW's CEO resigned while heads of brand development, the head of research and development at both VW Group's Porsche and Audi were all put on suspension. In April 2016, the company announced it would spend 16.2 billion euros to fix emissions issues and replace affected vehicles through a recall campaign (Mansouri, 2016).

In January 2017, he pleaded guilty to the charges and signed a statement of facts which said that an investigation ordered by the company itself to US attorneys found that its engineers had developed the specific emissions concealment devices for its vehicles to pass the US tests and deliberately concealed their use.

During the same period, that is in April 2017, a US federal judge ruled and ordered VW to pay a fine of 2.8 billion dollars while the CEO of the company charged with fraud and conspiracy on May 3, 2018. Today, and to be clear from as of June 1, 2020, this scandal cost the company \$33.3 billion in fines, penalties, financial settlements, and buyout costs (Chue, 2015). Most of the affected cars are in the US and Europe where consumer groups as well as governments are seeking

to secure compensation for all regardless of whether they are considered illegal in the US and legal in Europe as their owners were defrauded (Topham et al., 2015).

Obviously, this scandal made people more aware of the high emissions of all diesel cars and sparked several new investigations and other related emissions scandals. VW insisted for one year that the differences had to do with technical glitches, until, after it was revealed in testing how the company had manipulated the emissions, it came out and admitted its mistake.

German and US company executives officially acknowledged that fact in a teleconference to NRA and California officials on 9/3/2015 during which written material was presented proving that the software used in the engines bypassed the emissions tests of the USA. They agreed to introduce them as Europe threatened it with a market ban for 2016. The company also announced that more than \$7 billion will be devoted to the software fix (Bachmann et al., 2023).

Previous research in crisis communication has largely focused on theoretical models such as Benoit's Image Repair Theory (Benoit, 1997; Benoit, 2021) which categorizes corporate responses into strategies such as denial, evasion of responsibility, and corrective action. Coombs' Situational Crisis Communication Theory (SCCT) (Coombs, 2007), (Zhang et al., 2016) which focuses on matching crisis types to appropriate response strategies, has also been a valuable framework for analyzing corporate responses to crises.

However, few studies have applied these frameworks specifically to the automotive industry or explored how companies navigate a complex crisis like the VW emissions scandal. This literature review will assess the theoretical foundations of crisis communication and identify how the Volkswagen case fills a gap by focusing on a large-scale environmental scandal with significant international repercussions.

## **Methodology**

This study employs a qualitative content analysis approach to examine the case study of Volkswagen's communication strategies during the Dieseltgate crisis. The primary sources of data include press releases, statements from VW executives, and video announcements released from September 2015 to December 2017. Additionally, consumer reactions to VW's communications were analyzed using social media comments and online forums to capture public sentiment.

Data were coded and analyzed based on Coombs' Situational Crisis Communication Theory (SCCT), which classifies responses into strategies such as denial, diminishing, and rebuilding (Coombs, 2015). By applying SCCT, this study identifies the strategies VW used at different stages of the crisis and assesses their effectiveness in managing public perception.

We have made a summary of the announcements that have been made from the VW from September 2015, when the scandal was found and until 2016 which is the last recall of the scandal from the company.

#### Announcements

September 20, 2015: First Response

##### Key Messages:

- Volkswagen acknowledges the findings and expresses deep regret for the erosion of customer trust, which they vow to restore.
- The company commits to cooperating fully with authorities and conducting a thorough investigation into any legal violations.

September 22, 2015: Technical Investigation and Customer Reassurance

##### Key Messages:

- Volkswagen emphasizes ongoing investigations to address potential irregularities in their software.
- New vehicles meet legal standards, and profits from affected models will be used to remedy the situation and rebuild trust.
- The CEO releases a video reiterating commitment to a thorough investigation, formal apology to customers, and defense of the workforce. He emphasizes the company's focus on transparency.

September 23, 2015: CEO Resignation

##### Key Messages:

- The CEO accepts responsibility for the diesel engine irregularities and announces his resignation.
- Volkswagen's Executive Committee acknowledges the financial cost of the crisis and the loss of trust. They support the CEO's resignation and announce plans to investigate involved employees and file a criminal complaint.
- A committee is formed to oversee the investigation, ensuring transparency and collaboration with external partners.

September 25, 2015: Announcement of New CEO and New Investigations

##### Key Messages:

- Matthias Müller is announced as the new CEO, tasked with regaining trust and ensuring compliance with industry standards.
- The supervisory board suspends employees and authorizes investigations by legal teams in Germany and the U.S. to clarify the issue with diesel emissions.
- An acknowledgment of 5 million affected vehicles, with plans to inform customers and ensure cars meet legal standards.

#### September 29, 2015: Action Plan for Correcting Emissions

##### Key Messages:

- Volkswagen announces its action plan to correct the emission problems. The company will begin offering solutions from October to affected customers, ensuring compliance with legal standards.

#### October 2015: Supervisory Board Changes and Investigations

##### Key Messages:

- Volkswagen outlines continued collaboration with external partners and law firms to provide documented answers over several months.
- New supervisory board members are announced due to resignations.

#### October 6, 2015: CEO Address to Employees

##### Key Messages:

- The CEO reassures employees, stating the company's solid foundation and promising quick clarification of the scandal.
- He also emphasizes the safety of the vehicles and outlines a customer outreach plan.

#### October 7, 2015: Chairman's Address

##### Key Messages:

- The chairman of the supervisory board pledges cooperation with law firms and commits to rebuilding trust with customers and partners.

#### October 22, 2015: Clarification of Legal Compliance

##### Key Messages:

- Volkswagen announces models that meet legal standards and provides customers with online tools to check whether their vehicles are affected.
- The company prepares for remediation actions starting in January 2016.

October 28, 2015: Five-Pillar Strategy for Recovery

Key Messages:

- CEO Matthias Müller outlines a five-pillar strategy focusing on supporting customers, investigating the crisis, decentralizing management, improving internal communication, and adjusting the Group's strategy to focus on quality over quantity.
- A new cultural shift towards openness and collaboration is emphasized.

November 2, 2015: Response to U.S. Environmental Protection Agency (EPA)

Key Messages:

- Volkswagen acknowledges software issues with its 3-liter V6 diesel engines but denies the installation of any illegal emissions-altering software.
- The company commits to full cooperation with the EPA.

November 3, 2015: Additional Findings and Financial Impact (Eger & Schhfer, 2018)

Key Messages:

- The supervisory board expresses concern over new findings affecting 800,000 cars and a projected financial impact of €2 billion.
- The CEO pledges uninterrupted transparency and emphasizes that the truth will guide Volkswagen's recovery.

November 9, 2015: Joint Decision Making for Future Success

Key Messages:

- The CEO and the workers' council agree to make joint decisions, prioritizing future technologies to safeguard the company's success and employment.

December 9, 2015: Clarification of CO2 Issues (Kollewe, 2015)

Key Messages:

- Volkswagen announces the completion of its internal research into CO2 emissions, revealing that the vast majority of vehicles meet their original figures, with only nine models requiring minor adjustments.
- The company reassures customers that no major financial impact will occur, and affected vehicles will undergo technical adjustments.

December 16, 2015: Technical Solutions for Affected Vehicles

Key Messages:

- Volkswagen presents technical measures to the Federal Motor Transport Authority (KBA), and affected customers will be informed about recall procedures in 2016. The solutions will be implemented throughout 2016.

February 2, 2016: Summary of Recall Measures

Key Messages:

- Volkswagen provides a summary of the recall process, emphasizing customer-friendly solutions and efficient implementation.
- The company reassures customers that their vehicles are safe to drive and will meet all legal standards after modifications (Eger & Schhfer, 2018).

This structure presents Volkswagen's communication strategy in a detailed, timeline-based format, highlighting the company's crisis response efforts and commitment to transparency, customer support, and legal compliance.

## **Results**

The results of the analysis reveal that VW primarily employed corrective action and apology strategies throughout the Dieselgate crisis. In the early stages, VW leaned heavily on denial and scapegoating, but as the crisis unfolded, the company shifted toward corrective action by announcing software fixes and compensation plans.

Announcements summarize the communication strategies employed by VW across key announcements, categorized by SCCT strategies. Consumer reactions varied, with early responses characterized by outrage and skepticism. However, as corrective measures were implemented and apologies issued, consumer sentiment showed signs of recovery, though trust was slow to rebuild.

## **Discussion and Conclusions**

This study highlights the effectiveness of using corrective action and apology strategies during corporate crises (Ashby-King & Aragón, 2022). In the case of VW, while initial denial and scapegoating strategies may have exacerbated the situation, the eventual shift toward transparency and corrective measures helped stabilize public perception. These findings corroborate Coombs' SCCT, which suggests that companies facing preventable crises should focus on rebuilding trust through sincere apologies and corrective actions.

VW's strategy was based on accepting responsibility, acknowledging wrongdoing, and committing to full cooperation with the authorities. The company has made significant management changes, while a new action plan to comply with emissions standards has been announced.

The study also provides practical insights for companies in similar industries. It underscores the importance of timely communication, clear accountability, and a long-term commitment to rectifying harm caused by corporate malfeasance.

Solutions to regulatory issues to address such problems go beyond public regulation. In contrast and in addition, Germany and the EU have significantly more restrictions on many levels, in terms of civil liability and consumer protection. The weaknesses of civil liability force us to rely heavily on public regulation to protect victims of environmental damage. However, many legal hurdles remain that make it difficult for affected auto consumers to claim compensation, either in contract or under tort law, even when the damage is attributable to.

Instead, societies around the world, and now Asia as well, are facing the pressing issue of air pollution, and demands for "cleaner cars" have grown in both the US and Europe. Decisions by car manufacturers and consumers must be made based on the total cost of mobility, including all externalities related to oil and petrol consumption. In addition, emission standards must be clear and strictly enforced, reflecting current knowledge of emission risks. This can be achieved through better public regulation and the removal of legal barriers that make it difficult for landlords to take mass legal action.

Therefore, future research should expand the scope by comparing the communication strategies of other companies in similar crises, or by exploring consumer reactions more deeply using sentiment analysis tools.

## References

- Ashby-King, D. T., & Aragón, A. N. (2022). Reinforcing and challenging whiteness through crisis communication: Proposing a discourse of community repair. *Public Relations Review*, 48(1). <https://doi.org/10.1016/j.pubrev.2021.102139>
- Bachmann, R., Ehrlich, G., Fan, Y., Ruzic, D., & Leard, B. (2023). FIRMS AND COLLECTIVE REPUTATION: A STUDY OF THE VOLKSWAGEN EMISSIONS SCANDAL. *Journal of the European Economic Association*, 21(2). <https://doi.org/10.1093/jeea/jvac046>
- Benoit, W. L. (1997). Image repair discourse and crisis communication. *Public Relations Review*, 23(2). [https://doi.org/10.1016/S0363-8111\(97\)90023-0](https://doi.org/10.1016/S0363-8111(97)90023-0)
- Benoit, W. L. (2021). Image Repair in Crisis Communication. In *Oxford Research Encyclopedia of Politics*. <https://doi.org/10.1093/acrefore/9780190228637.013.1593>

- Coombs, W. T. (2015). The value of communication during a crisis: Insights from strategic communication research. *Business Horizons*, 58(2). <https://doi.org/10.1016/j.bushor.2014.10.003>
- Coombs, W. T. (2021). Crisis Communication as Course Correction: Communicative Efforts Revive Goals. In *Strategic Communication in Context: Theoretical Debates and Applied Research* (pp. 111–130). UMinho Editora/CECS. <https://doi.org/10.21814/uminho.ed.46.6>
- Eger, T., & Schhfer, H.-B. (2018). Reflections on the Volkswagen Emissions Scandal. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3109538>
- Kollewe, J. (2015). Volkswagen emissions scandal – timeline. *The Guardian*, September.
- Mansouri, N. (2016). A Case Study of Volkswagen Unethical Practice in Diesel Emission Test. *International Journal of Science and Engineering Applications*, 5(4). <https://doi.org/10.7753/ijsea0504.1004>
- Ruddick, G. (2015). VW makes management changes following emissions scandal. *The Guardian*. <http://www.theguardian.com/business/2015/dec/17/vv-management-changes-emissions-scandal-german-carmaker>
- Topham, G., Clarke, S., Levett, C., Scruton, P., & Fidler, M. (2015). The Volkswagen emissions scandal explained | Volkswagen (VW) | The Guardian. *The Guardian*. <https://www.theguardian.com/business/ng-interactive/2015/sep/23/volkswagen-emissions-scandal-explained-diesel-cars>
- Zhang, Z., Li, K., & Zhang, L. (2016). Research on a Risk Assessment Method considering Risk Association. *Mathematical Problems in Engineering*, 2016. <https://doi.org/10.1155/2016/9191360>

#### Electronic Sources

1. www.ijsea.com: International Journal of Science and Engineering Applications, Volume 5 Issue 4, 2016, ISSN-2319-7560 (On line)- “A Case Study of Volkswagen Unethical Practice in Diesel Emission Test” by Nazanin Mansouri, HELP University, Kuala Lumpur, Malaysia
2. <https://www.volkswagen-newsroom.com/en/press-releases/statement-of-prof-dr-martin-winterkorn-ceo-of-volkswagen-ag-1703>
3. <https://www.volkswagen-newsroom.com/en/press-releases/volkswagen-ag-has-issued-the-following-information-1690>
4. <https://www.volkswagen-newsroom.com/en/press-releases/text-video-statement-of-the-ceo-of-volkswagen-ag-1994>
5. <https://www.volkswagen-newsroom.com/en/press-releases/statement-by-prof-dr-winterkorn-1987>
6. <https://www.volkswagen-newsroom.com/en/press-releases/statement-from-the-executive-committee-of-volkswagen-ag-supervisory-board-2041>



7. <https://www.volkswagen-newsroom.com/en/press-releases/matthias-mueller-appointed-ceo-of-the-volkswagen-group-2040>
8. <https://www.volkswagen-newsroom.com/en/press-releases/the-volkswagen-group-is-restructuring-supervisory-board-passes-resolutions-for-new-organization-2043>
9. <https://www.volkswagen-newsroom.com/en/press-releases/statement-by-the-supervisory-board-of-volkswagen-ag-879>
10. <https://www.volkswagen-newsroom.com/en/press-releases/dr-herbert-diess-ceo-of-the-volkswagen-passenger-cars-brand-explains-we-are-working-at-full-speed-on-a-solution-dot-1762>
11. <https://www.volkswagen-newsroom.com/en/press-releases/volkswagen-ag-announces-action-plan-to-update-diesel-vehicles-with-ea-189-eu5-engines-1728>
12. <https://www.volkswagen-newsroom.com/en/press-releases/statement-from-the-executive-committee-of-volkswagen-ag-supervisory-board-following-its-meeting-on-september-30-2015-1471>
13. <https://www.volkswagen-newsroom.com/en/press-releases/matthias-mueller-we-will-overcome-this-crisis-1683>
14. <https://www.volkswagen-newsroom.com/en/press-releases/statement-from-the-supervisory-board-of-volkswagen-ag-2033>
15. <https://www.volkswagen-newsroom.com/en/press-releases/volkswagen-confirms-ea288-engines-designed-for-eu5-and-eu6-are-not-affected-1806>
16. <https://www.volkswagen-newsroom.com/en/press-releases/matthias-mueller-unveils-next-steps-for-the-volkswagen-group-1770>
17. <https://www.volkswagen-newsroom.com/en/press-releases/statement-on-the-announcement-by-the-united-states-environmental-protection-agency-epa-1706>
18. <https://www.volkswagen-newsroom.com/en/press-releases/statement-of-the-supervisory-board-on-irregularities-in-co2-levels-361>
19. <https://www.volkswagen-newsroom.com/en/press-releases/clarification-moving-forward-internal-investigations-at-volkswagen-identify-irregularities-in-co2-levels-553>
20. <https://www.volkswagen-newsroom.com/en/press-releases/group-board-of-management-and-works-council-agree-on-joint-steps-1692>
21. <https://www.volkswagen-newsroom.com/en/press-releases/co2-issue-largely-concluded-1750>
22. <https://www.volkswagen-newsroom.com/en/press-releases/nox-issue-customers-are-being-informed-implementation-is-starting-1662>
23. <https://www.volkswagen-newsroom.com/en/press-releases/volkswagen-starts-implementing-technical-measures-for-ea189-diesel-engines-in-europe-1668>
24. <https://www.youtube.com/watch?v=5uljMgnYcMU>

25. «The incredible story of a megaton scandal. How we got to the apocalypse of the case. The whole chronicle", news247, September 23, 2015 by Yiannis Skoufis.

# **Leadership, rhetoric, crisis management and mediation: The communicative dimension of the leader in the context of searching for the profile of the modern leader and the leader of the future**

Efstratios Sarris \*

## **Abstract**

The concept of leadership has been explored to a great extent but not sufficiently in all its dimensions. One of these dimensions, which emerges and stands out during the search for the profile of the modern leader and the leader of the future, is the dimension of communication. Knowledge and excellent handling of not just basic communication principles but of communication in a complex form (at all levels and in all circumstances) are necessary criteria for shaping the profile of an ideal leader. The purpose of this study is to highlight the communicative dimension of the leader. At the same time, the study analyzes different aspects of leadership, composes the profile of the modern leader and the leader of the future, defines and describes concepts equally important to leadership, such as rhetoric, crisis management and mediation and interconnects and relates these concepts to leadership. Regarding the methodology followed, the analysis is based on the literature review. The material included is from reputable English and Greek print and online sources. The findings of this study are useful and applicable in any communication context. In conclusion, the communicative dimension of the complex leader is undoubtedly of utmost importance for a correct, effective and successful leadership.

**Keywords:** Leadership, rhetoric, crisis management, mediation, communication.

## **Introduction**

Leadership has been studied by various scientific disciplines (Avery, 2004: 8) and is a prominent scientific field with a large scientific output (Ammeter et al., 2002: 752). It is an issue that has concerned humanity for a long time. However, despite the abundance of corresponding definitions, the concept has not been fully clarified (Triantari, 2020a: 133).

In the modern era, the success of organizations is based on three parameters: Leadership, communication and work motivation (Saputra, 2021: 66). The process of exercising leadership is primarily communicative. The greater the leader's position, the more necessary communication is.

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People in such positions can be politicians, heads of organizations, religious leaders, teachers, etc.. Leaders do three things as they communicate: First, they utilize symbolism, shaping reality. Second, they communicate about the past, present, and future, and third, they deliberately choose specific symbols to achieve their goals (Johnson & Hackman, 2018: 6-21). As can be seen, communication isn't an easy task especially for a leader who may have the ability to speak from a position of authority, but speaking is different from communicating, as communication is also based on listening comprehension. It's not just about conveying a message, but it's a whole process, which requires a range of skills. Leaders who take the impact of communication seriously, taking the time to better understand it, will become skilled communicators (Baldoni, 2004: 20).

It's true that over time there have been studies that focus on leadership and communication. But each research paper is unique as it focuses on different issues and highlights various other aspects of a topic. Moreover, the multidimensional nature and continuous evolution of both leadership and communication, taking place in the context of a rapidly developing globalized environment, necessitate the production of more scientific research.

The purpose of this study is to highlight the communicative dimension of the leader. At the same time, the study analyzes different aspects of leadership, composes the profile of the modern leader and the leader of the future, defines and describes concepts equally important to leadership, such as rhetoric, crisis management and mediation and interconnects and relates these concepts to leadership. The research questions that ultimately arise are:

*RQ1* What is the most common feature of leadership, rhetoric, crisis management and mediation?

*RQ2* Is there a gradation in the types of modern and future leaders?

*RQ3* Which type of leader would be considered the most skilled communicator in the present and in the future?

Regarding the methodology followed, it should be mentioned that the analysis is based on the literature review. The literature was searched through Google Scholar and the physical and electronic libraries of the University of Western Macedonia. The search was made in both Greek and English. The keywords used (separately and in combination) are: "leadership", "leader", "types, styles, characteristics and abilities", "rhetoric", "crisis management", "mediation", "communication", "strategic communication", "public relations" etc.. The material that would be included in the analysis would come mainly from books, collective volumes and scientific articles (from scientific journals related to leadership, communication, management, business, organizational psychology etc.). Each source was selected, after a qualitative assessment carried out in terms of its content, which had to meet the purpose, objectives and orientation of this research. From the research that was carried out, mainly foreign-language but also some Greek-

language sources emerged. The sources were categorized based on their topic and then analyzed based on their content.

## **Literature review**

### *Rhetoric and leadership*

The concept of leadership is primarily related to rhetoric. According to Triantari (2013: 516) rhetoric, related to semiotics, is "the art of speech and persuasion". The orator-politician, using verbal forms or his body, projects either his good or bad self, creating various emotions in the audience.

In general, Aristotle's ethics is the cornerstone of ethical leadership in the entire spectrum of human life, in organizations, businesses and politics (Triantari, 2019: 245). It could be argued that the work of Stagerite philosopher is particularly important for the definition of leadership. In his Rhetoric, which is considered the first model of communication, the elements of leadership are recorded in the light of the person's rhetorical ability (Triantari, 2020a: 134).

According to Aristotle, the leader is necessary to have specific characteristics, such as objectivity, reconciliation, friendliness, moral rhetoric and consequently neutrality and mediation to find middle solutions and face contemporary issues and challenges (Triantari, 2019: 240-245). Analyzing these characteristics in the light of the leader-orator, the leader must: 1) have wisdom to have vision and self-recognition, 2) be virtuous, concerned with values, 3) be good-natured to persuade and influence, 4) seek the golden mean to be sure of himself/herself and courageous, 5) have temperance to be disciplined, balanced and focused. These characteristics are followed by the leader's abilities, which make him/her special and enable him/her to command and influence others. According to these abilities, the leader is able to communicate, persuade, demonstrate emotional intelligence and empathy, make decisions, manage any issue and has systemic-associative thinking, self-awareness and self-management. Additionally, there are other meta-abilities or secondary abilities, which stem from these abilities. Broadly speaking, the leader's characteristics and abilities lead to his/her roles, which extend to results, people and projects, bringing to the fore communication, strategy in management and co-leadership (Triantari, 2020a: 84-101). The golden mean, choice and prudence constitute the three Aristotelian virtues placed at the center of intellectual and moral virtues (Triantari, 2021: 104-110).

### *Crisis management and leadership*

A crisis is "an uncertain situation possessing latent risks and opportunities that must be resolved within a given timeframe" (Canyon, 2020: 6). As a dramatic situation it is chaotic and requires immediate and decisive measures (Prewitt et al., 2011: 61). A crisis is characterized by complexity. "Unexpectedness, time pressure and imminent threat" are also considered important factors in

defining a crisis. There are specific organizational crises, such as a scandal, security breach, labor disputes etc. (Riggio & Newstead, 2023: 205), but there are also crises in general, which the modern world faces as it is unbalanced, such as terrorism, natural disasters, economic/financial crises, unemployment, moral decay and other negative phenomena (Daft, 2009: 9). In modern times, several crises have erupted that have attracted public interest, such as various environmental disasters (e.g. Hurricane Katrina). Although sudden, the problems they caused to local human societies and the environment were enormous. The persons called upon to undertake the management of these crises clearly faced many difficulties. However, crisis management isn't only about specific persons. As crises evolve and become more frequent and complex, all those in leadership positions will be called upon to address them. A typical example of such a crisis is the COVID-19 pandemic, which greatly changed crisis management (Riggio & Newstead, 2023: 202).

Crisis management is “the measures and methodologies used to recognize, control and limit the damage of a crisis, and its ripple effects” (Canyon, 2020: 8). There will always be crises at the individual or collective level, even if some are avoided or some are mitigated. But in some cases the management of a crisis can bring about greater negative effects compared to the crisis itself. If a crisis specifically affects an organization, the effects can be many, such as financial and legal problems, a drop in productivity and even the dissolution of the organization (James & Wooten, 2011: 60-61). For these reasons leaders must be constantly alert in order to deal with unpreventable, unpredictable and unexampled situations (Prewitt et al.: 2011: 61). Furthermore, leaders must be constantly ready to respond and adapt to every potential changes and crises (Daft, 2009: 9).

That is why crisis leadership is vital. According to Canyon (2020: 7) it is defined as:

The capacity of an individual to recognize uncertain situations that possess latent risks and opportunities to ensure systematic preparedness, to discern necessary direction, to make critical decisions, to influence followers and to successfully eliminate or reduce the negative impact while taking full advantage of positive aspects within a given timeframe.

Crisis leadership is necessary, as it's not easy to design protocols and procedures for every potential crisis. An exceptional leader is characterized by flexibility and adaptability, knows what to do immediately and properly manages resources in the face of any crisis. There are several theories related to crisis leadership (crisis management theory, cognitive resource theory, charismatic leadership theory, complexity leadership theory). Moreover, there are specific characteristics that crisis leadership requires, such as communication, sensemaking, decision-making, team coordination and promoting learning (Riggio & Newstead, 2023). A research that was carried out in a nursing environment highlighted specific important elements of crisis leadership, such as a high degree of collaboration, sharing of information, decision-making, fair prioritization and building trust and competency (Kim 2021). “Open, clear, sincere, frequent, emotionally

appropriate and multidirectional communication” is very important for the successful outcome of a crisis. All parties involved need to know everything about the crisis situation and what they need to do, while at the same time they need to have a voice and be encouraged that everything is going to be okay (Riggio & Newstead, 2023). However, in crisis leadership, communication tactics and public relations alone aren’t enough. Rhetoric can make a positive contribution, but it won’t lead to a comprehensive response to a crisis (James & Wooten, 2011: 61).

Finally, the leader must follow specific crisis leadership strategies. Not all of these strategies are always a panacea for all crisis situations, but they are a tool for the leader to use during crises. According to these, the leader must:

- 1) come to the fore by being visible, paying attention to his/her image, being brave, showing commitment and maintaining perspective.
- 2) focus on its main goal by being fully aware of that goal, maintaining value and harmonizing it with reality, providing visions and embodying values and constantly evaluating and revising the goal.
- 3) form a team with the appropriate people who have the appropriate skills.
- 4) have the plan in mind. SWOT analysis could be very helpful.
- 5) minimize the risk by acting, closely monitoring and consulting with the team and experts.
- 6) tell the story. It is important that he/she does it himself/herself as a spokesperson, be honest and timely and shape the message.
- 7) take advantage of the crisis. He/she must continue his/her activities, learning from the crisis experiences and increasing the flexibility of the organization (Prewitt et al.: 2011: 64-73).

### *Mediation and leadership*

Mediation is a fairly important model of communication with a great impact on human relations. Its application is deemed imperative both in society in general and in the workplace in particular, where various issues of behavior and conflicts arise (Triantari, 2020b: 105).

It is a method of Alternative Dispute Resolution (ADR), which is distinguished by its confidentiality, and is highly recommended, especially in cases where the emotional state of the parties involved is quite charged. It can resolve any disputes without quarrels and stress, does not create further disputes, does not alienate the parties involved, is a faster and lower cost method of dispute resolution and is suitable and effective in certain types of disputes (civil, family, commercial, labor or medical) in which, although there is a difference of opinion, interests or needs, the continuation of communication is nevertheless required. The mediator shouldn’t push for a decision or outcome or apply existing law, but should listen to the parties involved, prioritize each person's problems and present realistic solutions and possible options that could be mutually acceptable (Plevri, 2018).

Mediation together with arbitration and the combined arbitration-mediation model are keyways of resolving disputes. All three can be applied by leaders in organizational settings. All have advantages and disadvantages depending on the situation and the goals of the leader. If the leader seeks to make a process fairer or a solution more effective, then mediation or its combination model are a better choice. The leader resorts to mediation to resolve a dispute, when he/she is unable to formally or informally resolve it himself/herself directly (Bowles, 2005).

### *Strategic communication, public relations and leadership*

Strategic communication is a prominent scientific field of communication and management, drawing on relevant scientific theories (Thomas & Stephens, 2015: 3-5). Classical communication, which concerns human interactions, is differentiated from strategic communication, which involves purposefulness and highlights the vision and the social dimension of organizations through the actions of leaders and human resources. These two types of communication aren't completely separated, as they can be connected to each other (Hallahan et al., 2007: 7).

There are strategic communication tools that a leader can use, such as framing, sensemaking, storytelling and dialogue. Each of these enables the leader to persuade others to achieve a goal of mutual interest (Johansson, 2018: 12). Research is very useful for strategic communication as it provides various data, which can be leveraged in strategic planning to address an issue. Then, some strategies are formulated, the implementation of which will be achieved through measurable tactics. As a broader concept, strategic communication includes public relations (Botan, 1997: 188-189).

Public relations is concerned with information flowing to the public, persuading the public to change its attitudes and actions, and connecting an organization with its public (Bernays, 2013: 3). It is argued that strategic communication can explain more fully than public relations the communication practiced by organizations (Falkheimer & Heide, 2014: 124).

Public relations leaders break away from the traditional model of leader-follower interactions, i.e. the traditional communication manager. Especially in the modern era, such a leader should be able to analyze a large and constantly renewed amount of information and data of interest to the organization and through strategic assessment will discern opportunities for engagement and interaction. They are characterized as “communication leaders”, who utilize the entire process above in their interactions and negotiations with the leaders and human resources of organizations (Berger & Meng, 2014: 8).

### *Types and styles of leadership and communication styles*

To date, many analyses, classifications/categorizations and theories of leadership have been recorded, highlighting leader's multidimensional nature and researching leadership styles and



behaviors (Khan et al., 2016: 1). The conceptual search for the leader had begun since ancient times. The focus has always been on the characteristics that make up the outstanding personality. The ancient Greeks laid the foundation for the modern theoretical framework in relation to the leader in family, society, politics, work, organizations and business. Thucydides focused on the rational and flexible leader, who knows how to manage crises and therefore coordinate and manage actions to achieve group goals. Plato spoke of the leader-weaver, who is multifactorial and balanced. Aristotle, greatly influencing later thinking and scientific production around leadership as its pioneer theorist, described the orator-leader, who guides the audience or the group by protecting its coherence and surrounding it with logical and psychological convince. The types of leadership, as inherited from antiquity, include the authoritarian, the organizational, the Aristotelian rhetorical leader etc. (Triantari, 2020a: 74-83).

Since leadership is about influence and power, leaders must form different kinds of relationships with their groups, depending on the type of group. Thus, depending on the group, the corresponding type of leader is also adopted, in order to achieve the acquisition of influence and power. In some groups gaining influence and power isn't as difficult as in others. The leader could be considered one of the participants in the group, who is typically appointed or elected, responsible for guiding and coordinating it. Where no one is formally appointed or elected to the leadership position, there is an informal leader, who is the one with the most influence or the one who enjoys the most respect in the group. The informal leader can be identified through questions asked of group members (Fiedler, 2006: 371).

There is also the classical leader and the organic leader. The former puts himself/herself in the center and doesn't pay much attention to the expertise of the people around him/her, nor does he/she allow them to gain much power. He/she draws strength from praise, expertise and other related factors. Decision making on various matters is done exclusively by him/her. This type of leader could be perceived as more of a manager than a leader. He/she exercises control, largely keeps his/her distance from others, viewing them as inferior, and exhibits strongly masculine behavior. The latter may be an individual or even a whole group. Special importance is given to the know-how of the people related to this type of leadership. The organic leader derives his/her power from the expertise, cooperation, power sharing and contribution of team members. In this type of leader's group all people have power while decisions are made jointly in a distributive way (Avery, 2004).

There are many leadership styles, which can be found anywhere (e.g. in the context of an organization, at work, in politics, etc.), such as the visionary, the supportive, the cooperative and the democratic, and then the directive leader, who is prudent and unrestrained, and the oppressive leader, who is reckless and unrestrained. Other leadership styles are the autocratic, the bureaucratic, the expert, the individualistic, the efficient, the strategic, the alchemist, and the

diplomatic leader. Some of these leaders are distinguished by their flexibility compared to others. There are also leaders with negative characteristics, such as the destructive, the opportunist, the follower and the bystander leader. In an even more negative and shadowy form, the leader becomes dark, including the Machiavellian, the psychopath, the narcissist and the authoritarian leader (Triantari, 2020a: 185-196).

Style is about a leader's focus on performance and people but also about his/her characteristics, attitudes, mannerisms and personality. Style differs from skills, as the latter refer to a series of techniques (planning, organizing, communicating, controlling, evaluating project, solving problem situations, dealing with conflicting issues and meeting a schedule) that are used to meet goals. Each leadership style tends to apply the aforementioned skills differently while a leader's skills are related to the leadership style (Warrick, 1981: 170).

Not only the specific circumstances but also the personalities of the leaders themselves will determine the leadership style chosen. Leaders adjust their leadership styles accordingly. Leadership styles do not naturally exist in people, but are cultivated (Sethuraman & Suresh, 2014: 171). In terms of the workplace, it could be argued that leadership style, organizational commitment and competence through work are interrelated. As a matter of fact, leadership style has an impact on an individual's quality of life at work (Nanjundeswaraswamy & Swamy, 2014: 58). An effective leader is considered one who has the required characteristics, skills, behaviors, various styles and ways of demonstrating these behaviors in relation to his/her personal style (Dulewicz & Higgs, 2005: 114). Generally, followers (people who give meaning to leadership), means (ways of exercising leadership), effects (orientation to leadership) and goals (point of reference) allow a better understanding of leadership styles (Kesting et al., 2015: 23-24).

Each leadership style can also adopt a communication style, which could then even have an impact on the course of an organization. A survey conducted in the South African construction industry showed that leadership styles (e.g. transformational) influence communication styles among human resource (Crews et al., 2019). Communication style could be defined as a person's unique way of using verbal, paraverbal and verbal cues during interactions with other people. These cues provide information about the person's personality, the way he/she interacts with others and how one should interpret the cue. There are seven dimensions of communication style, which could be summarized by the acronym “PRESENT (Preciseness, Reflectiveness, Expressiveness, Supportiveness, Emotionality, Niceness, and Threateningness)” (De Vries et al., 2009).

In intercultural relationships, differences in communication styles can create a negative communication climate, even causing conflict. This is why a deeper understanding of the different communication styles and the communication context in which they take place is primarily required (Liu, 2016). The fact that people differ in communication styles is due to social and educational reasons. Furthermore, men and women can have different communication styles.

Despite gender biases, which are specific to women and include, among others, the softness of their communication styles and the effectiveness of their leadership, the reality shows that women, especially in the field of public relations, because of their own communication styles can better understand certain forms of communication, such as online communication (Tench et al., 2017).

*The modern leader and the leader of the future: Towards a true leader of communication*

As the orientation to the true meaning of leadership is lost, so is the attempt to define it. Disorientation results from focusing on other elements, which, although possibly related to leadership (e.g. power, wisdom, etc.), create a different frame of analysis (Prentice, 1961: 102). Additionally, leadership is confused with other concepts (e.g. management), while dividing it into individual elements for practical reasons (e.g. research) results in its oversimplification. Moreover, the emphasis on specific aspects of it leaves other important aspects of it unexplored. Whatever the truth, leadership tends to evolve conceptually and practically (Avery, 2004: 4).

Most definitions are neither clear nor comprehensive. None of them has been widely accepted to date. In fact it is difficult for the majority to form a clear view of leadership (Avery, 2004: 4, Fairholm & Fairholm, 2009: 1, Vroom & Jago, 2007: 17). Empirical data on leadership highlight its complexity and paradox, the interest it creates in those who approach it and how problematic its understanding can become (Mendenhall, 2017: 3).

Over time, definitions of leader have been inspired by:

the superiority of the intellect for right thought and action,  
wisdom, based on judgment, which in turn precedes discretion and imposes on desires,  
morality, which distinguishes temperament, education and the person's origin  
and the persuasiveness of speech, which is based on the rhetorical skill of the individual  
(Triantari, 2020a: 75).

It seems that all definitions of leadership focus on the influence the leader has on the thoughts and actions of the group. Leadership, using influence and persuasion, aims to create a climate that will direct individuals to undertake and complete tasks and achieve goals of their own volition (Triantari, 2020a: 134-136). Therefore, leadership could be defined as the process of influence, which aims to achieve a goal by guiding individuals and the organization coherently (Prentice, 1961: 102, Sharma & Jain, 2013: 310).

Leadership in today's "Volatile, Uncertain, Complex and Uncertain (VUCA)" environment is a major topic of discussion. Globally, leaders are sought to take the reins of organizations to respond to contemporary challenges, change things for the better, manage crises and solve problems,

making a difference not only within their area of operation but also beyond that. Nevertheless, reality itself shows that the leadership hasn't yet stood up to the circumstances and the demands of the modern era (Iordanoglou, 2018:118). Modern organizations need leaders who are distinguished for their effectiveness, as they understand the complexity of the global landscape, which is changing rapidly and continuously (Nanjundeswaraswamy & Swamy, 2014: 57).

Therefore, it would be useful to define global leadership as well. Leadership of this kind is defined as "the processes and actions through which an individual influences a range of internal and external constituents from multiple national cultures and jurisdictions in a context characterized by significant levels of task and relationship complexity" (Reiche et al., 2017: 11).

Someone isn't considered a leader because he/she has climbed the hierarchy, inherited this right or comes from high socio-economic strata. A leader is a person who intellectually and morally stands out, having virtues, knowledge and experience, elements that are reflected in his/her oral and written speech. His/her ability to convince others logically and psychologically allows him/her to influence them through the interaction of communication, so that they trust and accept him/her while meeting their needs. A leader exercises persuasion in others, inspiring, motivating, recognizing, negotiating, developing initiatives, reasoning and skills, demonstrating broad-mindedness, innovating and making good use of resources with visible results (Triantari, 2020a: 136-137).

A leader must be, know and do. Nature won't have prepared him/her for these, on the contrary, whatever he/she builds will be due to hard personal work and study. A good leader is tireless. He/she never stops either working or studying to constantly improve. When he/she is worthy of trust he/she is also worthy of respect. Trust is built with his/her professionalism, which is highlighted through his/her personality. The leader is distinguished for his/her in-depth knowledge of: a) follower, leadership, communication and situation, b) himself/herself (e.g. strengths and weaknesses of his/her character, knowledge and skills), c) human nature (e.g. needs, emotions response to stress), d) the nature of the work (self-competence and training of others) and e) the organization itself (e.g. climate and culture). The leader has the ability to lead (e.g., goal setting, problem solving, decision making, planning), implement (e.g., communication, coordination, supervision, evaluation), and motivate (e.g., demonstration of ethics, training, consulting, coaching) (Sharma & Jain, 2013: 309-313).

A leader is seen mostly in difficult situations. He/she doesn't dwell only on his/her vision of the future, which he/she sees differently than other people. Most importantly, he/she finds ways to turn these visions into goals by making them clear and communicate them to others. The leader mustn't only communicate these goals but also find people who will commit to making them happen. At the same time, the leader must reiterate, reinforce and affirm these visions and goals. In fact, a leader is retained in the position of leadership as long as the above conditions exist, especially in

organizations that rely on voluntary action. In order to be productive in terms of results, the real leader must also deal with human resources, providing motivation, encouraging, being a source of inspiration, pushing each person to develop and mature, forming a climate of trust, progress and development and finally changing people's lives. Therefore, human relationships, which are formed on the one hand between the leader and the people and on the other hand among the people, are considered of major importance. Both of these types of interpersonal relationships are of interest to the leader, matter, need focus, and interact each other. The leader must give great importance to the quality of these relationships, thus reflecting the ethical levels of the organization (Fairholm & Fairholm, 2009: 2, Marshall, 1991).

The moral and intellectual virtues of the leader are related to happiness and well-being in the workplace (Triantari, 2020a: 78). However, a leader's behavior isn't only related to human relations, but often focuses exclusively on task completion (Avery, 2004: 72). The leader shouldn't consider himself privileged, but be ready to take responsibility. He/she doesn't need to be smart to be effective, he/she just needs to be consistent in words and actions (Kumar et al., 2014: 82-83). He/she could be considered more of a servant than a master. It has been observed that many leaders often define themselves as bosses, creating problematic situations, oppressing and pressuring their subordinates, instead of helping them in their work (Fairholm & Fairholm, 2009: 2). However, this doesn't mean that the leader should serve the employees themselves but the vision of the organization (Khan et al., 2016: 3).

The modern leader doesn't need to act individually, but to cooperate with other people within the workplace. The leader acts and thinks ethically, adopting a framework of values and promoting social and corporate responsibility. It is important to have an inquiring mind, seeking innovation, and to be constructive and interactive, always taking into account the complexity of modern environments (Triantari, 2020a: 249). It can be concluded that the modern leader doesn't embody the standards of leadership, as they were expressed in antiquity, because he/she is primarily interested in power even in an organization (Triantari, 2019: 234).

Finally, in today's complex world of constant transitions, successive multiple crises and inequalities, which over the years intensify, the leader-orator and at a further level the combined form of leader-orator-negotiator/mediator has the whole package of a modern leader (Koliopoulos et al., 2021: 87, Triantari, 2020a), combining theory-practice, ethics-reality and project-person. This leader is valued through the effectiveness of changing conditions and communication crises in the workplace, remaining democratic, negotiating, transformational, cool and active in every situation. He/she seeks to be efficient, achieving the goals that have been set, but he/she is also humane, focusing on his/her human potential and shaping an ideal working environment. He/she knows how to persuade others, is communicative, fair, reliable and honest, inspires confidence and has emotional intelligence. He/she knows how to motivate by encouraging, promoting, rewarding

and increasing efficiency. Today in organizations this leader needs to be a manager as well, utilizing specific tools and performing specific functions, having persuasion and ethos, knowledge and experience, directing, inspiring, planning, creating vision, scheduling, organizing and controlling. Undoubtedly, this leader could also be characterized as a superleader, who combines intellect and emotion by having creativity. From this leader emerges the so-called multifaceted leader, who is the excellent manager-leader and has, in addition to the aforementioned characteristics, ingenuity, cooperation, affability, discipline, control and self-knowledge, humor, adaptability, flexibility, insight, maturity, erudition, open-mindedness, intelligence, talkativeness, curiosity and restlessness. Especially in the period of the COVID-19 pandemic, a leader was needed, who, in addition to emotional intelligence, will also have mindfulness (Triantari, 2020a).

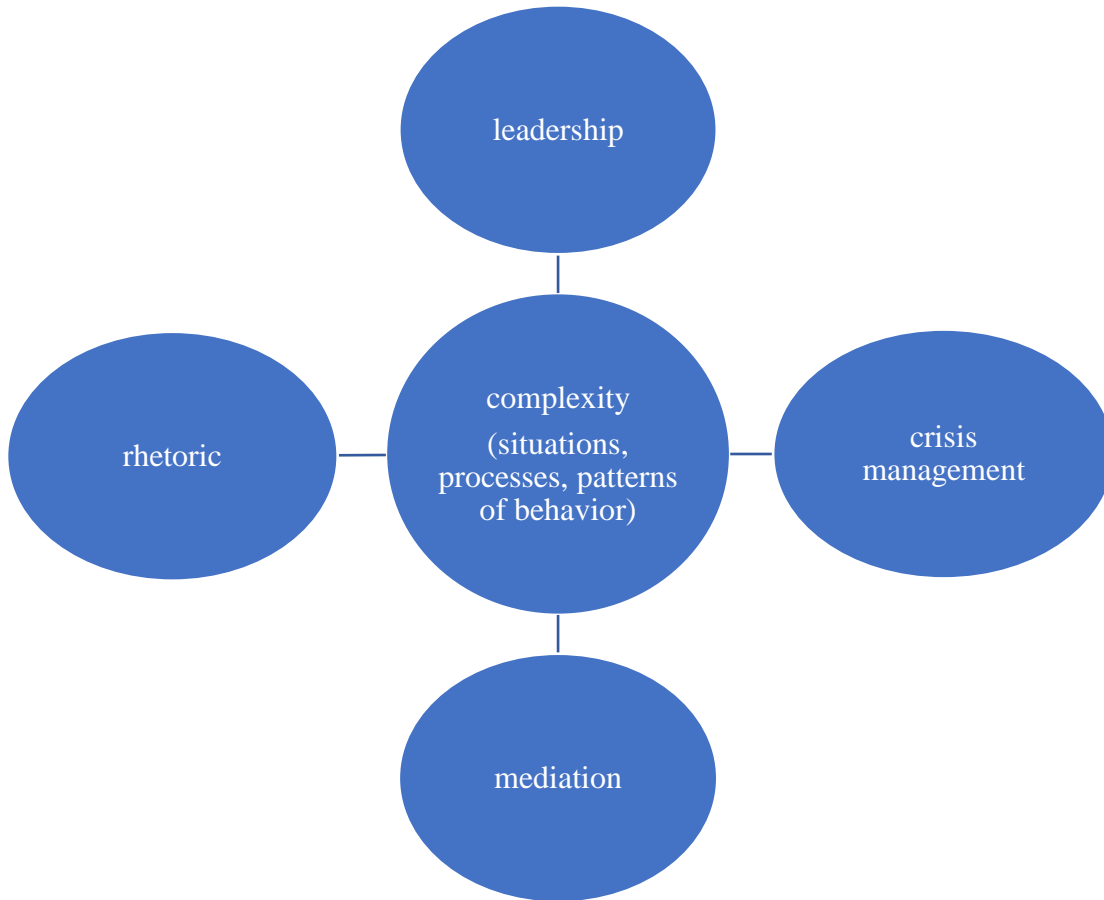
More broadly, global leaders need to be curious, adventurous and open-minded in order to stay ahead of developments (Avery, 2004: 72). Taking all the above into consideration, it seems that leadership is moving from individuality to collectivity. The role of the complex leader is to create adaptive organizational systems according to the complex environment, revising the position, structure and competitive advantage of these systems. The complex leader must be distinguished by complexity in sighting, thinking, feeling, knowing, doing, trusting and being (Olmedo, 2012: 88).

## **Results**

Based on the literature review, this paper distinguishes and categorizes the following findings, answering the research questions that have been raised:

*RQ1* What is the most common feature of leadership, rhetoric, crisis management and mediation?

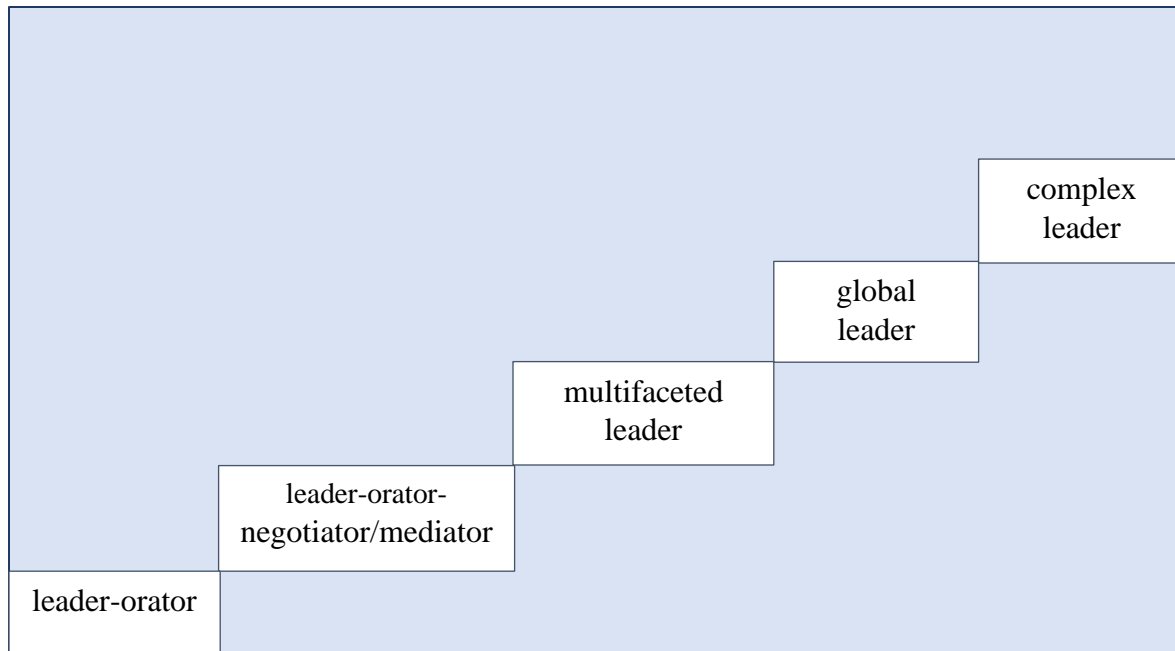
This seems to be complexity. Each of these concepts, based on communication, interactions and human relationships, is about complex situations, processes and patterns of behavior. Figure 1. illustrates the relationship among these concepts:



**Figure 1.** The model of complexity

*RQ2* Is there a gradation in the types of modern and future leaders?

There is a certain gradation of modern and future leaders that could be depicted in the form of a ladder. The order is as follows (bottom to top): leader-orator, leader-orator-negotiator/mediator, multifaceted leader, global leader and complex leader. Figure 2. depicts “this ladder of communicative leadership” in which the leader at the top tends to bring together all those elements of a leader of communication. This ladder could also be considered as the development process of the leader of communication.



**Figure 2.** “The ladder of communicative leadership”

*RQ3* Which type of leader would be considered the most skilled communicator in the present and in the future?

As the most common feature of leadership, rhetoric, crisis management and mediation is complexity, the complex leader is the leader best suited to practice communication in all present and future environments. This leader could also be described as a leader of communication, as he/she has all the package required (e.g. attributes, abilities, skills etc.).

## Conclusion

The purpose of this study was to highlight the communicative dimension of the leader. This dimension is vital for the modern leader and the leader of the future. As a skilled communicator a leader is able to share his/her vision, interact properly with people, build relationships, negotiate, prevent, face or manage a crisis, conduct the mediation process and generally achieve any goal under any circumstance. As leadership, rhetoric, crisis management and mediation are distinguished by complexity, the modern and the future leader must be complex to lead correctly, effectively and successfully. In the era of globalization, this leader transcends national borders to have an international impact. Although he/she is strategic in communication, well versed in the subject of public relations and has specific personal or organizational purposes to serve, he/she still puts people at the center and has a social impact in the context of corporate social responsibility. As artificial intelligence develops more and more the model of the complex leader



is the one that can lead global human society to progress and prosperity. However, like all other types of leadership, this leader will be tested by present and future challenges and dangers.

## References

- Ammeter, A. P., Douglas, C., Gardner, W. L., Hochwarter, W. A., & Ferris, G. R. (2002). 'Toward a political theory of leadership', *The Leadership Quarterly*, 13(6): 751-796. [https://doi.org/10.1016/S1048-9843\(02\)00157-1](https://doi.org/10.1016/S1048-9843(02)00157-1)
- Avery, G. C. (2004). *Understanding leadership: Paradigms and cases*. Sage. [https://books.google.gr/books?hl=en&lr=&id=NLdECzNyUPkC&oi=fnd&pg=PR9&dq=Avery,+G.+C.++\(2004\).+Understanding+leadership:+Paradigms+and+cases.+Sage.+&ots=Y9uSlGRwna&sig=Zip5xP2lYmvBtT4FpVNw11hx5EI&redir\\_esc=y#v=onepage&q=Avery%2C%20G.%20C.%20\(2004\).%20Understanding%20leadership%3A%20Paradigms%20and%20cases.%20Sage.&f=false](https://books.google.gr/books?hl=en&lr=&id=NLdECzNyUPkC&oi=fnd&pg=PR9&dq=Avery,+G.+C.++(2004).+Understanding+leadership:+Paradigms+and+cases.+Sage.+&ots=Y9uSlGRwna&sig=Zip5xP2lYmvBtT4FpVNw11hx5EI&redir_esc=y#v=onepage&q=Avery%2C%20G.%20C.%20(2004).%20Understanding%20leadership%3A%20Paradigms%20and%20cases.%20Sage.&f=false)
- Baldoni, J. (2004). 'Powerful leadership communication', *Leader to leader*, 2004(32): 20-24.
- Berger, B.K., & Meng, J. (2014). Making sense of leaders and leadership public relations. In B. K. Berger & J. Meng, eds., *Public relations leaders as sensemakers: A global study of leadership in public relations and communication management* (pp. 3-15). Routledge.
- Bernays, E. L. (2013). *Public relations*. University of Oklahoma Press. (First published in 1952).
- Botan, C. (1997). 'Ethics in strategic communication campaigns: The case for a new approach to public relations' *The Journal of Business Communication* (1973), 34(2): 188-202.
- Bowles, H.R. (2005). *What could a leader learn from a mediator? Dispute resolution strategies for organizational leadership* (Working Papers). Center for Public Leadership. [https://dspace.mit.edu/bitstream/handle/1721.1/55936/CPL\\_WP\\_05\\_05\\_Bowles.pdf?sequence=1&isAllowed=y](https://dspace.mit.edu/bitstream/handle/1721.1/55936/CPL_WP_05_05_Bowles.pdf?sequence=1&isAllowed=y)
- Canyon, D. (2020). 'Definitions in crisis management and crisis leadership', *Security Nexus Research*, 21: 1-10.
- Crews, E. R., Brouwers, M., & Visagie, J. C. (2019). 'Transformational and transactional leadership effects on communication styles', *Journal of Psychology in Africa*, 29(5): 421-428. <https://doi.org/10.1080/14330237.2019.1675996>
- Daft, R. L. (2009). *Organization theory and design. Tenth Edition*. South-Western, Cengage Learning.
- De Vries, R. E., Bakker-Pieper, A., Alting Siberg, R., van Gamen, K., & Vlug, M. (2009). 'The content and dimensionality of communication styles' *Communication Research*, 36(2): 178-206. <https://doi.org/10.1177/0093650208330250>
- Dulewicz, V., & Higgs, M. (2005). 'Assessing leadership styles and organizational context', *Journal of Managerial Psychology*, 20(2): 105-123. <https://doi.org/10.1108/02683940510579759>
- Fairholm, M. R., & Fairholm, G. W. (2009). *Understanding leadership perspectives: Theoretical and practical approaches*. Springer.

- Falkheimer, J., & Heide, M. (2014). 'From public relations to strategic communication in Sweden', *Nordicom Review*, 35(2): 123-138.
- Fiedler, F. E. (2006). The Contingency Model: A Theory of Leadership Effectiveness. In J. M. Levine & R. L. Moreland, eds., *Small groups: Key readings* (pp. 369-381). Psychology Press.
- Hallahan, K., Holtzhausen, D., Van Ruler, B., Verčič, D., & Sriramesh, K. (2007). 'Defining strategic communication', *International Journal of Strategic Communication*, 1(1): 3-35.
- Iordanoglou, D. (2018). 'Future Trends in Leadership Development Practices and the Crucial Leadership Skills', *Journal of Leadership, Accountability & Ethics*, 15(2): 118-129. [http://www.digitalcommons.www.na-businesspress.com/JLAE/JLAE15-2/IordanoglouD\\_15\\_2.pdf](http://www.digitalcommons.www.na-businesspress.com/JLAE/JLAE15-2/IordanoglouD_15_2.pdf)
- James, E. H., & Wooten, L. P. (2011). 'Crisis leadership and why it matters', *The European Financial Review*, 61: 60-64.
- Johansson, C. (2018). 'Leadership communication', *The International Encyclopedia of Strategic Communication*, 1-16.
- Johnson, C. E., & Hackman, M. Z. (2018). *Leadership: A communication perspective*. Waveland Press. (First published in 1991).
- Kesting, P., Ulhøi, J. P., Song, L. J., & Niu, H. (2015). 'The impact of leadership styles on innovation-a review', *Journal of Innovation Management*, 3(4): 22-41. [https://doi.org/10.24840/2183-0606\\_003.004\\_0004](https://doi.org/10.24840/2183-0606_003.004_0004)
- Khan, Z. A., Nawaz, A., Khan, I., & Khan, D. I. (2016). 'Leadership theories and styles: A literature review', *Journal of Resources Development and Management*, 16(1): 1-7. [https://www.researchgate.net/profile/Allah-Nawaz-2/publication/293885908\\_Leadership\\_Theories\\_and\\_Styles\\_A\\_Literature\\_Review/links/56bcd3ad08ae9ca20a4cdea2/Leadership-Theories-and-Styles-A-Literature-Review.pdf](https://www.researchgate.net/profile/Allah-Nawaz-2/publication/293885908_Leadership_Theories_and_Styles_A_Literature_Review/links/56bcd3ad08ae9ca20a4cdea2/Leadership-Theories-and-Styles-A-Literature-Review.pdf)
- Kim, S. J. (2021). 'Crisis leadership: An evolutionary concept analysis', *Applied nursing research*, 60: 151454. <https://doi.org/10.1016/j.apnr.2021.151454>
- Koliopoulos, A., Triantari, S., Stavropoulou, E., Spinthiropoulos, K., & Garefalakis, A. (2021). 'The Role of leadership negotiation power and the management of communication policies', *International Journal of Economics & Business Administration*, 9(4): 77-97.
- Kumar, S., Adhish, V. S., & Deoki, N. (2014). 'Making sense of theories of leadership for capacity building', *Indian Journal of Community Medicine: Official Publication of Indian Association of Preventive & Social Medicine*, 39(2): 82-86. [10.4103/0970-0218.132721](https://doi.org/10.4103/0970-0218.132721)
- Liu, M. (2016). 'Verbal communication styles and culture', *Oxford Research Encyclopedia of Communication*. <https://doi.org/10.1093/acrefore/9780190228613.013.162>
- Marshall, T. (1991). *Understanding leadership*. Baker Books. [https://books.google.gr/books?hl=el&lr=&id=cAZBwNUZ\\_6IC&oi=fnd&pg=PT144&dq=Marshall,+T.+\(1991\).+Understanding+leadership.+Baker+Books.+&ots=Ue4zJHwpuK&sig=hbpaU43JT8n6KZVtkqAgHo4Vm6s&redir\\_esc=y#v=onepage&q&f=false](https://books.google.gr/books?hl=el&lr=&id=cAZBwNUZ_6IC&oi=fnd&pg=PT144&dq=Marshall,+T.+(1991).+Understanding+leadership.+Baker+Books.+&ots=Ue4zJHwpuK&sig=hbpaU43JT8n6KZVtkqAgHo4Vm6s&redir_esc=y#v=onepage&q&f=false)

- Mendenhall, M. E. (2017). Leadership and the birth of global leadership. In M. E. Mendenhall, J. S. Osland, A. Bird, G. R. Oddou, M. J. Stevens, M. L. Maznevski & G. K. Stahl, eds., *Global leadership: Research, practice and development, Third Edition* (pp. 3-27). Routledge.
- Nanjundeswaraswamy, T. S., & Swamy, D. R. (2014). 'Leadership styles', *Advances in Management*, 7(2): 57-62.
- Olmedo, E. (2012). 'The future of leadership: The new complex leaders' skills', *Academic Research Journals (India)*, 1(1): 79-90.
- Plevri, A. (2018). 'Mediation in Cyprus: Theory without practice', *Cyprus Review*, 30(1): 233-258. <https://www.cyprusreview.org/index.php/cr/article/view/567/491>
- Prentice, W. C. H. (1961). 'Understanding leadership', *Harvard Business Review*, 102-109.
- Prewitt, J. E., Weil, R., & McClure, A. Q. (2011). 'Crisis leadership-an organizational opportunity', *Australian Journal of Business and Management Research*, 1(6): 60-74.
- Riggio, R. E., & Newstead, T. (2023). 'Crisis leadership', *Annual Review of Organizational Psychology and Organizational Behavior*, 10(1): 201-224.
- Reiche, B. S., Bird, A., Mendenhall, M. E., & Osland, J. S. (2017). 'Contextualizing leadership: A typology of global leadership roles', *Journal of International Business Studies*, 48(5): 552-572. <https://doi.org/10.1057/s41267-016-0030-3>
- Saputra, F. (2021). 'Leadership, communication, and work motivation in determining the success of professional organizations', *Journal of Law, Politic and Humanities*, 1(2): 59-70. <https://doi.org/10.38035/jlph.v1i2.54>
- Sethuraman, K., & Suresh, J. (2014). 'Effective leadership styles', *International Business Research*, 7: 165-172. <https://doi.org/10.5539/ibr.v7n9p165>
- Sharma, M. K., & Jain, S. (2013). 'Leadership management: Principles, models and theories', *Global Journal of Management and Business Studies*, 3(3): 309-318. [http://ripublication.com/gjmbs\\_spl/gjmbsv3n3spl\\_14.pdf](http://ripublication.com/gjmbs_spl/gjmbsv3n3spl_14.pdf)
- Tench, R., Topić, M., & Moreno, A. (2017). 'Male and female communication, leadership styles and the position of women in public relations', *Interactions: Studies in Communication & Culture*, 8(2-3): 231-248. [https://doi.org/10.1386/iscc.8.2-3.231\\_1](https://doi.org/10.1386/iscc.8.2-3.231_1)
- Thomas, G. F., & Stephens, K. J. (2015). 'An introduction to strategic communication', *International Journal of Business Communication*, 52(1): 3-11.
- Triantari, S. (2013). 'The rhetorical origins of semiotics. Limits of rhetoric/semiotics', *Byzantinos Domos*, 515-523.
- Triantari, S. A. (2019). 'Orator leader or orator leader. The Leader in Aristotle's Rhetoric', *Philosopher: science, favor, parrisia*, 20: 233-247.
- Triantari, S. A. (2020a). *Leadership. Theories of Leadership: From the Aristotelian Rhetor to the Modern Leader*. Publishing house K. & M. Stamoulis.

- Triantari, S. (2020b). *Ethical and social philosophy of communication: Strategies and techniques of communication*. Publishing house K. & M. Stamoulis.
- Triantari, S. (2021). *Ethics in decision making*. Publishing house K. & M. Stamoulis.
- Vroom, V. H., & Jago, A. G. (2007). 'The role of the situation in leadership', *American Psychologist*, 62(1): 17-24.  
[https://web.mit.edu/curhan/www/docs/Articles/15341\\_Readings/Leadership/Vroom\\_Jago\\_2007\\_The\\_role\\_of\\_the\\_situation\\_in\\_leadership.pdf](https://web.mit.edu/curhan/www/docs/Articles/15341_Readings/Leadership/Vroom_Jago_2007_The_role_of_the_situation_in_leadership.pdf)
- Warrick, D. D. (1981). 'Leadership styles and their consequences', *Journal of Experiential Learning and Simulation*, 3(4): 155-172.  
<https://memberfiles.freewebs.com/84/90/65819084/documents/Leadership%20Style%20and%20other%20consequence.pdf>

## **Ideology and cultural references in shadow theatre. The case of Karagiozis.**

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### **Abstract**

This paper is an ideological and cultural approach to the Shadow Theatre and in particular an episode of Karagiozis. The shadow theatre is approached as a timeless cross-cultural text, amenable to ideological, sociological and psychoanalytical approaches, while theatrical theatre or some form of folklore is outside its research objectives. Research material is the episode of the Shadow Theatre "Alexander the Great and the Cursed Serpent", as attributed to the VictoryMediaKids channel on the Youtube platform with hundreds of thousands of views. The approach of Karagiozis, through the analysis of the emitted message from the point of view of the popular - collective creator, as well as its reception/acceptance by the general, but also specific, children's, audience defines the different agents of meaning production in this theatrical genre. The starting point for the consideration of the material and the research motivation is the parallelism of dream images (manifest content) with the depictions of shadow theatre.

**Keywords:** ideology, culture, Karagiozis, thematic analysis.

### **Theoretical clarifications**

It is the concept of (re)performance that links theatre to ideology. Althusser (1999) in his definition of Ideology states people do not imagine, by means of ideology, their actual conditions of existence, the real world, but mainly they represent their relation to their conditions of existence. The ideological relation to the conditions of existence, as experienced as a matrix of symbolic and imaginary, rational and emotional parameters, highlights the role of theatre as a (re)representation of social life. In class-divided societies, exploitative mechanisms will be overlaid/concealed, mystifying the core of exploitation with a vast veneer of representations, while social conflict will be repelled/returned in the form of a symptom. The acceptance of these images/representations will constitute the two-way relationship between the representer and the represented, not only rendering the image of the social world but also structuring the subjects within it (Doxiadis, 1995).

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The adoption of both theatrical and social roles represent the social and institutional order, the role represents an entire institutional matrix of behaviour (Berger & Luckmann, 2003).

Theatre and theatre performance can be seen as a miniature of society. The connections between performance and ideology extend throughout the theatrical event. All social classes together face their common fate through the theatrical plot. In the audience are hierarchically all economic strata, from the better off to those who attempted to enter without a ticket. In this small society the masses see and recognize the elites. The elites know that they attract the eyes of the many. They lead through their social functions as much as through the ideological/class overdetermination of theatrical practice. Everyone knows that "theatrical fire" will always be lit in the neighbors as they are presented on stage, but through identification it will also touch the real neighbors who sit a few seats away. The humble will match heroic deeds with noble lineage, admiring the display of grandeur on stage at the time of the theatrical crisis/bend, while they will defuse their social criticism, mainly through laughter, when the theatrical plot will highlight their human nakedness behind the veils of money and power (Althusser, 1998).

The root of shadow theatre is the popular celebration, the carnival (Kiourtsakis, 1985). This assumption opens up vast research and interpretive horizons. The folk feast is not divided into participants (performers) and spectators, everyone participates, it is a theatre without a ramp (Bakhtin, 2019). The world of the folk celebration occupies space and time, transforms the ordinary aspect of the world, abolishes hierarchies and norms, forcibly destroys the old in anticipation of the new. Bakhtin will introduce with their work the parameters of the popular laughter and the platonic - public celebration. This laughter is omnipresent, subverting and dismantling everything, giving a new - familiar face to the mundane as well as the otherworldly, degrading and ridiculing everything that causes fear and awe. The comic, the joke has a deep popularity, it is a counterpoint to the pretentious rituals of power, to the class seriousness of the upper classes, it responds with folly and madness to the insanity of the social hierarchy. The popular laughter/celebration is organized by the people for the people, gives form, even in the form of a joke, to popular expectations, while drawing conclusions from this inverted view of the world.

With this bibliographical device we refer to shadow theatre and the figure of Karagiozis. Karagiozis ideologically is a "blank" (Demertzis, 1996) as well as a "central" signifier (Demertzis & Lipovats, 1998). Although no one is as selfish, flighty, "hustler" etc., at the same time Karagiozis manages to symbolize the overall course of Romiosis. The interpretation and understanding of the messages of the show will take on different characteristics for individual individuals, while experiencing its messages as a collective. Horkheimer (1984) emphasizes that: The relationship between Being and consciousness is different in each social class, with this premise we approach social relations as they are refracted in this theatrical genre, producing both unifying and divisive meanings and performances. Remaining within the conceptual and evaluative theatrical realm

seems just as limiting as the typical economic reductionism of theatricals to social practices. Theatrical figures are interpreted as bearers and supports of relations (Althusser, 1983), acknowledging the mechanisms and practices, the historical and logical course of society reflected on them.

### **Thematic analysis**

This section draws on ideas from Thematic Analysis and Discourse Analysis in terms of the active role of Ideology. A conceptual constitution of themes (Tsiolis, 2018) was preferred, as opposed to a paratactic juxtaposition of analysis, in order to broaden the conceptual/contextual paths of thought. Parentheses and quotation marks are used to quote extracts from the theatrical dialogues when these are explanations rather than the body of the paper. The Theme is taken as the minimum analysed period of theatrical discourse, and this is usually a conceptually complete sentence of the theatrical figure.

The **coding** of the text (Appendix) yielded the following codes:

Violence Religion Monster

Language Victim Madness

Knowledge Sacrifice Fortune

Twin Ideology Sleep

Gender Comedy-ComicPoverty

Power Hunger Time/Space

Work Body Psychoanalysis

The **analytical themes** were constructed based on the literature review. Several codes could have had dual inclusion in the Themes, however, their inclusion was chosen on the basis of a more complete framing of the main theoretical definitions. The Themes are made up of the Codes as follows:

**Atoning Victim:** Victim, Sacrifice, Monster, Luck.

**Ideology:** Knowledge, Gender, Power, Power, Work, Ideology, Religion, Time, Space.

**Grotesque:** Violence, Hunger, Body, Sleep, Poverty, Psychoanalysis.

**Madness:** Language, Twin, Comedy-Comic, Madness

*The Mechanism of the Scapegoat*

When we refer to the mechanism of the expiatory victim, we are essentially drawing on René Girard's radical anthropological observations on biblical texts and myths. The starting point of the interpretations is the founding murder, the assumption that every great culture and tradition is established through the memory of a brutal murder. *The destinies of the horde have left indelible traces in human hereditary history, and in particular that the evolution of totemism, which encompasses the origins of religion, morality and social structure, is associated with the violent killing of the leader and the transformation of the paternal horde into a fraternal community* (Freud, 2012). The core of this memory will define human conceptions of the sacred, sacrifice, and ritual.

In the episode "Alexander the Great and the Cursed Serpent" the plot will evolve around the appearance of a monster in the local aqueduct. The popular saying that "dragons live in fairy tales" does not produce investigative results, instead it performs the same ideological function of obfuscation/recognition of the root cause. Girard (2017) highlights how the internal rivalries of human societies can sometimes take on the character of a generalized crisis, which can endanger the survival of the community. In these cases, generalized and diverse social contradictions will polarize around a central one, turning the destructive principle of "all against all" into "all against one", or of a weak group ethnically, culturally, class-wise, physically. He is the scapegoat, the foreigner, the handicapped, the homosexual, the "apothecary" of ancient Athens, the jester, ultimately the Other with a capital alpha. *This violence is truly single-minded, then it defuses the crisis that preceded it, reconciling the community at the expense of a single, unsuitable victim, who belongs to the class of what we colloquially call the scapegoat* (Girard, 2002).

The imaginary resolution of conflicts between community members by mass and universal participation in the murder (stoning, lynching, dismemberment) of the victim or in a ritual where the murder is carried out in public view by an executioner on behalf of the whole community, provides the psychological basis for the deification of the victim. Consensual violence becomes a key concept, since it will transform the guilty victim into an innocent/virtuous deity, while the pre-sacrificial terror will be transformed into peace and unity, this is the "divine substrate" of the victim the unification of the fragmented community. The massive psychological repression of the knowledge, on the part of the community, of the victim's innocence will be reversed as the divine surface of the new divinity. *Peoples do not invent their gods, they deify their victims* (Girard, 2002), recognizing that they cause an externally imposed unity, failing to recognize that it was not the victims who were monstrous, but the violence of the community that turned their appearance into hideousness. Let us not forget that in the memory of humanity there remain traces capable of revealing the accusations against the gods before they were deified (e.g. the aberrations of Zeus, the disability of Hephaestus, etc.).



The memory of unanimity, of the lull in conflict, will be reproduced in sacrificial practices, in the ancestral functions of theatre, sport, games, etc. While the carnival tradition is the echo of sacrificial practices without the brutality of sacrifice, the festive/evocative practices as studied by Bakhtin.

With this theoretical background, the codes "Monster", "Sacrifice", "Victim" and "Luck" are analysed. The "cursed serpent" recalls the biblical name of the devil of humanity, the one who initiates all conflicts between people, the desire for the good of the neighbor. In the name of the monster, in theological language, is expressed the representation of inter-social conflicts. The human origin of the monster is implied in dialogues "*Think what would have happened if this snake had not let us be able to draw water from the cistern*". The monster will superimpose itself on a human structure, not identifying with the elements of nature, while Karagiozis will address it as if it were a small child by petting it. In other words, the monster is both the god/protector of water and euphoria, the ricocheting social conflict over inequality in the possession of land and the product of human labor thereon. Deciphering the theatrical dialogues: "*That damned boa falls into slumber for a year, doesn't wake up, and we can water the whole region!*" The cursed snake reproduces in the collective imaginary the scene of fertilization through water (liquid) of the earth, a widespread motif of metaphor used in many cases by nationalist ideology (the blood of heroes fertilizes the earth). In human terms, a mythical king of the region managed to irrigate the area, boosting productivity, and was later accused of lust and murdered as a scapegoat. It can only be considered a coincidence that the reward for whoever killed the snake was a new reign in the place, which would obviously lead to the next murder. The new king would be reminiscent of Oedipus, having freed the place from a monster, at the same time as ruling in a despotic manner. After all, who would dare to question the ruler who saved his subjects from the monster? We should not be surprised that the collective creator of Karagiozis would not let Alexander the Great accept the reward for his deed. It is worth noting that Karagiozis the king of carnival and laughter, that is, of sacrificial judgment without the sacrifice, is the only one who can summon his predecessor, the deified king.

The episode's "Sacrifice" and "Victim" will confirm the biblical suggestions, as they ritually reenact the founding murder, appeasing the appetites of the deity, giving the community the right to obscure internal contradictions. In the course of history, the human victim will be replaced by sacrificial-sacred animals, as in the case of Ifigenia or Isaac. *The more acute the crisis, the more precious the victim must be* (Girard, 2017). This time the crisis is on the side of the audience, since the drama takes place with the "Greeks" as enslaved rajahs. The young girl who has to be sacrificed is not just any girl, she is the most precious of all, the daughter of Pasha.

"Violence" as a theme is the background of Girard's description of proclassical societies. This will also be analysed in relation to the body and the laughing "blows" of the clown, but here it has an

ontological character for human communities. Its echoes will be traced in the dismembered body ("*Get both your eyes out*"), in the joints of the paper-(semi-)dismembered figure of the shadow theatre. The heuristics of this route also gives results as to the fact of the draw by which the victim is chosen. The mere thought that this was done for the justice of things is blind to the popular wisdom that power would never leave itself exposed to the possibilities of chance. It follows from the foregoing that violence and divinity are the two sides of social competition. The exacerbation of violence leads to phenomena that people cannot interpret, so the interpretations take on mythical/divine dimensions. *Chance has all the traits of the sacred: sometimes it exercises violence against people, sometimes it benefits them* (Girard, 2017). Chance, like the sacred, will constitute an economy of violence, will reduce the mimetic dimensions of the crisis, let us recall what the otherwise childish ditty will tell us: "*how then they cast lots to see who would be eaten*" or that in Russian roulette chance will decide life and death without rights of retaliation.

#### *The carnival reception and the grotesque*

The carnivalesque reception of the shadow theatre is attributed to its crowning function, that of enthronement - dethronement. The process of the laughing process of the laughing process of enthronement - enthronement with the parallel undermining of an upcoming violent dethronement. The case of the jester - King Carnival is illustrative. The disestablishment, mockery, reversal (linguistic and physical) are initiated by the self-evident truth that nothing remains eternally in place, unchanged, armoured against the "turning of time". This principle governs the very plot of the episodes of Karagiozis, since the formal search for a job by the Vizier, the intercession of Hatziavati, the involvement of Karagiozis, the ridicule of the characters and finally their triumph or (and) demise, is interpreted as a comic emergence and installation of Karagiozis in the high culture of skilled labour, the open mockery and mockery of power and its social roles.

The occasion for this paper was the correlation of shadow theatre images with dream images. The code "Psychological Functions" reveals parallels with Freud's observations on dream work. Just as in the dream the "dream images" do not lead to the "dream content", so in shadow theatre interpretation cannot be limited to performativity. *Dream content appears as a transposition of dream ideas into another mode of expression. Our dream ideas are straightforwardly comprehensible when they become known to us. The dream content is available, as it were, in a hieroglyphic version, the signs of which must be transferred one by one into the language of dream ideas* (Freud, 2013). It is worth noting that the metaphorical action claims to be understood as literalism, the psyche itself, through repulsions, pushes in this direction (Jameson, 1999), while the pair "condensation/transposition" is also found in the theory of Ideology as "*metaphor/metonymy*" (Doxiadis, 1992:83). In the dream, the operations of Condensation, Transposition, Inversion and Secondary Processing are distinguished. For shadow theatre, Condensation provides the space for social and cultural references, the conceptual hierarchy

outside the quantitative appearance of images, Reversal for the interpretive use of opposites or twins, Transposition as a process of substitution/transference and finally Secondary Processing as a total reconstruction of psychic meanings.

Restoration, with the parallel victory of the old over the new, has roots in the lived world of ordinary people, in the cycle of life, the rural rites of passage and the very victory of life (every Spring) over yesterday (Kiourtsakis, 1985:152). With these processes man is connected totally, with the whole of the psychic apparatus and not only with the floating part of his conscious part. Laughter and deconstruction will in turn sacralize the simple and humble, give their true dimensions to desires and deconsecrate the false, the authoritative and the pompous. If we can represent laughter, then this is an "instant celebration". The laughing view of life is a more celebratory view of life, a more intimate and human aspect of life.

*Celebration was a form of the second life of the people, temporarily entering the utopian realm of universality, freedom, equality and abundance* (Bakhtin, 2019). The official celebrations with all the seriousness of power, with class and seriousness, celebrated the social status and yesterday; in contrast, the carnival celebrations were a ridicule of every monolithic narrative, of every authoritarian certainty; they materialized in practice the celebratory equality, they left room for an open and better tomorrow for all. The platonic-religious events cast a new form of historical consciousness, capable of forming the basis of consciousness for the Renaissance and the entry into modernity. This optimism will gestate the new, will turn the terrible into a funny fear, death into resurrection, the end into a beginning, the up into down, and will be depicted in the "wheel of fortune", in the territorialized continuous roll with the human body as its radius. "Up" and "down" have here an absolute and strictly topographical meaning. Above is heaven; below is earth; and earth is a devouring principle (the grave, the womb) and a generative, regenerative principle (the mother's womb). This is the topographical meaning of above and below in their cosmic aspect above is the face (head), below is the genitals, the abdomen and the buttocks (Bakhtin, 2019). Above are the authorities, their spiritual functions; below are the people with their "humble" instincts of the abdomen and digestive system.

This is the biblical overview of "this Low and High" (Kiourtsakis, 1985:287), the Karagioz of us all. The jester of our childhood where he lives in his own space and time, that of utopia and timelessness. With the above as a vehicle, we run through the remaining codes: Violence, Body, Hunger, Poverty, Sleep.

*"All the values which, in our societies, are usually considered "higher-higher" ideas and emotions, romantic loves, heroic acts, sacred symbols, official institutions, offices, titles are transmuted into bodily needs and functions, into food and material goods, all are systematically displaced, transferred to this "lower" region; in a word, they are degraded"* (Kiourtsakis, 1985:77). The body of Karagiozis is the people and their needs/paths, it is a body in opposition to classicism (M.

Alexander), a body next to death and rebirth rather than in the midst of life (youth), a body open with holes and bulges, devoured and dismembered, rough and a-continuous. Its bodily derivatives (urine, faeces) are a 'merry matter' (Bakhtin, 2019), as these connect it to the mother earth, it is familiar as they are its own production. Bodily functions with relative (unconscious) ease lead to the familiar animalistic pictorial representations of Karagiozis, just as is the case with phallic substitutions.

The "hand" and the "hump" of Karagiozis are top impressions, as this will introduce us to the codes of the legendary "Hunger" and the constant blows - "Violence". *The genitals may be represented in the dream by other parts of the body, the penis by the hand or the foot (...) the bank and the bed signify conjugal life, in the dream the table substitutes for the bed wherever possible, and the complex of sexual representations is transferred to the complex of eating* (Freud, 2013). In the grotesque tradition and in fairy tales, the body parts are separated, conscious of their own existence, living their own lives. If we look back to the images of the Satyrs of antiquity, obviously the hand of Karagiozis is the castrated phallus, not only of size or structure, but because of its own fertilizing will, its special connection with the world *"this hand beats and steals, resists and grabs, struggles and expresses itself; with it, the body of Karagiozis transcends the limits of the normal body, goes out more effectively into the world and communicates with it more deeply"* (Kiourtsakis, 1985: 193). In our episode we encounter the classic phallic substitution with the size of the nose, as the colics in the familiar theme of military weighing-weighing will complain that their father's nose bothers them.

The hunchback of Karagiozis is the dipole of the belly, a belly in reverse, but this one metabolizes not food but wood. The moment after Karagiozis has revealed the lie about killing the monster is typical, just after he has been forcibly expelled from the palace and the wedding table he will say: "Hey! You mummy! Don't ask what I ate here (hump), ask what I ate here (belly)". The beating and violence impressively permeate every episode of the shadow theater as well as the one being analyzed. Violence seems to break the deadlock, to interrupt an endless order, to punish, to discipline; after all, violence is a generic equivalent, a physical kind of money with which to pay, buy, risk, reward. The moment of Hatziavati's beating after the revelation of his own lie about the "damned snake" is telling, when the Vizier will call the guard to punish him. When addressing Dervenaga, the central personification of state repression, Karagiozis will state: "Ouch! He's shouting at the central cashier too". The life and sufferings of the Clown are steeped in physical and economic violence; the life of the people is pinned down by the silent violence of the ruling classes. It is more than heartbreaking to see the moment in which the Clown continues his reaction of beating, even after the dervish has stopped beating him:

Clown: Oh, wait! Let me talk to you! Let me tell you!

Dervenagas: Why are you acting like that, boy?

Clown: A! Have you stopped? You didn't warn me!

The dialogues will confirm that "*power is exercised over bodies*" (Doxiadis, 2001:104).

Returning to the earlier theme of the scapegoat, it is this violence that will link the body to the dismembered Bacchic corpse of the founding murder, Bakhtin will cite the 'September pulp' (2019), while the transformation of social rivalries into eating contests as '*kitchen re-enactments*' (2019). "*Wood is by definition inseparable from physical drama; it encapsulates the fierce competition of men for survival, social violence, coercion, the oppression of man by man through the use of material power*" (Kiourtsakis, 1985:266).

Karagiozis' "Hunger" has a clear and inverse relationship with Rabelais' narratives. The mythical gluttons here have been transformed into deprivation and social critique, much more so in the episode Karagiozis will imply that the people are not only deprived, but consume the unhealthy leftovers of the dispossessed world:

Copperhead: What food do we have, Father?

Clown: Swab stew!

The image of deprivation seems to have absorbed the pleasure of sex as well. In the episode, Karagiozis is not looking forward to marrying the Vespiropoula, more reminiscent of a critique of the marriage financial/family contract, going back on his words: "If I find an interest I'll remarry! Poor you!". The social reductions of the Greece that gave birth to Karagiozis, prudery and family honour will deprive his carnival tradition of its orgiastic elements, will remind us of the sexual deprivation and refraction of the reproductive image, as it is prevalent in the rebetiko song.

The code of "Poverty" is not particularly massive and could be incorporated along with "Hunger". Quantitatively, ten (10) records will be counted, but at the same time social representations from the triangles of social division are rendered. When the Cursed Serpent kills Zaban Aga the barefoot clown will say: "Let him have his shoes, man!". This code takes on the character of a social critique and is not linked to the euphoric images of Bakhtin's analyses. It differs from Karagiozis' "Hunger", as it goes far beyond its saturation and is more openly linked to social references.

Social class, while being an economic category, is experienced by the subjects as a cultural reality (Demertzis, 1989). The society of the neo-Hellenic Karagiozis is a transitional society towards modernity; the Karagiozis is a newly urbanized inhabitant of the city, with strong connections to the village. His shack is the symbol of the slum, the world of the "barefoot" of the city. This world lacks the pre-modern certainties, it is a disembodied world with the subjects disappeared (Lekkas, 2011), their analytical tools come from yesterday while living a rapidly changing today. The class oppositions of the city are repositioned by the collective creator in yesterday, the Turkish figures declare that for ordinary people not much has changed, rayans remain for power, poor for economy,

objects of violence for state institutions. The utopian elements of the shadow theatre appear exclusively in the epic episodes, in those connected to the mountain, where the glamour of the Revolution presents a more just world. The course of social events transformed the manly thieves of the struggle into thieves of daily survival.

In this light, the individual ideology of Karagiozis is equivalent to social criticism, since this is the subjective aspect of social life (Doxiadis, 2017). His mischievousness, extreme individualism and philia can be interpreted as a profound "indictment" of the hypocrisy of social roles, the impersonal character of city life, the openly unfair way of production/distribution of social wealth. The clown lives "in the desert of the Real" (Zizek, 2003), in a world without vision, without hope, without imagination, he recognizes the raw truth about the real and can endure it without the idealizations of ideology. Through this truth and inversions we can and do laugh, we connect as an audience with it. Karagiozis is not a role model, his social figure does not produce perspective, we cannot follow his example. The history of the country in the mid-20th century will for the first time provide figures of social change, but it may be through this masquerade that we can unmask the lies that govern our social world.

In light of the above, the code of "Sleep", as an escape, is also approached by Karagiozis. It is a sleep antidote and substitute for "Hunger", comforting as well as dead-end, as Karagiozis answers in it that he is asleep. Karagiozis's sleep is not a temporary escape from the unbearable reality of poverty/suffering in his dream meals. *We escape into Reality in order to escape from the truth of our desire as expressed in the dream* or else *Reality is an imaginative construction that enables us to cover the Real of desire* (Zizek, 2006). The Clown escapes the unbearable weight of his dream's desire for a just society in reality, escaping with an alibi of his wiles as an ideology to cynically confront a dead-end world.

#### *Ideology as an active component of reality*

The cohesive role of ideology can synthesize the disparate meanings of the creator, the audience, the different epochs that meet on the blank canvas and in the real time of the performances. We start with "Space" and "Time" as they are reflected in the theatrical dialogues.

The space of the performance is the pre-modern space, the space as it is constituted and appropriated (Poulantzas, 2008) by the subjects of the great state, with its alleys and mahalades, while it has not yet undergone the processing of nationalist ideology. The references (mainly to water supply) are to the outskirts of the city, or more generally 'the place'. The authority of the vizier does not concern the territory of the nation or the empire, but rather a local authority. The references to other cities highlight the view of the area from the perspective of trade rather than the single national continuum.

The time of the performance is the rural cyclical time. This observation governs not only the perception of time as a subjectification of reality, but the perceptual/mental basis of the entire era. From the appearance of the "Beast" to the curses "bad time to be had", everything has a cyclical and recurring course. On an ideological level they symbolize repetition without the prospect of change. Time in the course of the performance will "curve" ideologically under the intervention of ideology in two instances. First: the moment of recognition of Karagiozis by Alexander the Great. Second, the hero's prayer before the battle with the "Cursed Serpent". The Greek-Christian continuum knows no historical limitations in popular consciousness, so Alexander will (re)recognize his biological descendant and great comedian Karagiozis, while his "Christian" prayer should not be a problem for the audience, the hero and the theatrical environment are so familiar, so they certainly obey the modern form of religious consciousness.

The codes "Ideology" and "Religion" refer to obvious statements in the dialogues as much as to a deeper over-definition of meanings. In the texts there are references to the Virgin Mary, Christ, Allah, as well as to moments in the history of the Greek nation. Perhaps the most ideological moment of the episode is the lying on the part of the lower classes in the face of power, the deceitful attempt to reap the rewards of an act they did not do and their subsequent just punishment. At the same time, the noble hero will deny his reward, invoking the greater good as a noble motive. The moment of our heroes' rehabilitation and the realization/acceptance of their social position is riveting, as the laughter and symbolic upheaval of the world will be transformed into a new and superior legitimization of the existing order.

"Work" as a code revolves around the classic tale of Karagiozis with Hatziafati, while the episode itself does not elevate the comic hero to some specialized function, e.g. that of a Doctor or Scientist. Interestingly, the state official's view that all work should be paid for. "Power" has the characteristics of pre-modern power, it appears organized around the two religions, having paternal characteristics. Karagiozis' desire to become the son-in-law of the Vizier, to become part of the elite recalls Freire's words (1974) *The oppressed feel an irresistible attraction to the oppressor and his way of life. To participate in this way of life becomes a powerful desire*. In the absence of an alternative, the only model is that of the oppressors. The celebration of Karagiozis' enthronements (in many episodes) shows the power of community, family and blood in these societies, ties that will later turn into patronage/patronage client relationships (Michael, 2015). The distance we feel separated from key parameters of the social organization of the show should not surprise us. They are the values of a bygone era. Within our familiar analytics lives modernity (Jameson, 2007), which refracts and deforms what in the episode seems immovable.

The image of women in the show carries all the stereotypical weight of the society of the time. The code word "Gender" will describe Ayse as the wedding prize of the throne, Aglaia as the occupant of the private spaces of the shanty, "Woman, let'seat!", while bravado will be identified with the

nation's eternal neanderthal, Alexander the Great. Karagiozis' description of the imaginary rite of passage conveys images of serenade and love of the time.

The code of "Knowledge" is perhaps the best introduction to the theme of "Madness", as Karagiozis' inverted/rejected knowledge becomes the point of identification. Knowledge in the episode, as in the literature, derives from authority, revealing self-evident, as well as misunderstood truths.

*The history of madness and the comic*

In popular tradition as much as in the view of Karagiozis, historical forms of interpretation of "Madness" survive. In folk legends, the alafroishkios has in folk legends a special relationship with the absolute of knowledge, a knowledge that will often be identified with magic or ultimate evil. *The illusory images of the blind parachute are nothing but the great knowledge of the world* (Foucault, 2004). Karagiozis' knowledge touches the deepest contemplation, far surpassing the habitus of Hatziavati and all of us. It is his own inversions of reality that reveal, through foolishness, our own "false consciousness", our ideological/existential misunderstandings of truth. From this residue of truth, from this misunderstood meaning, we will be able to ideologize, as a joke, his message. The different relationship/analogy of repression and idealization of truth is the basis of the crowning of Karagiozis as King of Laughter, a leader of Madness as much as of avarice, laziness, pleasure, foolishness, gluttony and sloth. Let us toil in a world that daily belies our labours, the ragged King has told us from childhood the truth. It is only on this ground that the multitude of references within the play that we are about to see comedy can be interpreted. As the secondary processing of the dream (Freud, 2013), surprised by the power of our desire, will censor it within the dream, revealing to us the unacknowledged truth: "it is only a dream". The same will happen in shadow theatre, the truths you heard "are just comedy"...

The "Language" of shadow theatre and clowning is a whole world. Riddles, military orders, wishes, curses, praise, expressions of love and harsh truths will accompany the dialogues. The language of Karagiozis renews the worn-out meanings of seriousness, transforming the subject into a creator of reality rather than a prisoner within its system. The regularity of meanings seeks to fix at every point the earlier moments of social becoming, emphasizing the truths of yesterday, the eternal truth of power (Voloshinov, 1998). The language of laughter incorporates desire, social action and struggle into the linguistic becoming, opening up the range of possibilities for human intervention. Here the parallel world of the people lives directly in the language of celebration. The motif of degrading linguistic digression (Freud, 2016) remains classic, which escalates to the direct expression of repressed emotions e.g. the Karagiozis will "wish" the outgoing Hatziavati "Good riddance!" Highlights of the language of shadow theatre include Karagiozis' addressing of Pasha as a colleague and his cheeky judgement to Alexander the Great that he "is a fool with a



helmet". The celebratory - platitudinous language will reach, together with the "Madness" factor, a frenzied delirium capable of revealing obscured aspects of reality.

"Comic" as a code word highlighted the parallel world of laughter, folly and jokes. Its point of departure starts from the mirror stage (Lacan, 1979), that decisive moment of the formation of the ego for each subject. The constitution of the unified ego, in the light of a dominant discourse, cannot take on the character of a mere reflection. *The consciousness of the oppressed is usually a contradictory amalgam of the values of the oppressors which they have assimilated and of concepts that flow more directly from their practical experience* (Eagleton, 2018). The mirror of the self-consciousness of the plebeian strata will take on the characteristics of the humble face of literature, laughter, parody and comedy. High art, tragedy, the aspects of power concern the higher acts of the elites, who consider the values of the people "low" and the popular theatre equally low art. This world was and will remain foreign to them, as foreign as abundance and luxury are to our poor hero.

## Conclusions

This paper has attempted a re-interpretation of a kind of popular - children's theatre, "*an analytical leap, not subject to conditions, over the shadow*" (Sagriotis, 2003:141) of shadow theatre. Through thematic analysis, we approached in a special way what is considered nationally proprietary and proved to be familiar as part of a global carnival-festive heritage. "*The local and the foreign, the national and the global communicate much more profoundly than academic chauvinisms teach in all countries of the world*" (Kiourtsakis, 1985:14). In the world of the birdean society the pre-modern foundations of the modern ideology of society, the ground of what we would call the nootropy (Lipovats, 1991) of the modern Greek, can be discerned.

Most sociological and ideological analyses in shadow theatre, in Karagiozis, but also in the wider tradition of the grotesque leave a 'bitter taste' of a dead-end dystopia of the absolute stripping of the subject. The consoling action of laughter does not seem capable of alleviating social and physical drama, hunger and violent blows. Instead, it can become a laughing release/engagement of the prevailing order. Maybe we expect a lot from a children's show, maybe it is just a comedy, in any case the carnivalesque deconstructions of hierarchies in shadow theatre maintain structures by inverting meanings, reveal truths, but cannot transform them. What is most critical is to transform the world we live in into a more human one, not just to temporarily "turn things upside down". The society that spawned shadow theatre could not logically have stepped outside the narrow horizon of its time. But within the 20th century a new social subject, the working class, capable of providing a historical outlet, was gestated. *The Fool-King does not merely represent a temporary carnival suspension of Order, reminding us of the instability of things in their eternal cycle, the great Wheel of Fortune, but begins to function as a founding figure of a New World*

*Order* (Zizek, 2005). Somehow laughter and celebration will become rites of passage for humanity's march from the realm of necessity to the realm of freedom.

## References

- Althusser, L. (1983) Elements of self-criticism. L. (Lectures, Lecturer, L. L. (Lecturer): Polytype Publications.
- Althusser, L. (1998). Brecht and the revolution in theatrical practice. Theses, vol. 62.
- Althusser, L. (1999). theses (1964-1975) (X. Yataganas, Trans.). Athens: Themelio.
- Bahdin, M. (2019). M. M. Rabelais. On popular culture of the Middle Ages and the Renaissance. (G. Pinacoulas, Trans.). Heraklion: University Publications of Crete.
- Berger, P., Lukman, T. (2003). The social construction of reality (K. Athanasiou, Trans.). Athens: isos.
- Demertzis, V. (1989). Culture, Modernity, Political Culture. Athens: Papazisis Publications.
- Demertzis, N. (1996). The discourse of nationalism. Ambiguous semantic field and contemporary trends. Athens - Komotini: Editions Ant.N. Sakkula.
- Demertzis, N., Lipovats, T. (1998). An essay on ideology. Odysseas Publications.
- Doxiadis, K. (1992). Odysseus, K., Odysseus, K., Odysseus. Othina: Plethron.
- Doxiadis, K. (1995). Nationalism, Ideology, Mass Communication Media. Athens: Plethron.
- Doxiadis, K. (2001). Society, Ideology, Ethics. Athens: Plethron.
- Doxiadis, K. (2017). Ideology six lectures. Nisos.
- Eagleton, T. (2018). Athens: Field.
- Foucault, M. (2004). The history of madness (F. Abatzopoulou, Trans.). Athens: Heridanos Publications.
- Freire, P. (1975). The treatment of the oppressed (G. Kritikos, Trans.). Athens: Rappa Publications.
- Freud, S. (2013). The interpretation of dreams. (A. Anagnostou, Trans.). Athens: Epicurus.
- Freud, S. (2012). Psychology of the masses and analysis of the ego (N. Mylonas, Trans.). Athens: Hellenic Education Publications S.A.
- Freud, S. (2016). (Athens, Greece). V.V.S., V.P. (Ed.), V.P. (trans.): Plethron.
- Girard, R. (2002). They consider Satan as lightning... (E. Grammatikopoulou, Trans.). (in Greek): Exantas - Threads.
- Girard, R. (2017). R. Randard, R. R., R., (R.). The scapegoat (K. Papagiorgis, Trans.). Athens: Plethron.
- Horkheimer, M. (2014). philosophy and social critique (A. Economou, Z. Sarikas, Trans.). Athens.
- Jameson, F. (1999). The postmodern or the cultural logic of late oppression (G. Varsos, Trans.). Athens: Nefeli.
- Jameson, F. (2007). Essays on the ontology of the present (Sp. Marketos, Trans.). Athens: Alexandria Publications.
- Kiourtsakis, G. (1985). Carnival and Karagiozis. Athens: Kedros.
- Lacan, J. (1979) The stage of the mirror. The Citizen, vol. 25.

Retrieved 10/10/2022 from:[http://politis.eu.org/images/pdf/1979\\_025.pdf](http://politis.eu.org/images/pdf/1979_025.pdf)

- Lekkas, P. (2011). Nationalist ideology. Five working hypotheses in historical sociology. P. (2011): Papazisis Publications.
- Lipovats, T. (1991). Issues of political psychology. Athens: Exantas.
- Michael, D. (2015). Ethnos, Nationalism and National Consciousness. Thessaloniki: K.&M. Ant. Published by.
- Poulantzas, N. (2008). The State, Power, Socialism. Athens: Themelio Publications.
- Sagriotis, G. (2003). Critical theory: tradition and perspectives (K. Kavoulakos, Ed.). Athens: Nisos.
- Tsiolis, G. (2018). Research trajectories in the social sciences. Theoretical - methodological contributions and case studies. Retrieved 11-10-2023 from:[https://www.researchgate.net/publication/329363823\\_G\\_Tsioles\\_2018\\_Thematike\\_analyse\\_poiotikon\\_dedomenon\\_Sto\\_G\\_Zaimakes\\_epim\\_Ereunetikes\\_diadromes\\_stis\\_Koinonikes\\_Epistemes\\_Theoretikes\\_-\\_Methodologikes\\_Symboles\\_kai\\_Meletes\\_Periptoses\\_Panepistemio\\_Krete](https://www.researchgate.net/publication/329363823_G_Tsioles_2018_Thematike_analyse_poiotikon_dedomenon_Sto_G_Zaimakes_epim_Ereunetikes_diadromes_stis_Koinonikes_Epistemes_Theoretikes_-_Methodologikes_Symboles_kai_Meletes_Periptoses_Panepistemio_Krete).
- Voloshinov, V. (1998). Marxism and the philosophy of language (V. Alexiou, Trans.) Athens: Papazisis Publications.
- Zizek, S. (2003). Welcome to the desert of the real! Five essays on 9/11 and other related dates (V. Iakovou, Trans.). Athens: Scripta.
- Zizek, S. (2005). The puppet and the dwarf, the perverse core of Christianity (K. Perezous, Trans.). Athens.
- Zizek, S. (2006). The high object of ideology (V. Iakovou, Trans.). Athens: Scripta.
- Zirar, R. (2017). violence and religion cause or effect? (A. Kalatzis, Trans.). Athens: Isos Publications - P. Kapola.

## **Foreword to the sixth thematic: Media in the Digital Era: Bridging Communication, Education, and Culture**

Stamatis Poulakidakos\*

The thematic section “Media in the Digital Era: Bridging Communication, Education, and Culture” addresses the evolving landscape of media in a world increasingly shaped by digital technologies. This section delves into how digital media acts as a crucial bridge between traditional modes of communication and the contemporary needs of education and culture. In today’s fast-paced environment, media platforms are not only tools of communication but also serve as educational resources and cultural spaces, influencing how individuals, particularly younger generations, engage with the world.

The first paper, “Outlining the Ethos of Generation Z from and through Music and Radio” explores through quantitative methodology, the attitudes, opinions, and behaviors of undergraduate students of Generation Z from Greece, in relation to their music and radio programs preferences. This work is based on an audience survey employing a quantitative method of analysis that uses a specially designed digital questionnaire, trying to outline the case of Greece based on Generation Z, and by extension the ethos of Greek Generation Z from and through music and radio.

The purpose of the “Infotainment and the Pandemic: A Comparative Content Analysis of the Infotainment during consecutive waves of the COVID-19 pandemic” is to determine whether the infotainment practices observed on the news bulletins under research became more intense in the third wave of the pandemic compared to the second. More specifically, the research highlights specific technical aspects of dramatisation (music and sound effects, metaphors and evaluative adjectives) as well as negativity, and it crosstabulates them with the news period.

The third paper, “The Convergence of Public and Private Sphere in the Context of the New Digital Era: The Role of Radio” seeks to investigate whether radio confirms its role as a medium which is part of the Public Sphere but also if and how it constitutes a point of convergence of Public and Private Sphere within the competitive context of the new digital era. Through in-depth interviews with professional journalists, this research aims also to scrutinize the current role of radio in the Private Sphere and the extent of its influence upon it.

Finally, “Media Literacy: A Bridge Between Communication and Education” emphasizes the growing importance of media literacy in fostering critical thinking and informed communication.

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It argues that media literacy is vital for individuals to navigate the complex media landscape, serving as a tool for both education and cultural engagement.

Together, these papers offer a comprehensive view of how media in the digital era continues to shape communication, education, and culture.

# Outlining the Ethos of Generation Z from and through Music and Radio

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## Abstract

Generation Z has been a major issue for the Media and Education in recent years, since its members, as digital natives, do not rely on standard broadcast programs and physical media to consume content, while in various educational environments seem to be easily bored. Therefore, their favored ways of learning and the corresponding environments are of great interest for the educators. The paper explores, through quantitative methodology, the attitudes, opinions, and behaviors of undergraduate students of Generation Z from Greece, in relation to their music and radio programs preferences. This work is based on an audience survey employing a quantitative method of analysis that uses a specially designed digital questionnaire, trying to outline the case of Greece based on Generation Z, and by extension the ethos of Greek Generation Z from and through music and radio. It is therefore an empirical study whose findings and results will contribute to the quality of Higher Education and Adult Education, as well as the media environment and space. Finally, the findings and results confirmed the genealogical characteristics and habits of members of Generation Z, as highlighted in the existing literature, and agreed with findings and results of previous empirical studies and research papers regarding radio listening habits and the role of radio in the public sphere.

**Keywords:** Generation Z, audio content, radio, podcasts, music, media studies, radio studies.

## Introduction

Media and Education are two (2) social statutes that play an important role in the public and private sector (cf. Stack & Boler, 2007). It is a fact that in today's 21st century society, these two (2) statutes provide the kind of knowledge that creates a novel modernized and digital era of experiences (Nicolaou et al., 2019; Stack & Boler, 2007). Likewise, there is a strong emphasis on technology transfer and facilitating linkages between audiovisual industry and academia from and through Information and Communications Technologies (henceforth, ICTs), which essentially contributes to the enhancement and effectiveness of the learning provided (İplikçi, & Batu, 2023; Matsiola et al., 2019; Nicolaou, 2022; Shutaleva et al., 2023). As already stated in the literature

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(Mbeke et al., 2010; Nicolaou et al., 2021a; Schiffrin, 2019), ICTs are the main backbone of the media that nowadays function via a globalization mode (see Nicolaou et al., 2021: 155 et seq.). Undoubtedly, one of the results of globalization is the convergence of media and, by extension, ICTs (Dimoulas et al., 2019, 2015; Podara, 2021), and what we call today Adult Education (Nicolaou, 2019). On the one hand, media and ICTs, which are deeply interconnected, shape dissemination of the information, thus influencing public perceptions, and on the other hand, Adult Education is one of the fields that are deeply affected by the capabilities of the joint employment of ICTs and, by extension, media in the learning process (Nicolaou, 2019). Today, the main recipients of all these effects of globalization seems to be the members of Generation Z (i.e., people born from 1995 to 2012) (cf. Nicolaou, 2023a).

The study of Generation Z, through many aspects, has gained a great deal of global academic attention in recent years (Nicolaou & Matsiola, 2023; Podara & Kalliri, 2023; Podara, 2021). The research conducted globally has been instrumental in its delineation as well as its baptism as visual generation (cf. Epafras et al., 2020; Tarigan, 2024; Treviño Benavides et al., 2023). Additionally, recent empirical studies and research papers with members of Generation Z have shown that this generational cohort can also be characterized as a sound generation due to the extensive consumption of sound in many forms, such as, for example, podcasts (Döring et al., 2022), or even the wide acceptance of audio content in the context of teaching–learning procedures (Nicolaou & Matsiola, 2023, Nicolaou et al., 2021a, 2021b). Nevertheless, through studying of the existing literature, it may be realized that this particular characterization has not been thoroughly investigated, thus creating a gap in the literature. To be more precise, there are several studies that have been carried out individually among members of Generation Z and/or through multiple approaches, such as, for example, in relation with various music fields and/or podcasts or even radio programs or radio stations (cf. Cicchetti, 2022; Galán-Arribas et al., 2022; Golden, 2019; Saragih, 2016; Xu, 2022); however, there are not many results that could safely lead to the existence of the aforementioned characterization that Generation Z could be considered a sound generation.

Nowadays, it is widely regarded that people rarely listen to the radio anymore (cf. Nu’azzidane & Sa’idah, 2023; Puspitasari et al., 2020), and especially the members of Generation Z that consume almost only visual content (cf. Puspitasari et al., 2020; Smaliukiene et al., 2020). Obviously, these points of view re-adjusted the way of teaching methodologies towards the members of Generation Z in the last decade (Cilliers, 2017; Hilčenko, 2020; O’Neill, 2018; Popova, 2017). Likewise, they also led to the development of new curricula based on the visual content (cf. Galatsopoulou et al., 2022; Matsiola et al., 2022; Nicolaou et al., 2022; O’Neill, 2018), even though the literature states that the audio content noticeably improves the quality of learning and experience (QoL/QoE) in the context of teaching–learning procedures (cf. Kalliris et al., 2011, 2014; Kotsakis et al., 2014;

Kotsakis & Dimoulas, 2022) and digital storytelling methodology (cf. di Furia et al., 2022; Matsiola et al., 2022; Nicolaou, 2023c; Palioura & Dimoulas, 2022; Podara et al., 2021). Apparently, these aspects are not shared by everyone in today's 21st century society and there are researchers that through their interest in exploring the perspectives of audio content within teaching, came to the hypothesis that Generation Z could be characterized as a sound generation (Nicolaou & Matsiola, 2023; Nicolaou et al., 2021a, 2021b). In the context of this paper is to confirm or not this hypothesis; thus, to explore the attitudes, opinions, and behaviors of members of Generation Z in relation to their music and radio programs preferences through an audience survey outlining their ethos.

In conclusion, although this paper follows a somewhat literature approach initially, the aim of the paper is not only to present bibliographic and literature principles and information on Generation Z in relation to media and ICTs to outline their ethos, but to present findings and concluding results through an audience survey that will contribute to the *de novo* delineation of this generational cohort as a sound generation. Similarly, it is to present findings and results that will also contribute to the essential quality of Higher Education and Adult Education, as well as to the media environment and space. Finally, we hope that the rest of the paper will speak and help with radio listening habits and the role of radio in the public sphere so that it can be fruitful for both journalistic profession and educational purposes in the field of media studies, and by extension radio studies.

### **Generation Z: A Brief Literature Review**

The members of Generation Z (Gen-Zers from here on) are considered digital natives and were born in amidst the era of digital technological communication (i.e., Internet and social media age), while currently it is one of the youngest generational cohorts with adult members (Nicolaou, 2023a, 2023b; Podara et al., 2022). Due to the various intertemporal global events and phenomena that have taken place over the past decade (Maijanen et al., 2021; Nicolaou, 2021a; Podara, 2021), the communication code of members of Gen-Zers is characterized as multiple-multimedia and is considered a complete multimedia communication (Nicolaou, 2023b: 9). In addition, they are protective of their privacy and usually use specific social media (such as, for example, Instagram, Snapchat, TikTok, Twitch, and Tinder) or none at all (Nicolaou, 2023a: 206). Furthermore, Gen-Zers seem to be satisfied with the multimedia and hypermedia content that they can discover from and through the Internet and social media (i.e., online audiovisual platforms or even sound platforms) (e.g., via YouTube, Twitch, and Netflix or even through illegal download from torrent sources) (see Evens et al., 2021; Podara et al., 2022; Veneti et al., 2022). Undeniably, this attitude of theirs results in avoiding the use of the traditional television screen, which is common for



members of the previous generational cohorts, and consequently, Gen-Zers reportedly consume more non-default television content (cf. Podara et al., 2022; Podara & Kalliri, 2023; Podara, 2021).

It is a fact that the members of Gen-Zers or otherwise “zoomers”, as they are now called in the literature (Garaganov, 2022; Nicolaou & Matsiola, 2023; Nicolaou, 2023a), although they have the ability for multitasking, they seem to get bored very easily and need further stimulation to keep them from being distracted, especially in the various educational environments (see Cilliers, 2017; Hilčenko, 2020; Nicolaou & Matsiola, 2023; Nicolaou et al., 2021b; Popova, 2017). Additionally, they make empirical use of various social media (see Bourke, 2019) and online audiovisual platforms (e.g., YouTube, Twitch, Netflix, etc.), although they are familiar with the innovations of the modern television era (Nicolaou & Matsiola, 2023: 453). Furthermore, empirical studies and research papers have revealed that members of Gen-Zers seem to have a complete apathy for information received via the media and/or knowledge acquired through pedagogical procedures (see Click & Schwartz, 2018; Ewurum et al., 2024; Gentilviso & Aikat, 2019; Manzoni et al., 2021; Nicolaou, 2021b; Nicolaou & Matsiola, 2023; Veneti et al., 2022), even though they have specific views and empathy on a range of socio-political issues (see Nicolaou & Matsiola, 2023; Shutaleva et al., 2022; Stareček et al. 2020; Töröcsik et al., 2014; Veneti et al., 2022), which appear to align many times with those of members of Generation X (cf. Batu & Tos, 2022, as cited in Nicolaou, 2023b: 10) or even Silent Generation (cf. McCrindle, 2014, as cited in Nicolaou, 2021a: 8). Moreover, members of Gen-Zers are considered self-controlled, more responsible, technology literate, and open-minded without inhibitions that experiment with everything and anything, while self-identified with various sexual orientation and gender identities (see Courtice et al., 2021; Gaidhani et al., 2019; Moskowitz et al., 2022), making them strongly resemble a part of members of Generation X (see also Johnston, 2017; McCrindle, 2014).

Overall, currently it is considered the generational cohort that the audiovisual industry has engaged with the most in today’s 21st century society (cf. Losa et al., 2022; Mady & El-Khoury, 2022; Nicolaou, 2023a, 2023b; Podara, 2021; Sundet, 2021). In short, the most characteristic paradigms of portraying the people who make up Gen-Zers as the mainstream archetype through the audiovisual industry around the world are the foreign television series (a) ‘SKAM’ from NRK1 (2015–2017) which follows the daily life of teenagers at the Hartvig Nissen School, a gymnasium in the wealthy borough of Frogner in West End Oslo, Norway; (b) ‘Elite’ (Spanish: *Élite*; stylized as *ELITĒ*) from Netflix (2018–2024) which follows the daily life of teenage learners in Las Encinas, a fictional elite secondary school in Spain; (c) ‘Sex Education’ from Netflix (2019–2023) which follows the daily life of teenagers at the fictional Moordale Secondary School in United Kingdom (UK); and (d) ‘Control Z’ from Netflix (2020–2022) which follows the daily life of teenage learners at the Colegio Nacional (National School) in Mexico (Nicolaou, 2023a: 207; Nicolaou, 2023b: 10–11).

## Research Methodological Approach

This paper explores the attitudes, opinions, and behaviors of the Greek members of Gen-Zers (i.e., 18 to 28 years old at the time the investigation was conducted) in relation to their music and radio programs preferences through an audience survey. The primary goal was to gather at least 100 questionnaires, which states enough to cover the needs of a study (Comrey & Lee, 2016). Essentially, it is considered an empirical study whose findings and results will contribute to showcasing the relationship of the Greek members of Gen-Zers with the media environment and space. This audience survey is also one of the two sub-surveys (see Nicolaou et al., 2024) of a sub-research project that aims to delineate the sound preferences of adult members of Gen-Zers in Greece with a total of 239 participants (Nicolaou, 2024).

The final sample of this empirical study consists of 114 undergraduate students of Gen-Zers studying at the Department of Communication and Digital Media of the University of Western Macedonia in Kastoria, Greece. Admittedly, it is considered a sample of convenience (i.e., convenience sampling) since the undergraduate students were selected simply because of their accessibility. Likewise, it is also considered a sample of purpose (i.e., purposive sampling) due to the fact all the audience survey's participants should have been members of Gen-Zers. To be more precise, the final sample came from three (3) undergraduate courses in fall semester of the academic year 2023–2024: (a) Principles of Image Capturing and Editing of the 1st semester (234 registered undergraduate students); (b) Radio Journalism of the 5th semester (69 registered undergraduate students); and (c) Online Journalism of the 7th semester (119 registered undergraduate students). The total number of participants in this audience survey is considered acceptable and conceptually valid based on the literature (Comrey & Lee, 2016). More specifically, it represents ~27% of all undergraduate students who were enrolled in the respective courses, a percentage which, based on the literature, covers the needs of a study (i.e.,  $\geq 10\%$ ) (Comrey & Lee, 2016). In addition, it is also suitable for conducting a behavioral study (i.e., 30 to 500 participants) (Roscoe 1975) such as this one. Likewise, it meets the requirements suggested by the Central Limit Theorem (CLT) for the total sample size for a study (i.e.,  $\leq 30$  participants) (Chang et al. 2006; Memon et al. 2020).

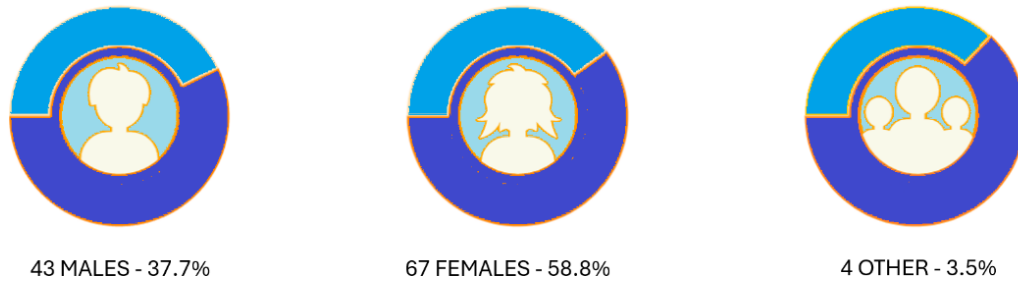
The collection of data was completed through a specially designed digital questionnaire consisting of 26 questions (i.e., 23 closed-ended single-choice with Likert scale or multiple-choice questions and 3 open-ended qualitative questions). More concretely, these questions were divided into the following categories: (a) 3 demographic questions (i.e., gender—male, female, and other; age groups: 18–21 years old, 22–25 years old and 26–28 years old; and place of residence); (b) 7 questions related to radio; (c) 4 questions related to sound platforms and podcasts; and (d) 12 questions related to music (see Nicolaou et al., 2024: 817). Initially, the questionnaire was developed through the online platform EUSurvey (<https://ec.europa.eu/eusurvey/home/welcome>)

which is proposed by the European Commission, adopting the rules of skip logic through 13-section breaks with 32 forced-choices via the associated uniform resource locator address. Afterwards, it was sent to the undergraduate students to be completed at their own convenience via the official mailing list from the central services of the Institution in November 2023. At the beginning, a preface was made regarding the framework of the audience survey stating the purposes, explaining the procedure, emphasizing anonymity, and finally thanking the participants.

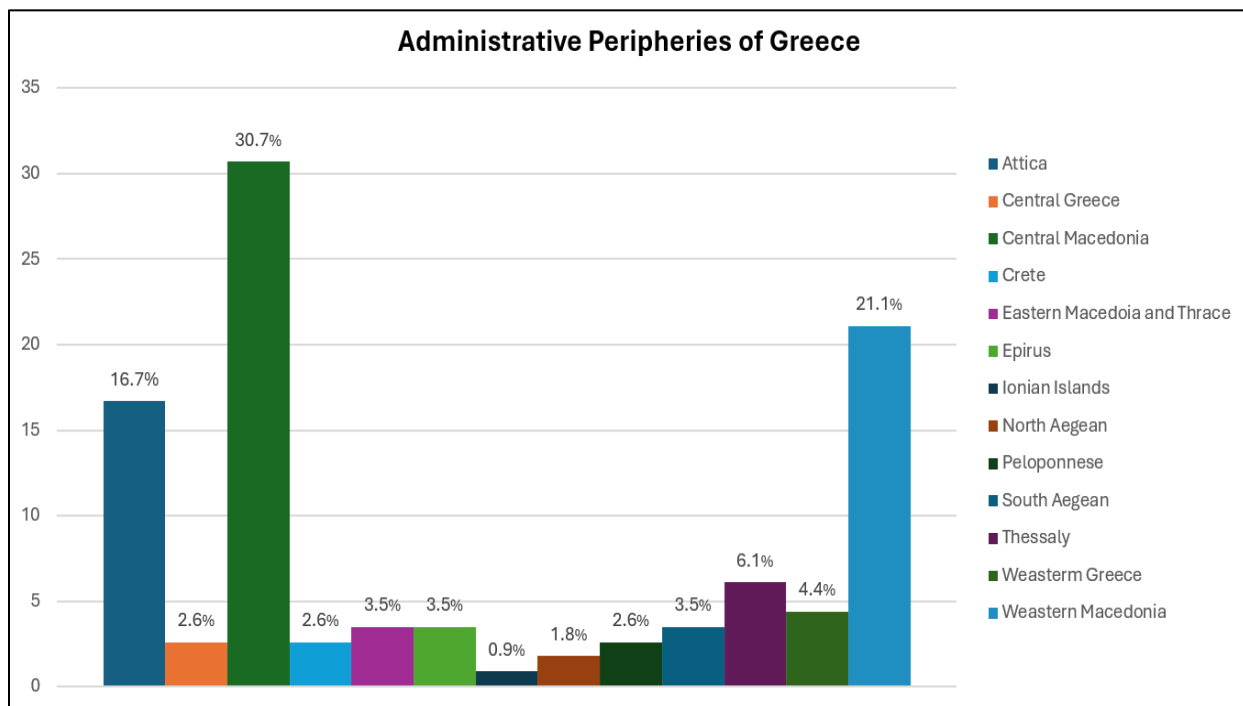
The acquired data were inserted in the IBM Statistical Package for Social Sciences (SPSS) (version 29), as well as through the specialized online platform ‘Survvs.com’. At this point, it should be mentioned that for the purposes of this work, only 9 of the 26 final questions included in the questionnaire (see Nicolaou et al., 2024) were studied, analyzed, and presented in this paper, since these are the one purely related to music and radio programs preferences in relation to radio, podcasts, and music. Thereafter, all findings and results are presented in one (1) table with frequencies, percentages, average values (or mean values; MEAN), and standard deviations (SD), or in graphs or diagram forms (i.e., figures) after analysis through SPSS and ‘Survvs.com’. To summarize, it should also be noted that descriptive statistics were applied for this analysis from and through Internet applications and services, while (a) the Microsoft Excel 365®, (b) the Microsoft PowerPoint 365®, (c) the Microsoft Paint, and (d) the Piktochart were used to visualize the data in interactive infographics, for better understanding (cf. Kalliri & Veglis, 2022; Karypidou & Veglis, 2022; Karypidou et al., 2019).

## **Findings and Results through Discussion**

Preliminary findings and results of the questionnaire survey are shown in the figures and table below. As already mentioned, the final sample of this empirical study is Greek members of Gen-Zers and consists of 114 undergraduate students from the Department of Communication and Digital Media of the University of Western Macedonia in Kastoria, Greece from the fall semester of the academic year 2023–2024. The statistical distribution of the variable of gender of the audience survey’s participants was (a) 43 males with a percentage of 37.7%; (b) 67 females with a percentage of 58.8%; and (c) 4 stated as other with a percentage of 3.5% (Figure 1). Arguably, this finding is considered replicable since it seems to be a common phenomenon that females of members of Gen-Zers generally outperform as a sample in empirical studies conducted in Greece (cf. Matsiola et al., 2019; Nicolaou et al., 2021a; Podara, 2021). Now regarding the origin of the audience survey’s participants, they come from all thirteen (13) administrative peripheries of Greece (Figure 2), thus this may be considered as catholic Greek case study of Gen-Zers.



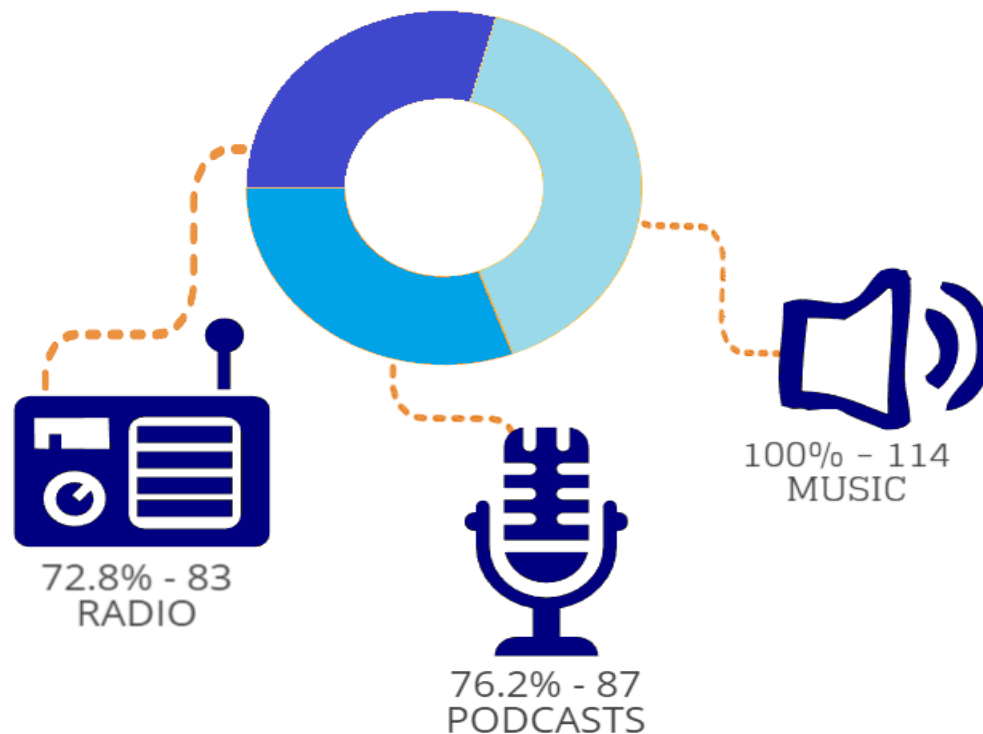
**Figure 1:** The statistical distribution of the variable of gender.



**Figure 2:** Grouped responses in terms of administrative peripheries of Greece from which the final sample originates.

Based on the analysis, the most important finding is that the members of Gen-Zers of our sample listens to the AM/FM radio (i.e., 83 out of 114 undergraduate students with a percentage of 72.8%) (MEAN: 1.84 and SD: 1.283) (Figure 3 and Table 1), confirming previous studies and research papers that state that the radio is a global innovative medium, which is constantly evolving without losing its identity, making it one of the first choices of the audience (Karypidou, 2006; Nicolaou et al., 2021a, 2021b; Nu’azzidane & Sa’idah, 2023; Setiawan et al., 2020; Puspitasari et al., 2020). Furthermore, the literature states that the majority of the members of Gen-Zers reportedly use online audiovisual platforms, sound platforms, and the Internet to listen to music and podcasts or

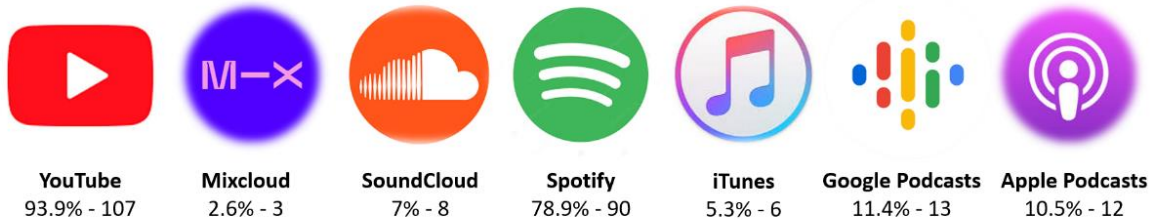
even on-demand radio (cf. Döring et al., 2022; Galán-Arribas et al., 2022; Lissitsa & Laor, 2021; Robert-Agell et al., 2022), which also seems to be confirmed in relation to the grouped responses of our sample about podcasts (i.e., 87 out of 114 undergraduate students with a percentage of 76.3%) (MEAN: 1.56 and SD: 0.872) (Figure 3 and Table 1). Moreover, the findings and results of the present empirical study demonstrated that the young adults of Gen-Zers also consume audio content through various sound platforms, such as, for example, YouTube with (i.e., 107 out of 114 undergraduate students with a percentage of 93.3%) (Figure 4), Spotify (i.e., 90 out of 114 undergraduate students with a percentage of 78.9%) (Figure 4), and Google Podcasts (i.e., 13 out of 114 undergraduate students with a percentage of 11.4%) (Figure 4), used to listen to music (i.e., all undergraduate students surveyed with a percentage of 100%) (MEAN: 3.60 and SD: 1.355) (Table 1) and/or podcasts (i.e., 87 out of 114 undergraduate students with a percentage of 76.3%) (MEAN: 1.56 and SD: 0.872) (Figure 3 and Table 1). Unquestionably, these findings and results reaffirm again previous findings and results from recent empirical studies and research papers that showed that this generational cohort reportedly uses specific social media (in this particular case the sound platforms) (see Evens et al., 2021; Galán-Arribas et al., 2022; Golden, 2019; Podara et al., 2022; Veneti et al., 2022). Similarly, they also confirm that Gen-Zers could also be characterized as a sound generation (cf. Döring et al., 2022; Nicolaou & Matsiola, 2023; Nicolaou et al., 2021a, 2021b).



**Figure 3:** Grouped responses in relation to radio, podcasts, and music.

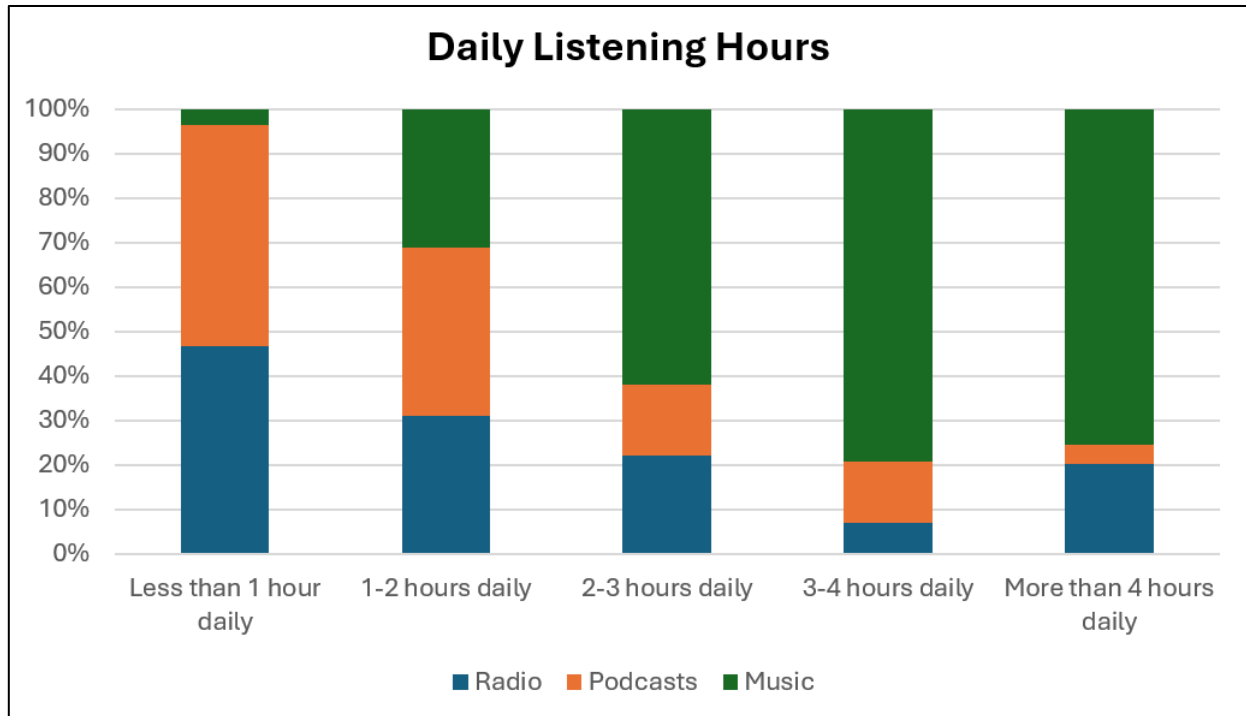
**Table 1:** Grouped responses of the sample regarding the frequency of use of radio, podcasts, and music.

	Sample listening	Sample not listening	Less than 1 hour daily	1-2 hours daily	2-3 hours daily	3-4 hours daily	More than 4 hours daily	MEAN	SD
Radio	83 - 72.8%	31 - 27.2%	47 - 56.6%	21 - 25.3%	5 - 6%	1 - 1.2%	9 - 10.8%	1.84	1.283
Podcasts	87 - 76.3%	27 - 23.7%	52 - 59.8%	27 - 31%	4 - 4.6%	2 - 2.3%	2 - 2.3%	1.56	0.872
Music	114 - 100%	-	5 - 4.4%	29 - 25.4%	19 - 16.7%	15 - 13.2%	46 - 40.4%	3.60	1.355



**Figure 4:** Grouped responses in relation to the sound platforms most used by the sample.

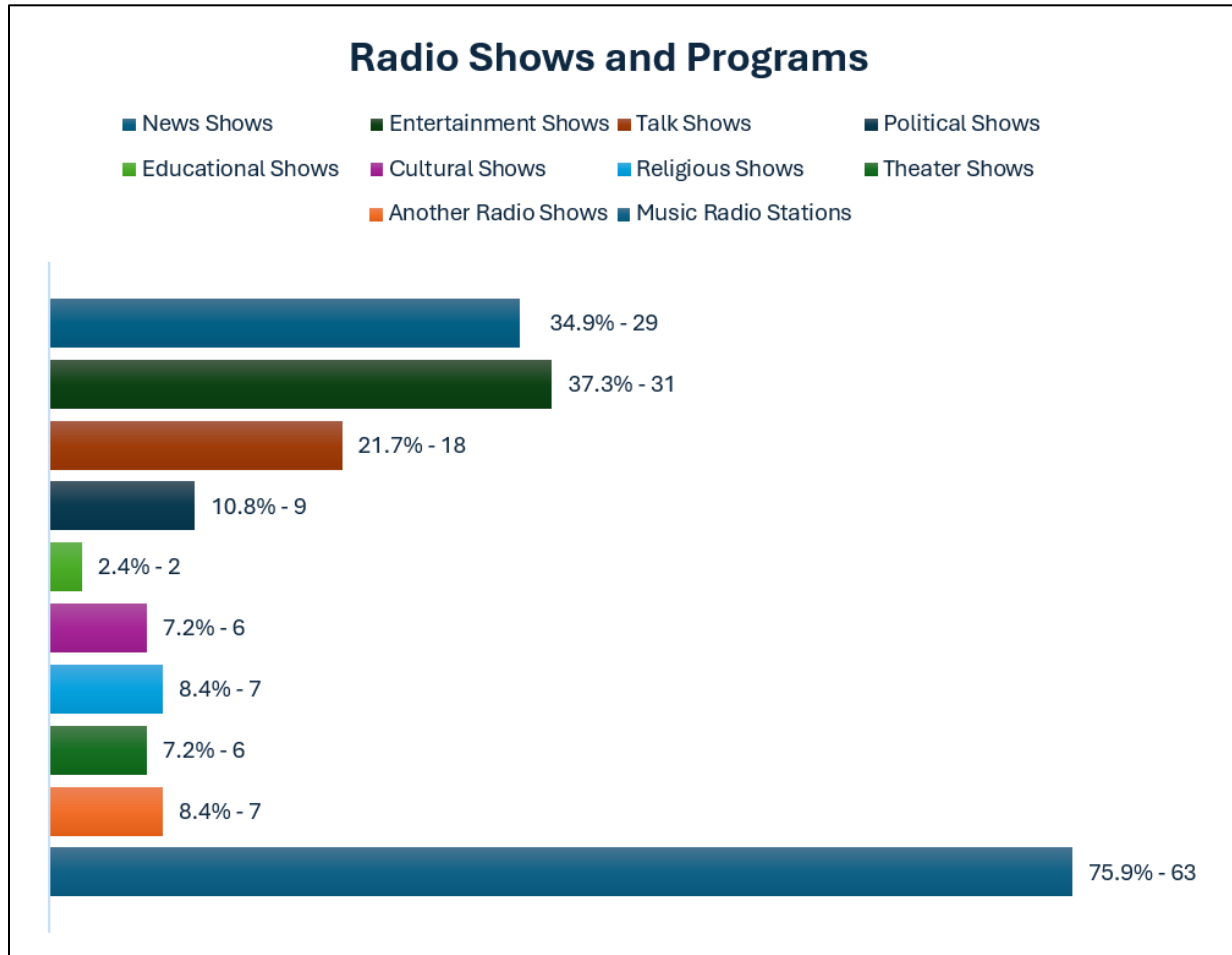
Another interesting finding is the research data’s visualization from the daily hours of listening to radio, podcasts, and music by the Greek participants of Gen-Zers, which follow a somewhat inversely proportional path (Figure 5). More concretely, analysis has shown that the higher scores are (a) 56.6% of the total number of respondents who tend to listen to the radio less than 1 hour daily (i.e., 47 out of 83 undergraduate students) (MEAN: 1.84 and SD: 1.283) (Table 1 and Figure 5); (b) 59.8% of the total number of respondents who also tend to listen to the podcasts less than 1 hour daily (i.e., 52 out of 87 undergraduate students) (MEAN: 1.56 and SD: 0.872) (Table 1 and Figure 5); and (c) 40.4% of the total number of respondents who listen to music more than 4 hour daily (i.e., 46 out of 114 undergraduate students) (MEAN: 3.60 and SD: 1.355) (Table 1 and Figure 5). Obviously, these findings should be taken into consideration by senior management in the radio media sector in order to use them for a study on the reorganize radio and/or for the development of a more effective communication strategy (cf. Asy’ari 2018; Kalliris et al., 2019; Nu’azzidane and Sa’idah 2023; Pandusaputri et al. 2024; Pilitsidou et al. 2019).



**Figure 5:** Grouped responses of the sample regarding the frequency of daily listening hours for radio, podcasts, and music.

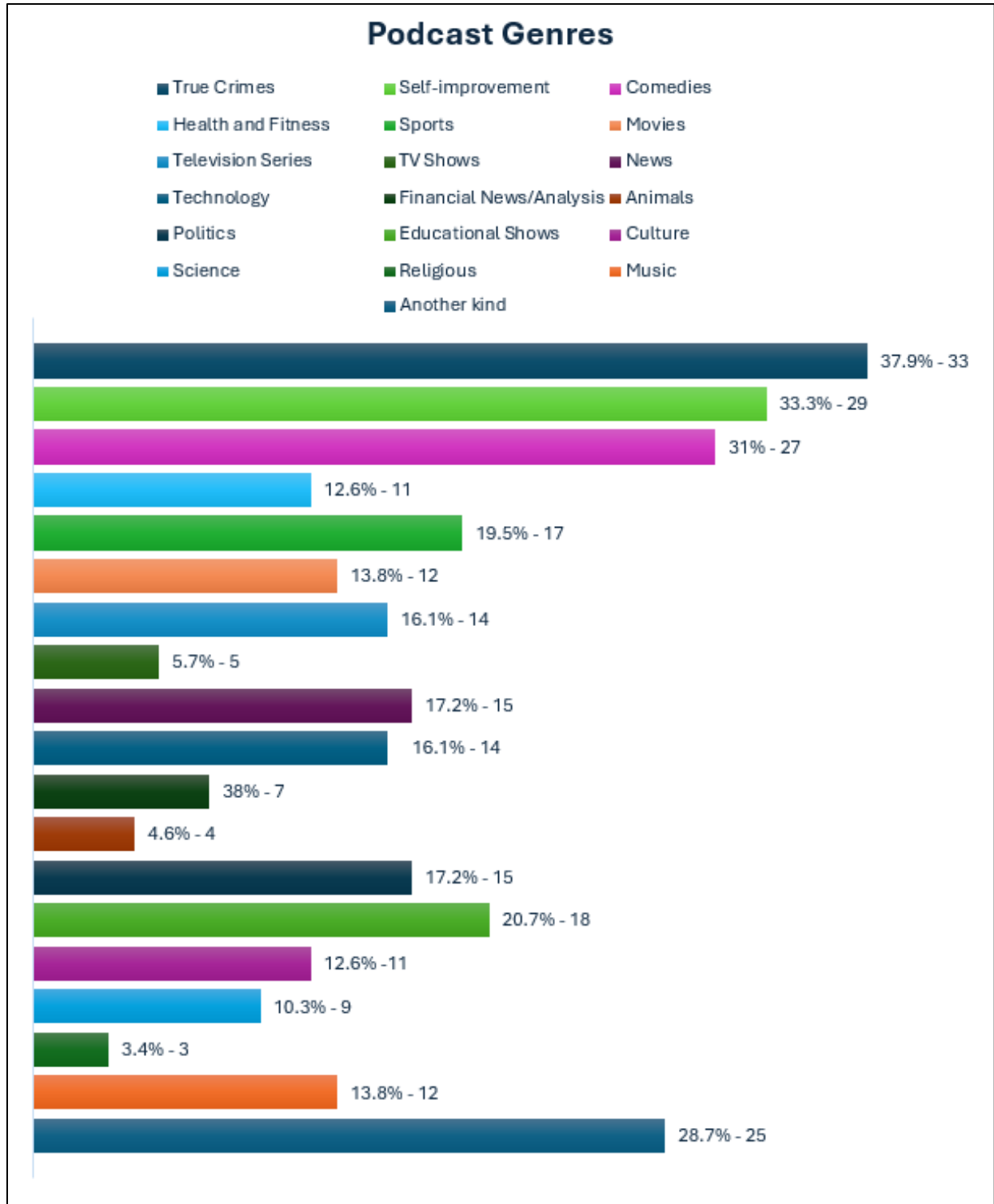
Additionally, in this analysis, members of this generational cohort are also observed to listen to specific radio stations or even types of radio shows and programs that mainly reproduce music, and more precisely more than half of the participants who involved in the audience survey (i.e., 63 out of 114 undergraduate students with a percentage of 75.9%) (Figure 6), confirming the findings and results of a similar empirical study involving members of Gen-Zers (cf. Puspitasari et al. 2020). Likewise, members of this generational cohort actively listen podcasts with an emphasis on specific themes, such as, for example, true crime (i.e., 33 out of 87 undergraduate students with a percentage of 37.9%) (Figure 7), self-improvement (i.e., 29 out of 87 undergraduate students with a percentage of 29%) (Figure 7), and comedies (i.e., 27 out of 87 undergraduate students with a percentage of 31%) (Figure 7). Overall, these podcasts-related findings and results (Figure 7 and Table 1) align with or confirm the findings and results of related or similar empirical studies that investigated the impact of podcasts on members of Gen-Zers (see Döring et al., 2022; Galán-Arribas et al., 2022; Ge, 2023). Briefly, to summarize, the findings regarding both the podcast genres (Figure 7) and the types of radio shows and programs (Figure 6) that reek members of Gen-Zers tend to listen to, should be taken very seriously by senior management in the radio media sector. Essentially, they will help them to substantially adjust their program schedules and/or

content of radio shows and programs in the current trends (see also Crider, 2023; Galán-Arribas et al., 2022; Hirschmeier, & Beule, 2019; Nu’azzidane & Sa’idah, 2023; Pilitsidou et al., 2019; Robert-Agell et al., 2022).



**Figure 6:** Grouped responses in terms of types of radio shows and programs.





**Figure 7:** Grouped responses in terms of podcast genres.

Summing up, the analysis showed as a final finding that Greek members of Gen-Zers seem to prefer listening to online or alternative audio content from and through sound platforms and the Internet instead of audio content through AM/FM radio. Undoubtedly, this finding is very interesting due to the fact that it confirms the related recent research and literature reviews that have indicated that members of Gen-Zers appear to heavily use specific sound platforms as a part of a broader media listening experience with audio content designed and produced by Gen-Zers for Gen-Zers (Pluskota, 2015; Robert-Agell et al., 2022). In short, the media environment and space should definitely consider all these above findings and results seriously, with a view to reorganizing or decentralizing radio for its future form (see also Crider, 2023; Hirschmeier & Beule, 2019; Magnaye & Tarusan, 2023; Pilitsidou et al., 2019).

In closing, it should also be mentioned that the findings and results obtained from the participants of members of Gen-Zers in this audience survey in relation to the types of radio shows and programs (Figure 6) and podcast genres (Figure 7), also seem to confirm the existing literature on the apathy of members of the under investigation generational cohort to media information (cf. Click & Schwartz, 2018; Gentilviso & Aikat, 2019; Nicolaou & Matsiola, 2023; Veneti et al., 2022), which should be taken into account by educators of Higher Education and Adult Education, and in particular those of field of media studies.

## **Conclusions**

This paper explored audio content in relation to Gen-Zers, where its members were born in the era of digital technological communication amid intertemporal global events and phenomena (Maijanen et al., 2021; Nicolaou, 2021a; Podara, 2021). The inspiration for this paper came from previous findings and results from recent empirical studies and research papers which have shown that this generational cohort can also be characterized as a sound generation (cf. Döring et al., 2022; Nicolaou & Matsiola, 2023; Nicolaou et al., 2021a, 2021b).

In summary, the findings and results of the audience survey showed as a final conclusion that our initial hypothesis in this paper is confirmed, thus opening a new chapter in the literature regarding the genealogical characteristics, habits, and ethos of members of Gen-Zers. Additionally, these findings and results are also aligned with the findings and results of the sub-survey which has been mentioned in Research Methodological Approach Section (i.e., Nicolaou et al. 2024), thereby further contributing to the development of an overall delineation of the genealogical characteristics, habits, and ethos of Greek members of Gen-Zers regarding their music and radio programs preferences (i.e., sound preferences) (see Nicolaou 2024); however, further investigation is required. At the same time, they also verify our previous hypotheses and conclusions about this generational cohort that had emerged in our previous empirical studies and research papers

regarding audio-based teaching with members of Gen-Zers from Higher Education and Adult Education (cf. Matsiola et al., 2019; Nicolaou & Matsiola, 2023; Nicolaou et al., 2021a, 2021b).

In recapitulating, this paper presents findings and results that could be used for the essential quality, on the one hand, of the journalistic profession and, on the other hand, of the pedagogical knowledge provided from and through the use of audio content, because Gen-Zers is considered an important issue for both Media and Education (cf. Cilliers, 2017; Nicolaou & Matsiola, 2023; Podara, 2021). Likewise, they could be taken into account in future educational changes and the development of adult educational programs and curriculums in general (see also Nicolaou et al., 2022), which will concern the Gen-Zers in Higher Education and Adult Education.

In conclusion, the findings and results from this empirical study, unfortunately, cannot allow their generalization to the population, due to certain limitations imposed such as, for example, the sampling method followed (i.e., convenience sampling) and, by extension, the small number of the final sample; however, they lay the fundamental foundations for outlining the case of the Greece based on Gen-Zers, and by extension the ethos of Greek Gen-Zers in relation to the media environment and space from and through music and radio.

## References

- Asy'ari, N. A. S. (2018). *The Strategy of Radio Convergence for Facing New Media Era*. In Proceedings of the 1st International Conference on Emerging Media, and Social Science. EAI.
- Batu, M., & Tos, O. (2022). Kültürel Değişim Temelinde X ve Z Kuşağının Ebeveynlik Algısı: Zmet Tekniği Temelinde Bir Analiz. *Akdeniz Üniversitesi İletişim Fakültesi Dergisi*, (38), 194–217.
- Bourke, B. (2019). *Connecting With Generation Z Through Social Media*. In Preparing the Higher Education Space for Gen Z (pp. 124–147). IGI Global.
- Chang, H.-J., Huang, K.-C., & Wu, C.-H. (2006). Determination of Sample Size in Using Central Limit Theorem for Weibull Distribution. *Information and Management Sciences*, 17(3), 31–46.
- Cicchetti, G. (2022). *Rock On: The State of Rock Music Among Generation Z*. Honors College Theses, 352.
- Cilliers, E. J. (2017). The Challenge of Teaching Generation Z. *PEOPLE International Journal of Social Sciences*, 3(1), 188–198.
- Click, K., & Schwartz, N. (2018). Trending Now: News Habits of Generation Z. In SSRN Electronic Journal. Elsevier BV.
- Comrey, A. L., & Lee, H. B. (2016). *A First Course in Factor Analysis (2nd ed.)*. Psychology Press.
- Courtice, E. L., Shaughnessy, K., Blom, K., Asrat, Y., Daneback, K., Döring, N., Grov, C., & Byers, E. S. (2021). Young Adults' Qualitative Self-Reports of Their Outcomes of Online Sexual Activities. *European Journal of Investigation in Health, Psychology and Education*, 11(2), 303–320.
- Crider, D. (2023). A Public Sphere, On-Demand: An Assessment of Local Podcasting. *Popular Communication*, 21(1), 43–56.

- di Furia, M., Nicoli, N., Akyar, Ö. Y., & Rossi, M. (2022). *Storytelling Practice in Sectors of Education, Psychology, Communication, Marketing: A Narrative Review*. In Proceedings of the 1st International Conference on Psychology, Learning, Technology: Vol 1606. Communications in Computer and Information Science (pp. 41–62). Springer.
- Dimoulas, C., Veglis, A., & Kalliris, G. (2015). *Audiovisual Hypermedia in the Semantic Web*. In Encyclopedia of Information Science and Technology (3rd ed., pp. 7594–7604). IGI Global.
- Dimoulas, C. A., Veglis, A. A., & Kalliris, G. (2019). *Semantically Enhanced Authoring of Shared Media*. In Advanced Methodologies and Technologies in Media and Communications (pp. 277–289). IGI Global.
- Döring, U., Müller, B., Rohr, S., Ruhrmann, J., & Schäfer, M. (2022). Listen and Read: The Battle for Attention: A New Report About Key Audience Behaviour in the Age of eBooks, Audiobooks and Podcasts. *Publishing Research Quarterly*, 38(1), 40–52.
- Epafras, L., Kaunang, H., Jemali, M., & Setyono, V. (2020). *Transitional Religiosity: The Religion of Generation Z*. In Proceedings of the 3rd International Symposium on Religious Life (pp. 247–257). EAI.
- Evens, T., Henderickx, A., & De Marez, L. (2021). Generation Stream: The Audiovisual Repertoire of Teenagers. *Journal of Broadcasting & Electronic Media*, 65(2), 185–204.
- Ewurum, N., Obi-Aso, N., & Emoh, F. (2024). Predictors of Student Apathy Amongst Generation Z: Excavating the Roots. *Journal of African Real Estate Research*, 8(2), 1–20.
- Gaidhani, S., Arora, L., & Sharma, B. K. (2019). Understanding the Attitude of Generation Z Towards Workplace. *International Journal of Management, Technology and Engineering*, 9(1), 2804–2812.
- Galatsopoulou, F., Kenterelidou, C., Kotsakis, R., & Matsiola, M. (2022). Examining Students’ Perceptions Towards Video-Based and Video-Assisted Active Learning Scenarios in Journalism and Communication Courses. *Education Sciences*, 12(2), 74.
- Galán-Arribas, R., Herrero-Gutiérrez, F. J., & Frutos-Esteban, F. J. (2022). Podcasting: The Radio of Generation Z in Spain. *Social Sciences*, 11(6), 252.
- Garaganov, A. V. (2022). *Youth Needs Generations: Millennials, Zoomers, Alphas*. Rivero.
- Ge, S. (2023). *An Empirical Study on the Factors Influencing Purchase Intention of Brand Podcast Consumers of Generation Z*. In 3rd International Conference on Economic Development and Business Culture (pp. 724–730). Atlantis Press.
- Gentilviso, C., & Aikat, D. (2019). *Embracing the Visual, Verbal, and Viral Media: How Post-Millennial Consumption Habits are Reshaping the News*. In Mediated Millennials (pp. 147–171). Emerald.
- Golden, A. (2019). Generation Z Re-Defining the Business of Music. *Music Business Journal*, 13, 6–8.
- Hilčenko, S. (2020). How Generation “Z” Learns Better?. *European Journal of Social Science Education and Research*, 7(1), 01–16.
- Hirschmeier, S., & Beule, V. (2019). Characteristics of the Classic Radio Experience Perceived by Young Listeners and Design Implications for Their Digital Transformation. *Journal of Radio & Audio Media*, 28(2), 231–253.

- İplikçi, H. G., & Batu, M., (2023). *New Media Disorders: A Different Approach to New Generation on Media*. In *Current Deates on Social Sciences 15* (pp. 121–133). Bidge Yayinevi.
- Johnston, T. R. (2017). Two Steps Forward, One Step Back: The Story of LGBT Gen Xers. *Generations Journal, 41*(3), 93–98.
- Kalliri, E., & Veglis, A. (2022). Psychological Practices Applied by Media Organizations to Data Visualizations in Relation to the Environment. *Open Journal of Animation, Film and Interactive Media in Education and Culture, 3*(3).
- Kalliris, G., Dimoulas, C. A., Matsiola, M. (2019). *Media Management, Sound Editing and Mixing*. In *Foundations in Sound Design for Linear Media: A Multidisciplinary Approach* (1st ed., pp. 82-112). Routledge.
- Kalliris, G., Dimoulas, C., Veglis, A., & Matsiola, M. (2011). *Investigating Quality of Experience and Learning (QoE & QoL) of Audiovisual Content Broadcasting to Learners over IP Networks*. In 2011 IEEE Symposium on Computers and Communications (pp. 836–841). IEEE.
- Kalliris, G., Matsiola, M., Dimoulas, C., & Veglis, A. (2014). Emotional Aspects and Quality of Experience for Multifactor Evaluation of Audiovisual Content. *International Journal of Monitoring and Surveillance Technologies Research, 2*(4), 40–61.
- Kotsakis, R., & Dimoulas, C. (2022). Extending Radio Broadcasting Semantics through Adaptive Audio Segmentation Automations. *Knowledge, 2*(3), 347–364.
- Kotsakis, R., Dimoulas, C. A., Kalliris, G., & Veglis, A. (2014). *Emotional Descriptors and Quality of Experience (QoE) Metrics in Evaluating Mediated Learning*. In 5th International Conference on Information, Intelligence, Systems and Applications (pp. 232–237). IEEE.
- Karypidou, C. (2006). *History of Radio. History, Organization and Operation of Radio Thessaloniki* [Unpublished Bachelor's Thesis]. Aristotle University of Thessaloniki.
- Karypidou, C., & Veglis, A. (2022). *Visualization Tools for Producing Environmental Data Journalism Articles*. Annual Greek-Speaking Scientific Conference of Communication Laboratories, 1(1), 54–62.
- Karypidou, C., Bratsas, C., & Veglis, A. (2019). Visualization and Interactivity in Data Journalism Projects. *Strategy & Development Review, 9*, 44–60.
- Lissitsa, S., & Laor, T. (2021). Baby Boomers, Generation X and Generation Y: Identifying Generational Differences in Effects of Personality Traits in On-Demand Radio Use. *Technology in Society, 64*, 101526.
- Loza, S., Vana, R., & Padilla, L. (2022). *What's so Elite?: A Critical Discourse Analysis of Mediatized Code-Switching in the Netflix Series Elite*. In *Communicative Spaces in Bilingual Contexts: Discourses, Synergies and Counterflows in Spanish and English* (1st ed., pp. 129–142). Routledge.
- Mady, C., & El-Khoury, J. R. (2022). Local Absence, Global Supply: Lebanese Youth, Sexual Education, and a Netflix Series. *Sex Education, 24*(1), 92–107.
- Magnaye, R. C. F., & Tarusan. M. A. E. (2023). The Old and The New: Radio and Social Media Convergence. *International Journal of Communication and Media Science, 10*(2) 44–62.

- Maijanen, P., Nicoli, N., & Georgiades, S. (2021). In Search of New Openings and Actionable Knowledge: Coping with Emerging Phenomena in the Media Business. *Journal of Media Business Studies*, 18(1), 1–5.
- Manzoni, B., Caporarello, L., Cirulli, F., Magni, F. (2021). *The Preferred Learning Styles of Generation Z: Do They Differ from the Ones of Previous Generations?*. In Lecture Notes in Information Systems and Organisation: Vol. 37. Digital Transformation and Human Behavior (pp. 55–67). Springer.
- Matsiola, M., Spiliopoulos, P., Kotsakis, R., Nicolaou, C., & Podara, A. (2019). Technology-Enhanced Learning in Audiovisual Education: The Case of Radio Journalism Course Design. *Education Sciences*, 9(1), 62.
- Matsiola, M., Spiliopoulos, P., & Tsigilis, N. (2022). Digital Storytelling in Sports Narrations: Employing Audiovisual Tools in Sport Journalism Higher Education Course. *Education Sciences*, 12(1), 51.
- Mbeke, P. O., Ugangu, W., & Okello-Orlale, R. (2010). *The Media We Want: The Kenya Media Vulnerabilities Study*. Friedrich Ebert Stiftung.
- McCrindle, M. (2014). *The ABC of XYZ: Understanding the Global Generations (3rd ed.)*. McCrindle.
- Memon, M. A., Ting, H., Cheah, J.-H., Thurasamy, R., Chuah, F., & Cham, T. H. (2020). Sample Size for Survey Research: Review and Recommendations. *Journal of Applied Structural Equation Modeling*, 4(2), i–xx.
- Moskowitz, D. A., Rendina, H. J., Alvarado Avila, A., & Mustanski, B. (2022). Demographic and Social Factors Impacting Coming Out as a Sexual Minority Among Generation-Z Teenage Boys. *Psychology of Sexual Orientation and Gender Diversity*, 9(2), 179–189.
- Nicolaou, C. (2019). *The Use of Audiovisual Media in Adult Education*. In Proceedings of the 5th International Scientific Conference of the Institute of Humanitarian and Social Sciences: Vol A. Interdisciplinarity as a Cognitive, Educational and Social Challenge (pp. 155–163). IAKE.
- Nicolaou, C. (2021a). Media Trends and Prospects in Educational Activities and Techniques for Online Learning and Teaching through Television Content: Technological and Digital Socio-Cultural Environment, Generations, and Audiovisual Media Communications in Education. *Education Sciences*, 11(11), 685.
- Nicolaou, C (2021b, July 9–11). *The Description of the Profile and the Professional Identity of Greek and Cypriot Adult Educators in the Era of the Triptych Dimension* [Conference presentation]. 7th International Scientific Conference of the Institute of Humanitarian and Social Sciences on Social Vulnerability and Development, Heraklion, Crete, Greece.
- Nicolaou, C. (2022). *Information and Communications Technologies Through Technology-Enhanced Learning in Adult Education: The Re-Approach of the Adult Educator and the Adult Learners*. In Technology Training for Educators From Past to Present (pp. 73–94). IGI Global.
- Nicolaou, C. (2023a). *Generational Identity from and through the Media and Entertainment Landscape: Socio-Cultural Environment of X, Y, and Z Generational Cohorts*. In Handbook of Research on Diversity and Gender Differences in Spiritual Experiences (pp. 198–217). IGI Global.

- Nicolaou, C. (2023b). Generations and Branded Content from and through the Internet and Social Media: Modern Communication Strategic Techniques and Practices for Brand Sustainability—The Greek Case Study of LACTA Chocolate. *Sustainability*, 15(1), 584.
- Nicolaou, C. (2023c). *The Secret Power of Digital Storytelling Methodology: Technology-Enhanced Learning Utilizing Audiovisual Educational Content*. In *Enhancing Education Through Multidisciplinary Film Teaching Methodologies* (pp. 235–246). IGI Global.
- Nicolaou, C. (2024, May 16–19). *Defining the Sound Preferences of Generation Z* [Conference presentation]. 10th International Scientific Conference of the Institute of Humanitarian and Social Sciences on Social and Educational Adaptability, Heraklion, Crete, Greece.
- Nicolaou, C., & Matsiola, M. (2023). *Getting to know Generation Z Again through Audio-based Teaching*. In *Proceedings of the 9th International Scientific Conference of the Institute of Humanitarian and Social Sciences: Vol A. Citizen, Education and Political Participation* (pp. 451–459). IAKE.
- Nicolaou, C., Matsiola, M., & Kalliris, G. (2019). Technology-Enhanced Learning and Teaching Methodologies through Audiovisual Media. *Education Sciences*, 9(3), 196.
- Nicolaou, C., Matsiola, M., & Kalliris, G. (2022). The Challenge of an Interactive Audiovisual-Supported Lesson Plan: Information and Communications Technologies (ICTs) in Adult Education. *Education Sciences*, 12(11), 836.
- Nicolaou, C., Matsiola, M., Dimoulas, C. A., & Kalliris, G. (2024). Discovering the Radio and Music Preferences of Generation Z: An Empirical Greek Case from and through the Internet. *Journalism and Media*, 5(3), 814–845.
- Nicolaou, C., Matsiola, M., Karypidou, C., Podara, A., Kotsakis, R., & Kalliris, G. (2021a). Media Studies, Audiovisual Media Communications, and Generations: The Case of Budding Journalists in Radio Courses in Greece. *Journalism and Media*, 2(2), 155–192.
- Nicolaou, C., Podara, A., & Karypidou, C. (2021b). *Audiovisual Media in Education and Generation Z: Application of Audiovisual Media Theory in Education with an Emphasis on Radio*. In *Proceedings of the 6th International Scientific Conference of the Institute of Humanitarian and Social Sciences: Vol A. Communication, Information, Awareness and Education in Late Modernity* (pp. 295–303). IAKE.
- Nu’azzidane, B., & Sa’idah, Z. (2023). Good Morning Young People: Geronimo Fm Radio’s Efforts To Maintain Existence in Generation Z. *Professional: Jurnal Komunikasi Dan Administrasi Publik*, 10(2), 881–888.
- O’Neill, S. A. (2019). *Developing Leadership Capacities with Generation Z Students in Higher Music Education*. In *Leadership and Musician Development in Higher Music Education* (1st ed., pp. 87–102). Routledge.
- Palioura, M., & Dimoulas, C. (2022). Digital Storytelling in Education: A Transmedia Integration Approach for the Non-Developers. *Education Sciences*, 12(8), 559.
- Pandusaputri, N. A., Mokodompit, R. B. R., & Irwansyah, I. (2024). Peminat Radio dan Podcast Kalangan Generasi Z Saat Berkendara. *Jurnal Ilmu Komunikasi Dan Media Sosial*, 4(1), 179–192.

- Pilitsidou, Z., Tsigilis, N., & Kalliris, G. (2019). Radio Stations and Audience Communication: Social Media Utilization and Listeners Interaction. *Issues in Social Science*, 7(1), 23–32.
- Pluskota, J. P. (2015). The Perfect Technology: Radio and Mobility. *Journal of Radio & Audio Media*, 22(2), 325–336.
- Podara, A. N. (2021). *Internet, Audiovisual Content and New Media: Television and Watching Habits of Generation Z* [Doctoral dissertation, Aristotle University of Thessaloniki]. National Archive of PhD Theses.
- Podara, A., & Kalliri, E. (2023). Defining TV Watching Experience: Psycho-Social Factors and Screen Culture of Generation Z. *Envisioning the Future of Communication*, 1(1), 103–112.
- Podara, A., Giomelakis, D., Nicolaou, C., Matsiola, M., & Kotsakis, R. (2021). Digital Storytelling in Cultural Heritage: Audience Engagement in the Interactive Documentary New Life. *Sustainability*, 13(3), 1193.
- Podara, A., Matsiola, M., Nicolaou, C., Maniou, T. A., & Kalliris, G. (2022). Transformation of Television Viewing Practices in Greece: Generation Z and Audio-Visual Content. *Journal of Digital Media & Policy*, 13(2), 157–179.
- Popova, S. (2017). Teaching Generation Z: Methodological Problems and Their Possible Solutions. *Training, Language and Culture*, 1(4), 25–38.
- Puspitasari, E. E., Yuniati, U., & Billah, Y. M. (2020). The Existence of Bandung Private Radio through Survey of Generation Z Needs. *Medio*, 1(2), 59–67.
- Robert-Agell, F., Justel-Vazquez, S., & Bonet, M. (2022). No Habit, No Listening. Radio and Generation Z: Snapshot of the Audience Data and the Business Strategy to Connect with it. *Profesional de la Información*, 31(5).
- Roscoe, J. T. (1975). *Fundamental Research Statistics for the Behavioral Sciences (2nd ed.)*. Holt Rinehart and Winston.
- Saragih, H. S. (2016). *Music for the Generation-Z, Quo Vadis*. In 1st UPI Global Conference on Business, Management and Entrepreneurship: Part 1. Advances in Economics, Business and Management Research Volume 15 (pp. 844–848). Atlantis Press.
- Schiffrin, A. (2019). In the Service of Power: Media Capture and the Treat to Democracy. *Anali Hrvatskog Politološkog Društva: Časopis za Politologiju*, 16(1), 229–234.
- Setiawan, H. A., Gerungan, G., & Yogatama, A. (2020). *Uses and Gratification of Community Radio: A Case Study of Petra Campus Radio*. In 4th International Seminar of Research Month (pp. 410–418). NST Proceedings.
- Shutaleva, A., Kuzminykh, E., & Novgorodtseva, A. (2023). Youth Practices of Reading as a Form of Life and the Digital World. *Societies*, 13(7), 165.
- Shutaleva, A., Martyushev, N., Nikonova, Z., Savchenko, I., Abramova, S., Lubimova, V., & Novgorodtseva, A. (2022). Environmental Behavior of Youth and Sustainable Development. *Sustainability*, 14(1), 250.



- Smaliukiene, R., Kocai, E., & Tamuleviciute, A. (2020). Generation Z and Consumption: How Communication Environment Shapes Youth Choices. *Media Studies*, 11(22), 24–45.
- Stack, M., & Boler, M. (2007). Media and Policy in Education. *Policy Futures in Education*, 5(1), 1–16.
- Stareček, A., Caganova, D., Kubisova, E., Babel'ová, G., Fabian, F., & Chlpekov, A. (2020). *The Importance of A. Generation Z Personality and Gender Diversity in the Development of Managerial Skills*. In 18th International Conference on Emerging eLearning Technologies and Applications (pp. 658–664). IEEE.
- Sundet, V. S. (2021). 'Youthification' of Drama through Real-Time Storytelling: A Production Study of Blank and the Legacy of SKAM. *Critical Studies in Television*, 16(2), 145–162.
- Tarigan, A. S. (2024). The Effectiveness of the Role of Social Media in Premarital Education for Generation Z in Purwakarta Regency, Indonesia. *Arkus*, 10(1), 508–511.
- Töröcsik, M., Szűcs, K., & Kehl, D. (2014). How Generations Think: Research on Generation z. *Acta Universitatis Sapientiae, Communicatio*, 1(1), 23–45.
- Treviño Benavides, T. B., Alcorta Castro, A. T., Garza Marichalar, S. A., Peña Cisneros, M., & Baker Suárez, E. C. (2023). *Understanding Generation Z and Social Media Addiction*. In *Social Media Addiction in Generation Z Consumers: Implications for Business and Marketing* (pp. 39–44). Springer.
- Veneti, A., & Poulakidakos, S., & Minotakis, A. (2022). Research Report: Gen Z Voice On. ETERON. <https://eteron.org/wp-content/uploads/2022/03/ENGLISH-ETERON-Research-GEN-Z-Digital-28-3-2022.pdf>
- Xu, Y. (2022). *Exploring Ways to Make Generation Z like Classical Music Better*. In *Proceedings of the 2021 International Conference on Social Development and Media Communication* (pp. 1514–1519). Atlantis Press.

# **Infotainment and the Pandemic: A comparative content analysis of the infotainment during consecutive waves of the COVID-19 pandemic**

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## **Abstract**

Media coverage of health issues tends to have a significant impact on health policies by directing public attention to some issues and not others. News coverage of public health cannot remain unaffected dramatisation of the news, while the Media are used to present a health issue in a way that is both entertaining and engaging. The purpose of the current research is to determine whether the infotainment practices observed on the news bulletins under research became more intense in the third wave of the pandemic compared to the second. More specifically, it highlights specific technical aspects of dramatisation (music and sound effects, metaphors and evaluative adjectives) as well as negativity and it crosstabulates them with the news period. The research method implemented is quantitative content analysis considering the news item as unit of analysis. The main finding of the research is that in the Greek case, news dramatization was found to be less intense in the third wave of the pandemic, despite the rise of deaths.

**Keywords:** pandemics, infotainment, news dramatisation, content analysis.

## **Introduction**

The coronavirus pandemic began February 26, 2019 in the city of Wuhan, China. In Greece, it began to spread from February 26, 2020 onwards. The initial COVID-19 outbreak spread rapidly, and on March 11, 2020 the International Health Organization declared it as a pandemic (Pleios & Poulakidakos 2021: 36). The pandemic, as an event that affected society in all aspects, is particularly mediated. In other words, people form a “synthetic experience” about the pandemic, which is a combination of their personal experience and the information and images disseminated by the media, while at the same time “the aesthetics of journalistic coverage (dramatisation, personalization, fragmentation) affects the way recipients perceive the health crisis” (Demertzis & Eyerman, 2020: 430).

Media coverage of public health issues, so in this case the COVID-19 pandemic, is important as it has a direct or indirect impact on individuals’ relative behavior (Thoma et al. 2021: 115). The coverage of public health issues can’t remain unaffected by the news dramatisation and the attempt

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to present a health issue in a way that is both entertaining and attractive (Minotakis, Vasilakopoulou & Pleios 2021: 145). Dramatisation is considered to be the most important element of infotainment (“pleasant information”). The practices of infotainment and dramatisation are widespread media practices worldwide, yet their use is motivated commercially and ideologically (Thoma et al. 2021: 116-117). The media always had a commercial dimension. For Thussu (2008: 3) as television news have been commercialized, the need to make it entertaining has become a crucial priority for broadcasters. Therefore, there is a widespread media culture, which focuses mainly on commercialization and advertising. Dramatisation is related to these practices, as it aims to keep the audience's interest undiminished (Thoma, Tastsoglou & Koutsikos 2023: 24).

During periods of crisis the media tend to make an extensive use of dramatisation techniques. This research aims to compare the extent to which media used dramatisation techniques to cover COVID-19 pandemic-related news between two consecutive periods of the second and the third wave. For the needs of this research, content analysis was implemented in a sample of 120 news stories. The sampled news bulletins were broadcasted from November 7, 2020 until November 16, 2020 for the second wave of the pandemic, while for the third wave, news bulletins were broadcasted between November 7, 2021 and November 16, 2021. The dramatisation techniques investigated in the two periods were music/sound effects, metaphors and evaluative adjectives and negativity. In other words, it was investigated whether the dramatisation was more intense in the third wave of the pandemic, compared to the second, as it was expected, due to the higher number of coronavirus cases and deaths.

### **Media Coverage of Health Crises**

Pandemics controvert conventional assumptions about health as well as the role of media (Lee & Basnyat 2013: 121). During a pandemic, citizens' understanding of the issue and therefore their compliance with the proposed safety measures is related to the management of the communication dimension of the crisis (Minotakis, Vasilakopoulou & Pleios 2021: 142). Mass media have the power to reach significant percentages of the audience, while they are an important health news source for lay audiences (Marinescu & Mitu, 2016: 110), as the public lacks expertise on critical medical issues, particularly when they are unprecedented, such as the COVID-19 pandemic (Pleios & Poulakidakos 2021: 37). Media have been considered to be the most frequent source of information for citizens, in conditions of crisis, so their ability to prioritize public debate and influence citizens' perception of events becomes even more important (Papathanasopoulos, Armenakis & Karadimitriou 2021: 254). Therefore, health news coverage can have a significant impact on health policies, by drawing people's attention to certain issues and not others (Marinescu & Mitu 2016: 110).

Health news is an important vehicle of health education but generally a “flawed” one, whose main effect on the circulation of health information is understood as “distortion”. This “distortion” in health journalism is due to commercial pressures, as the “two cultures” of science and journalism are intertwined (Briggs & Hallin 2016: 30, 71). A potential pandemic suits perfectly almost all criteria for news values, such as unexpectedness (sudden outbreak) as well as agreement with predictions/expectations (a new pandemic was long predicted), increase in intensity (increasing number of cases and deaths), negativity (probability of disaster), importance/significance (fear of epidemic, personal risks), ambiguity (influenza is known), continuity (daily updates) and unpredictability (will it be a severe pandemic?). This latest news value is crucial for reporting new hazards. After a new virus emerges, it’s difficult to predict how quickly it will spread, the severity degree of symptoms and how many people may die. In general, experts discuss many different options, but the media have a bias in favor of worst-case scenarios, as these have a higher news value (Vasterman & Ruigrok 2013: 437-438). Consequently, the coverage of public health issues cannot remain unaffected by the news dramatisation and the attempt to present a health issue in a way that is both entertaining and attractive (Minotakis, Vasilakopoulou & Pleios 2021: 145).

### **Infotainment and News Dramatisation**

News today can be characterised as “exotic” and “deliberately impressive” compared to the news of even the past decade or twenty years (Bennett 1999: 34 & Pleios 2011: 241). Informative news is a synthesis of “hard” news -purely informative news- and “soft” news -of human interest-. This distinction mainly concerns the dimension of infotainment, not that much in the field of information, but in entertainment. The term infotainment is a neologism that appeared in the late 1980s and is perhaps the most typical, and therefore most widespread, form of “information” (Pleios 2011: 172-173, 241, 250-251). It refers to a way of transmission that incorporates real information and entertainment (“pleasant information”), meaning, that it combines information with drama and human interest. The practices of infotainment and dramatisation are widespread media practices worldwide. Their use though is motivated commercially and ideologically (Thoma et al. 2021: 116-117). This trend, in the era of globalisation and neoliberalism, is observed on a global scale, as the media increasingly adopt commercial practices, to the point that Thussu (2008: 134) talks about “global infotainment”. Television news is more inclined to “tell a story” and is “essentially melodramatic accounts of current events” (Schudson 1999: 1003). Infotainment is considered as a generalized strategy used especially in the news, achieved by organizing news in the form of a story, that is, a narrative with beginning, middle and end (Pleios 2011: 173).

The most important element of infotainment is dramatisation. Since the turn of the century, there is a widespread media culture, which focuses mainly on commercialization and advertising. Dramatisation is related to these practices, as it aims to keep the audiences’ interest undiminished

(Thoma, Tastsoglou & Koutsikos 2023: 24). Dramatisation is about every form of communicative content that may attract attention, stimulate or irritate the emotions of the audience (McQuail 2003: 564). An event that has the potential to be dramatized has a good chance of becoming an important story in the news (Bennett 1999: 113). A subject is considered to attract the attention and interest of the audience if it is presented in a dramatized way, including elements of human interest. It is also maintained in the subject matter of public debate as long as it is renewed with symbolism and dramaturgical performances and narratives which make it a story with beginning, middle and end (Demertzis 2002: 349). Every story in the news must be within the limits of integrity and responsibility, to present the characteristics of novel and drama. It must have structure and conflict, problem and final outcome, climax and then retreat of action, beginning, middle and end (Bennett 1999: 113). By adopting this way of presentation, the media aim primarily at impressing, motivating and promoting the protagonists of the news event (Demertzis 2002: 349). News doesn't describe the world, but portrays an "arena of dramatic forces in action" (Grabe & Zhou 2003: 314). News is often defined by the dramatic element, while the interspersions of a news story with dramatisation influences its reception, perhaps to a greater extent than the event itself (Thoma et al. 2021: 116). That being so, dramatisation takes place when there's an element of exaggeration in terms of the existing risks, if public attention is drawn to an issue that doesn't pose a real threat, or if the presentation depicts a health crisis aiming at the emotional stimulation of the recipients using evaluative determinations, emphasizing situations and aspects of the subject that exalt the emotion rather than actual events (Klemm, Das & Hartmann 2016: 2).

The second and most important element of infotainment is the morphic elements used for the aesthetic (entertaining) dimension of the message. The key categories of these elements in television news, are the following four (Pleios 2011: 243-247 & Thoma, Tastsoglou & Koutsikos 2023: 26): a) the extraverbal elements that accompany the spoken language in the news. The use of literary forms of discourse is intended to relate a fact to events derived from public or private sphere or the use of nouns that reproduce meanings other than their literal meaning. With this technique, the journalists can give sharpness, vividness, and liveliness to their words. This category includes the tone of speech (negative, positive, neutral or mixed), the type of speech, evaluative adjectives, metaphors and metonyms and the density of spoken speech. In particular, the use of metaphors and similes, on the one hand, gives eloquence and imagination to speech, and therefore a different tone of sentimentality in the news, elements that are not consistent with the real reason. Even more so, during the coverage of health crisis, the media often use metaphors in order to describe infectious diseases (Vasterman & Ruigrok 2013: 438). On the other hand, with the use of evaluative adjectives, the journalist's discourse becomes semantic, assuming subjective dimensions, so the journalist can highlight the protagonists of the news by creating different images of people, from the "hero" to the «scapegoat». b) The non-verbal elements, that is, the existence of music, the type of music, the music genre and music as part of the event. The use of

music sound effects in the news in the news has a psychological dimension, as it can cause specific emotional effects, such as anxiety, fear or curiosity. According to Grabe, Zhou and Barnett (2001: 643) music and sound effects are often used by journalists in order to intensify the dramatisation of the news. c) The theatrical elements of the television image. This includes how the news or story is delivered in terms of the reporter's posture, movement, or fixed position in the studio of the news or place of reporting, the gestures of journalists and their grimaces. d) The elements of directorial nature. More specifically, it includes the use of graphics during the presentation of news and the reading of the report, the caption, the slow motion of visualized actions of one or more persons or an event, the repetition of a virtual representation of the actions of one or more people or an event, which may be slow or normal, changes in shooting angle and footage used in pronunciation and projection, and finally the changes in lighting. The frequency of use of each of the above elements and the combination between them, the guide at different levels dramatisation.

Lastly, negativity, the so-called “bad news”, is amenable to dramatisation (Demertzis 2002: 347). We tend to pay attention to negative news. Negative information gives a kind of “stamp” to the human brain, which is not easy to erase. These negative trends affect the way we process news (Tsekeris & Zeri 2021: 364). Increased unpleasantness and fear beget increased attention, as well as an increased perception of importance (Young 2007: 1690). Fear has now become a commodity. The media have widened its exploitation, often presenting horror images and horror-inducing phrases (Vryzas 2015: 115). News directors have conceded that as much as the news media is a business, fearful news is often used to attract an audience. Fear serves as an emotional factor that automatically cues individuals’ attention toward potentially threatening stimuli, toward news stories that portend some potentially noxious consequences. It has been observed that the most compelling, vivid images in the news are often “intensely negative”, prompting fear in the viewer, although viewers continue to be captivated by these images as if they were an indication of immediate danger (Young 2007: 1674-1675). This contributes to intense “attraction” and media coverage of fear issues. Shared knowledge about the social world in a mass-mediated society tends to be about “bad news” (Altheide 1997: 658).

## **Research hypotheses**

### *1st research hypothesis*

The use of music sound effects in the news in the news has a psychological dimension, as it can cause specific emotional effects, such as anxiety, fear or curiosity (Pleios 2011: 243-247 & Thoma, Tastsoglou & Koutsikos 2023: 26). According to Grabe, Zhou and Barnett (2001: 643) music and sound effects are often used by journalists in order to intensify the dramatisation of the new For this reason, it is expected that TV news about the coronavirus, during the third wave of the pandemic to include louder background music, compared to the second wave.

The variables that will be analyzed are the music during the presentation of the news, the titles music and sound effects of the news.

### *2nd research hypothesis*

With the use of literary forms of discourse, journalists can give sharpness, vividness, and liveliness to their words. On the one hand, the use of evaluative adjectives, the journalist's speech becomes semantic, assuming subjective dimensions, so the journalist can highlight the protagonists of the news by creating different images of people. On the other hand, the use of metaphors gives eloquence and imagination to speech, and therefore a different tone of sentimentality to the news (Pleios 2011: 243-247 & Thoma, Tastsoglou & Koutsikos 2023: 26). Especially, during the coverage of health crisis, the media often use metaphors in order to describe infectious diseases (Vasterman & Ruigrok 2013: 438). For this reason, it is expected that the media, will make a more widespread use of metaphors and evaluative adjectives in the third wave compared to the second, as they give an additional dramatized character to the news.

The variables that will be analyzed are metaphors, evaluative adjectives and the caption.

### *3rd research hypothesis*

Negativity, the so-called “bad news”, is susceptible to dramatisation (Demertzis 2002: 347). We tend to pay attention to negative news. Negative information gives a kind of “seal” to the human mind, which is not easy to erase. These negative trends affect the way we process news (Tsekeris & Zeri 2021: 364). For this reason, it is expected that news about the pandemic will be negative to a greater extent in the third wave compared to the second wave.

The variables that will be analyzed are the news (in terms of risks, consequences and whether it is negative) and the tone of speech.

## **The research method**

For the research needs, content analysis was chosen, as it leads to systematic quantification of qualitative parameters which analyzes with the help of statistical analysis tools. Through the statistical process of data, statistical correlations are discovered on the basis of which theoretical research hypotheses are tested or new theoretical explanations emerge (Kiriazi 2011: 283). The quantification element enhances the systematic and objective application of neutral rules (Bryman 2017: 323). Also, by encoding the information of specific categories and collecting the information in this way, content analysis allows the researcher to examine not only the obvious content of the information investigations, but also the latent one, that lies «behind» the obvious information encoded (Poulakidakos 2013: 118-119). So, content analysis is a research technique, suitable for making replicable and valid inferences from texts or other meaningful matter to the contexts. In these means, it is a scientific tool (Krippendorff 2004: 18 & 2008: 208-209).

In this research, the unit analysis is the news item. The research sample consists of 1.033 news items in total which were broadcasted on television by six national television channels (ERT1, ANT1, ALPHA, SKAI, MEGA, STAR). In the second wave of the pandemic 583 news items were collected and 450 in the third. In the following table the news items collected are divided into television channel ownership and pandemic period:

**Table 1:** News items per television channel ownership and pandemic period

Channel	Second Wave	Third Wave	Total
ERT1	66	57	123
ANT1	116	70	186
ALPHA	107	88	195
ΣΚΑΪ	71	73	144
MEGA	90	74	164
STAR	133	88	221

The results were analyzed using SPSS 26. The Pearson Chi-Square test was used at a 95% confidence interval for the presence or absence of statistically significant results. The results show one type of graph that cross-tabulates the four dramatisation techniques (music/sound effects, metaphors, adjectives and negativity) with the variable of period (second-third wave). In total, eight graphs appeared in the results section. The graphs included in the results section are the statistically significant ones, whereas the results that didn't show any statistical significance are only commented.

## Content analysis' results

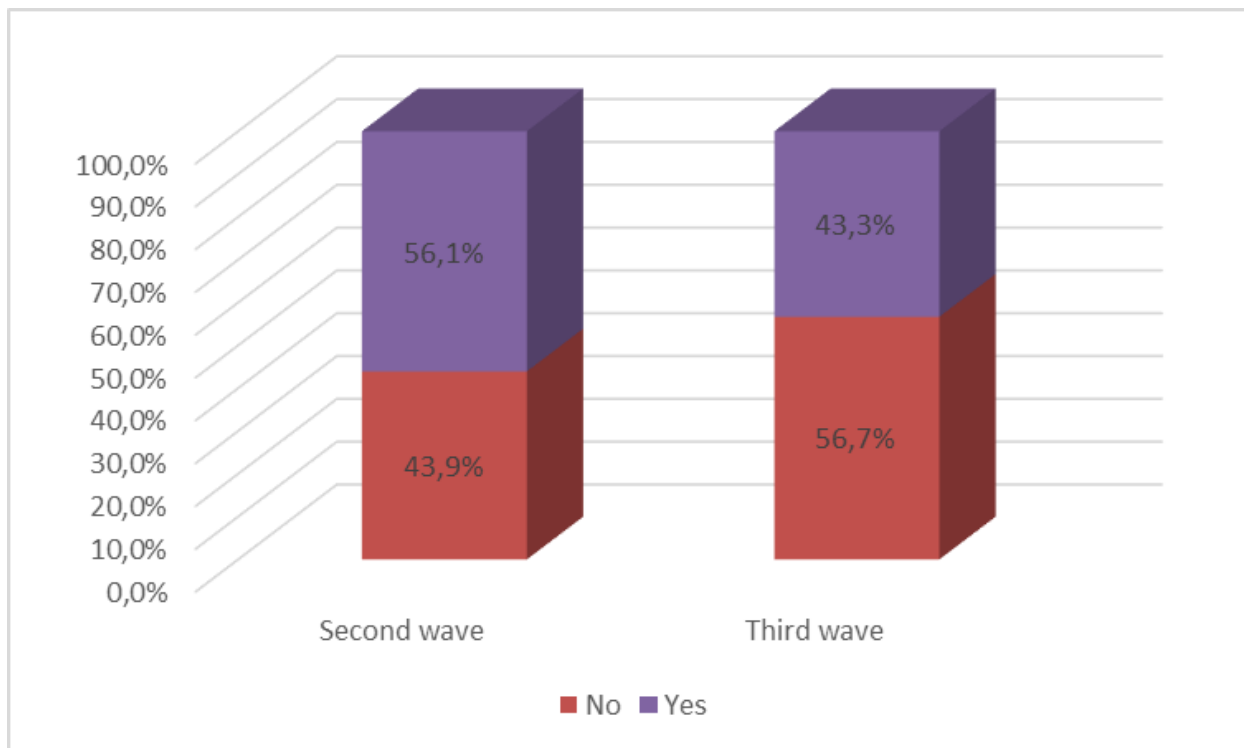
### *Use of music or sound effects*

In the presentation of the results, we focus on the parameters of dramatisation in the coronavirus-related news. We start with the use of music and sound effects, i.e. the music that the producers add to the news and not the music that may be present in the event itself. The first research hypothesis, the existence of background music in the news about the coronavirus, is refuted, as there wasn't a more intense use of inline music in the opening titles and during the presentation of the news by the media during the third wave compared to the second. More specifically, the use of titles music (i.e. the music playing before the presentation of the news) during the second wave, was spotted in 43.6% of the analysis units, as opposed to 56.4% of the units that didn't contain this element, as they did not have opening titles. During the third wave there is a slight decrease in these percentages with 43.3% of the units of analysis containing this element and 56.7% not having it. On that account the use of music or sound effects in the titles of the news was slightly less intense during the third wave, meaning there was a lower predisposition of dramatisation before



the presentation of the news, yet it didn't show any significant change over the two periods, as shown by the value of the Chi square test p value (.94).

Moving to the use of music during the presentation of the news, there is a significant difference recorded from the first to the second investigation period. According to Figure 1, during the second wave 56.1% of the analysis units contained this element of dramatisation, in contrary to 43.9% of cases where this element was not recorded. During the third wave there was a decrease in music use, with 43.3% of the units of analysis containing this element and 56.7% not containing this element. As shown by the value of the Chi square test p value (.00), the media made a less intense use of music when presenting the news, so the dramatisation was lower in this element during the third wave.



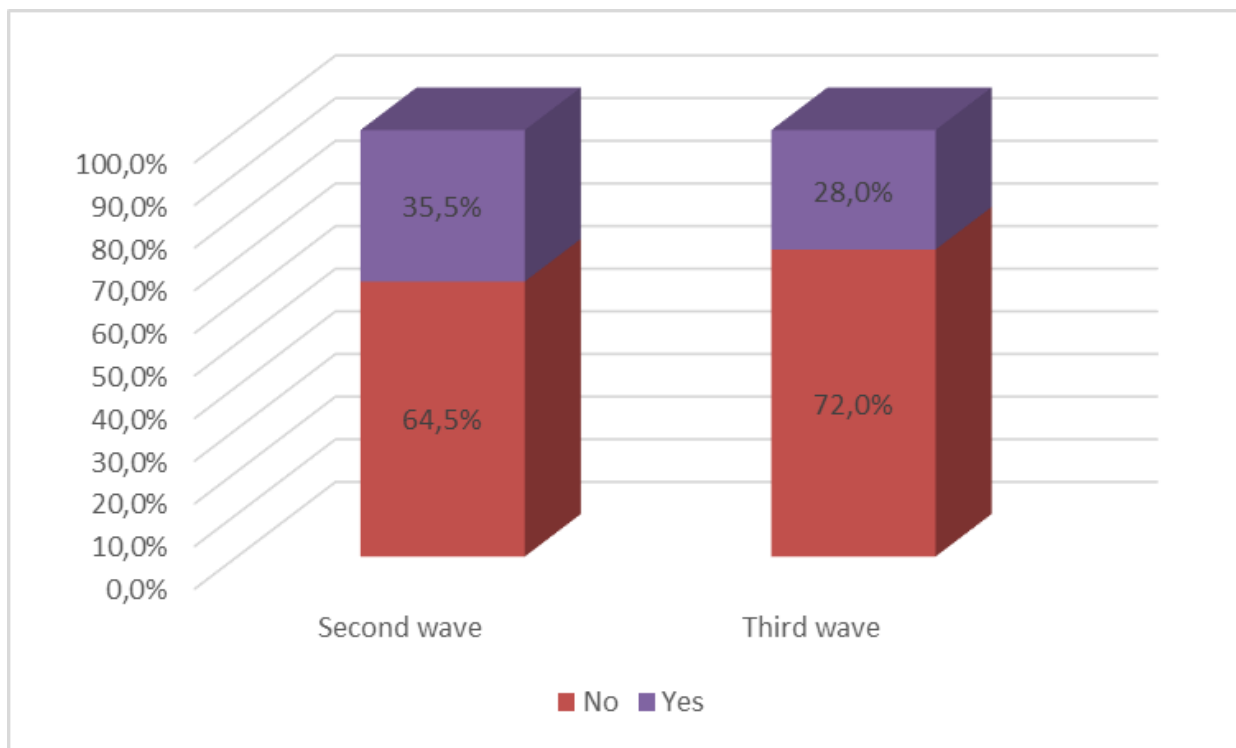
**Figure 1:** Use of music during the news presentation per pandemic wave (Chi square test p value= .00).

#### *Use of metaphors and evaluative adjectives*

Moving on to the discursive elements of infotainment, it must be noted that the use of more than two metaphors/evaluative adjectives parameter was used because dramatised news usually includes evaluative and sensationalist discourse. Every news bulletin contained at least one of metaphor/adjective but not more than two, especially during the third wave. More specifically, there was a decrease during the third wave in the use of (more than two) metaphors in the news.

During the second wave 22.6% of the units of analysis contained this element of dramatisation, as opposed to 77.4% of cases where this element wasn't present. In the third wave there is a drop in the use of metaphors, with 18% of units of analysis containing this element and 82% not having it. The Figure confirms the research's theoretical framework, which implies that metaphors are common for describing a pandemic. The decrease though during the third wave of the pandemic in this element, as shown by the value of the Chi square test p value (.07), isn't statistically significant in the two periods.

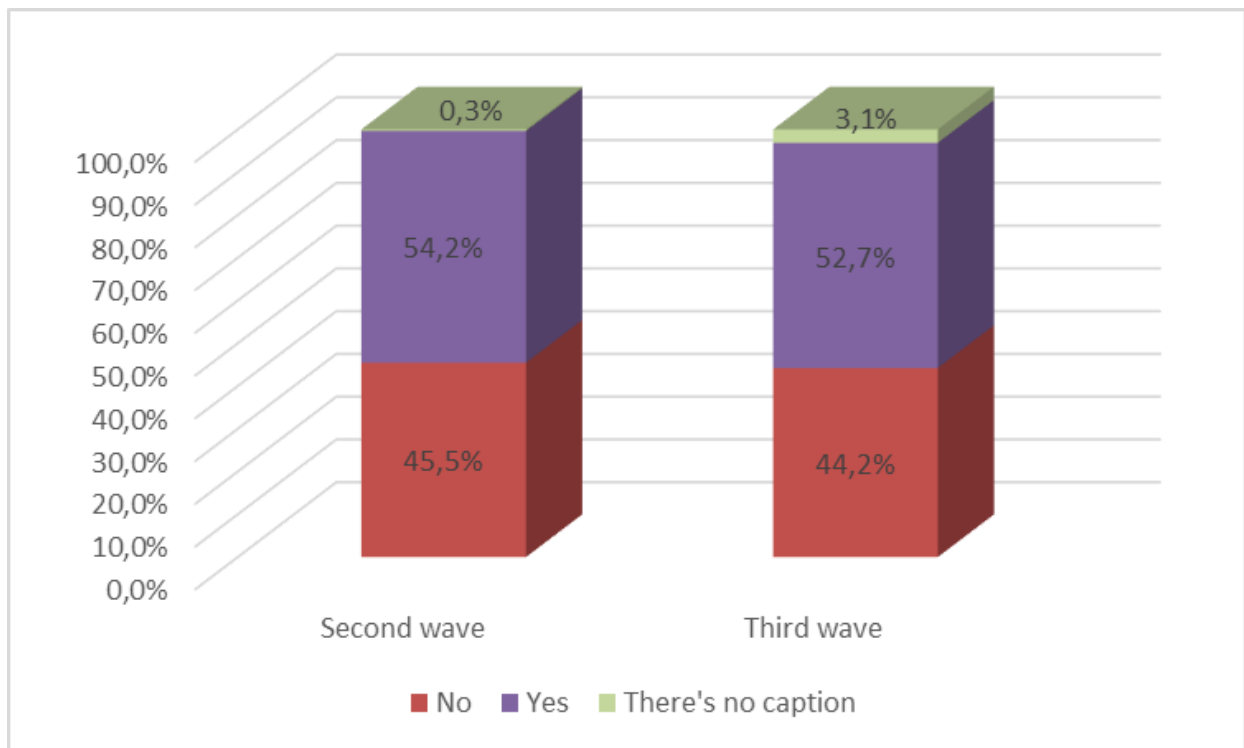
Regarding the use of (more than two) evaluative adjectives, there is a decrease during the third wave. In particular, according to Figure 2, in the second wave 35.5% of the analysis units contained this element of dramatisation, in contrast to 64.5% of cases where this element wasn't observed. During the third wave there is a decrease in the use of evaluative adjectives, with 28.8% of the analysis units containing this element and 72% not having it. As shown by the value of the Chi square test p value (.01), the difference in the use of evaluative adjectives between the two periods is a statistically significant feature.



**Figure 2:** Use of more than two evaluative adjectives in the news item per pandemic wave (Chi square test p value= .01).

Next comes the use of (more than two) metaphors and/or evaluative adjectives in the news bulletin caption. According to Figure 3, in the second wave, the use of metaphors and/or evaluative adjectives in the caption of the news was recorded in 54.2% of the analysis units, while in 45.5% of cases it wasn't found and in 0.3% had no caption. During the third wave there was a decrease

in the frequency of this element, with 52.7% of the units of analysis reproducing this element and 44.2% not having it, while 3.1% have no caption. So, the second research hypothesis isn't confirmed with regard to this variable either. As shown by the value of the Chi square test p value (.00), this is a statistically significant feature. So, the media showed a lower tendency to use metaphors and/or evaluative adjectives in the caption of the news during the third wave of the pandemic compared to the second. Therefore, the second research hypothesis (use of metaphors and evaluative adjectives in the news) is refuted, as the media under research showed a lower tendency in using metaphors to describe and comment on the pandemic using evaluative adjectives during the third wave of the pandemic compared to the second.



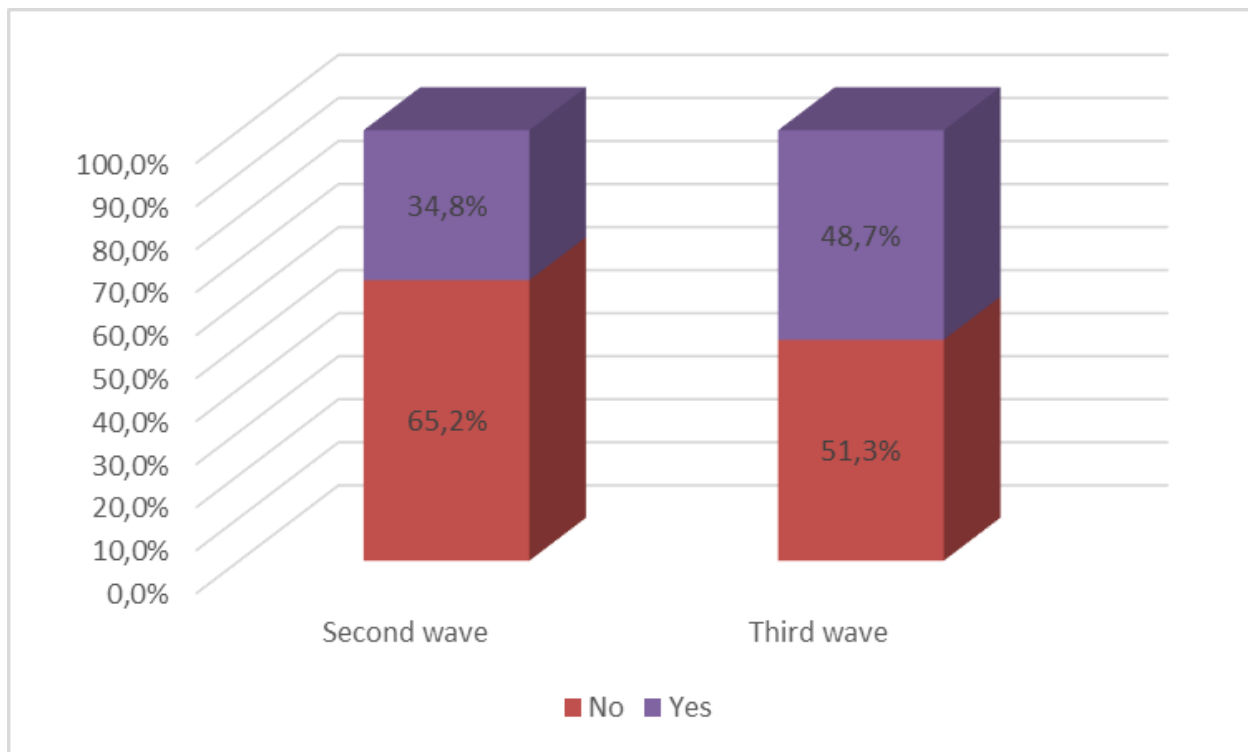
**Figure 3:** Use of more than two evaluative adjectives or/and metaphors in the caption of the news item per pandemic wave (Chi square test p value= .00).

### *Prevalence of negativity*

The third research hypothesis (prevalence of negative news) is partially confirmed, since not all the variables (five out of six) that were investigated showed an increase in the negativity during the third wave compared to the second. The following Figures confirm the research's theoretical framework, which states that negativity, the so-called “bad news”, are commonly found in the news insofar as the media have a bias in favor of worst-case scenarios. During the second wave,

29.3% of the analysis units reported the number of cases/deaths, while in 70.7% of cases they did not. During the third wave, a slight decrease was observed while the cases/deaths reported at 28.4% of analysis units and 71.6% not. As shown by the value of the Chi square test p value (.76), the reporting of the number of cases/deaths didn't show any significant change over the two periods.

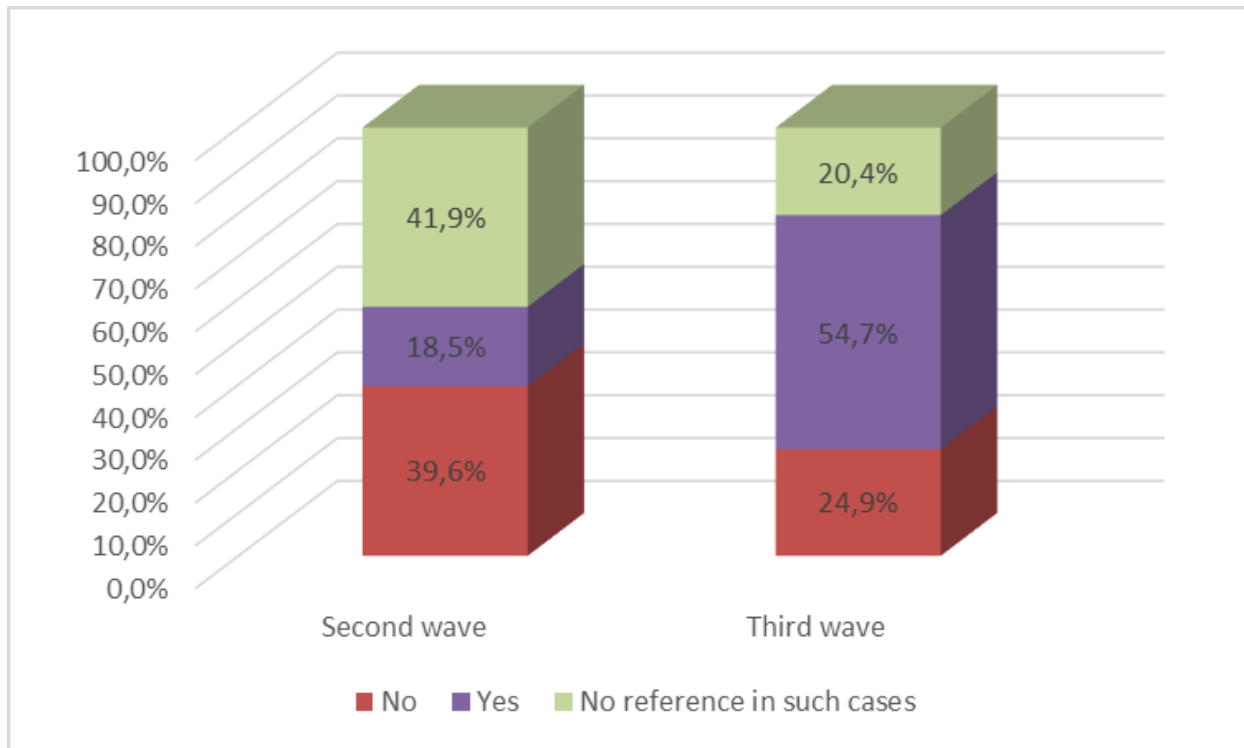
According to Figure 4, in the second wave 34.8% of the analysis units referred to the dangers (symptoms, death rate etc.) of the coronavirus, while in 65.2% of cases they didn't. During the third wave there was an increase in the risks reported at 48.7% of analysis units and 51.3% not. The dangers were mostly referring to hospitalization and death. The value of the Chi square test p value (.00) shows a statistically significant increase in the reference to the risks of the coronavirus during the third wave of the pandemic.



**Figure 4:** Reference to the dangers of coronavirus in the news item per pandemic wave (Chi square test p value= .00).

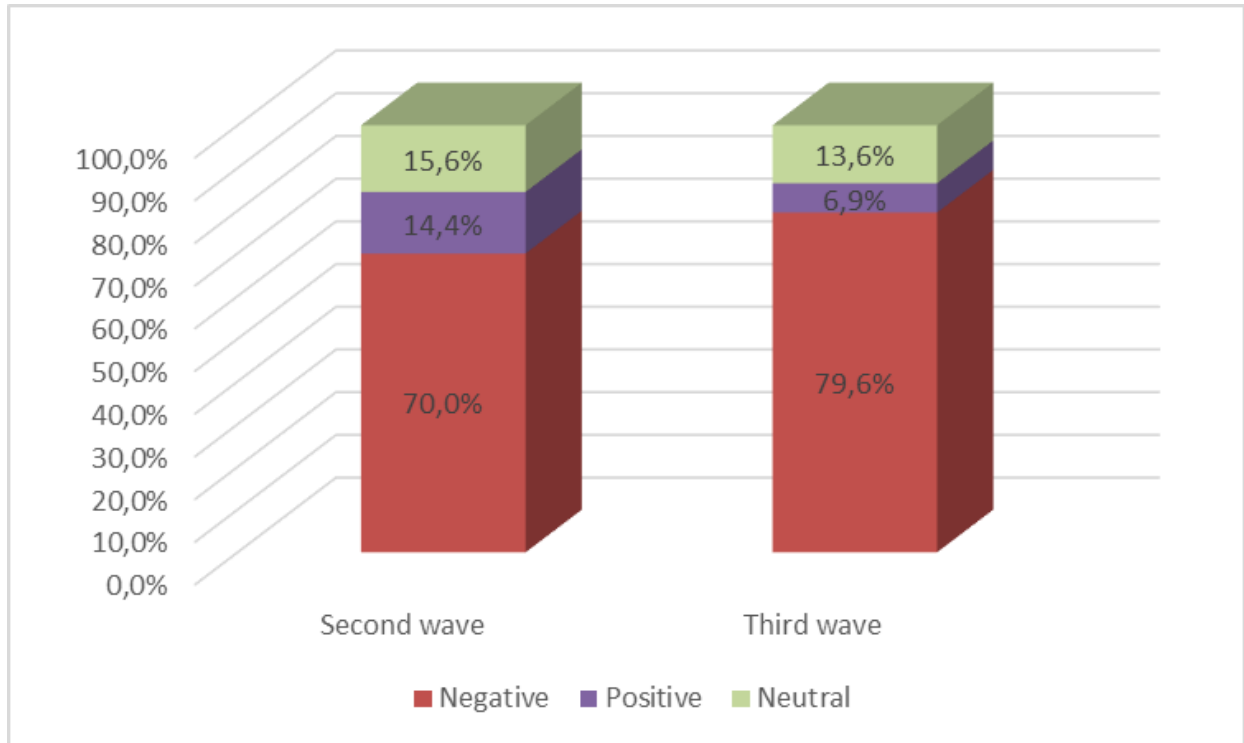
According to Figure 5, in the second wave, 18.5% of the analysis units referred to specific consequences for those who didn't comply with the measures or are hadn't been vaccinated, in 39.6% of cases the measures and vaccination were mentioned in general but not any consequences, while in 41.9% did not. During the third wave there was an increase in reporting of consequences

with a percentage of 54.7%, while 24.9% didn't refer to consequences and 20.4% did not refer to such cases. As the value of the Chi square test p value (.00), the reference to specific consequences for those who didn't comply with the safety measures or didn't get vaccinated, was found to be higher in the third wave compared to the second wave of the pandemic. This increase is statistically significant and is related to the consequences such as fines, hospitalization and even death, since there wasn't a lockdown at that time and people had to follow the safety measures in order to eliminate the spread of the virus and the protection on public health.



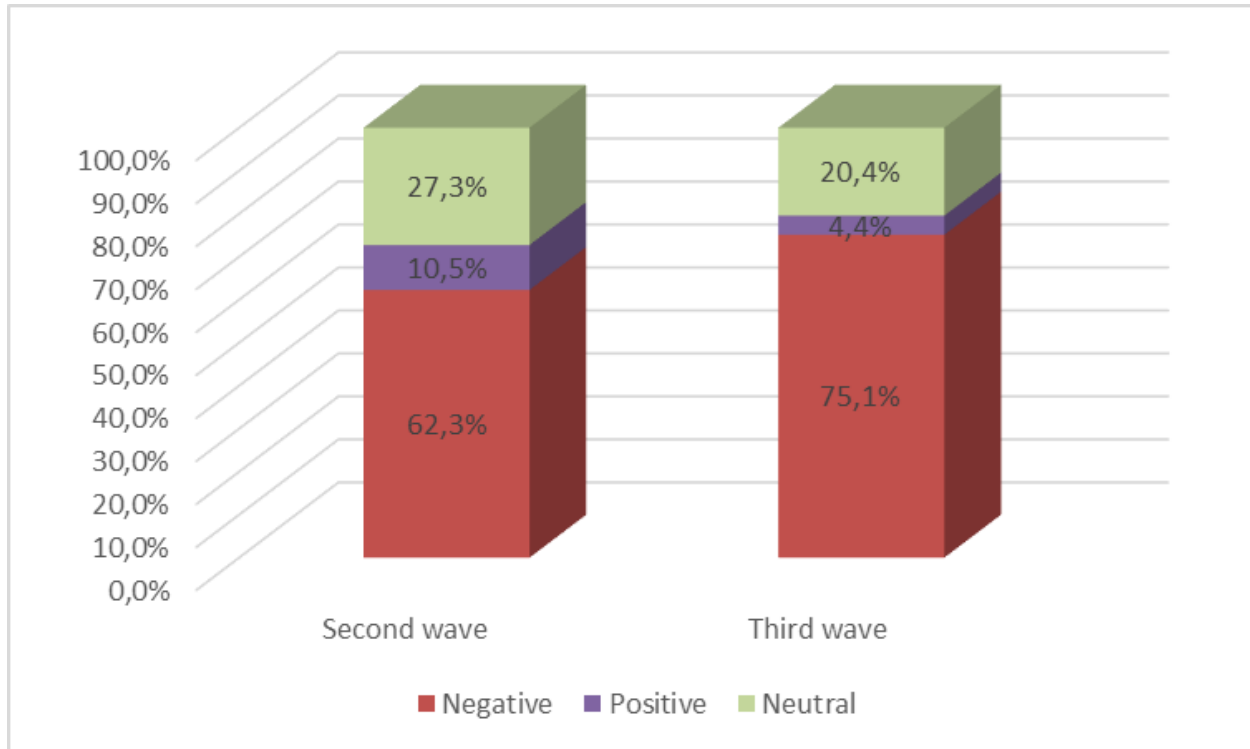
**Figure 5:** Reference to specific consequences for those who don't follow the measures or don't vaccinate in the news item per pandemic wave (Chi square test p value= .00).

As shown in Figure 6, in the second wave 70% of news were negative, only 14.4% of news were positive and 15.6% were neutral. In the third wave, the corresponding percentage of negative news was found to be even larger (79.6%), while positive news was detected in 6.9% of the sample and neutral news in 13.6%. The negative news prevailed in both periods, whereas the positive ones were very few. As shown by the value of the Chi square test p value (.00), negative news was the most prominent news type in the third wave of the pandemic compared to the second and this is a statistically significant feature.



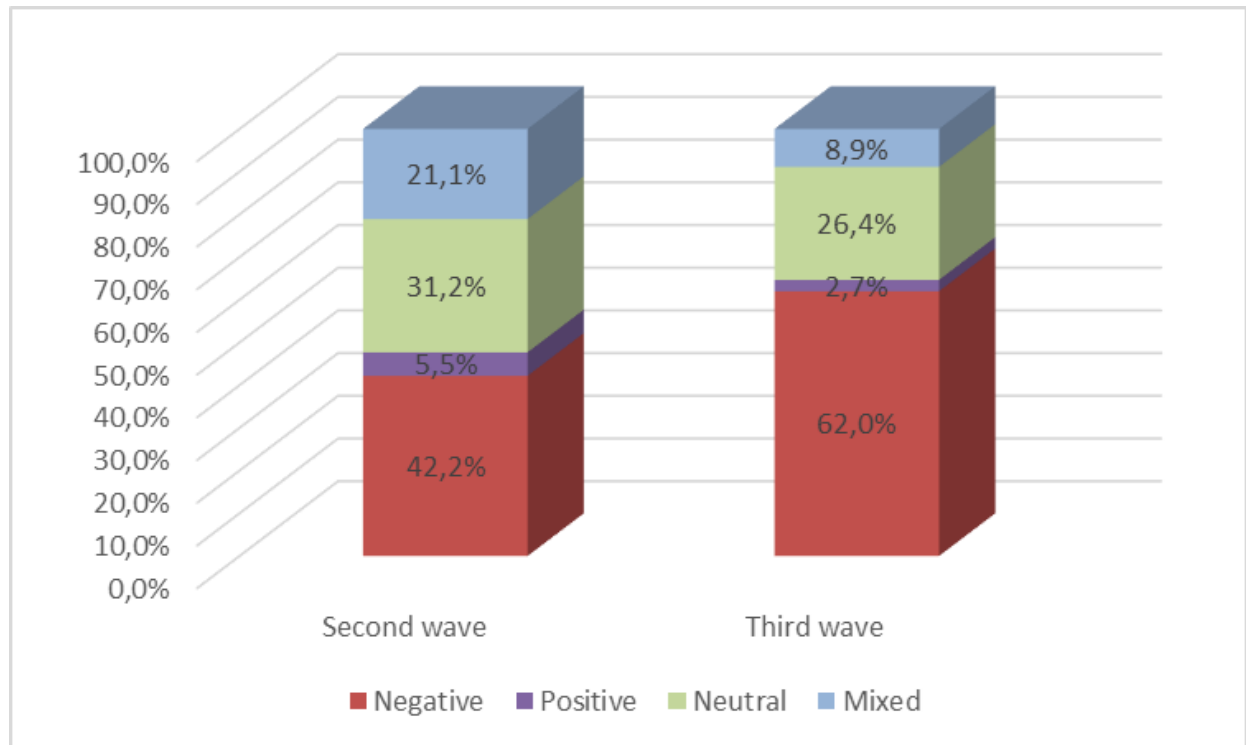
**Figure 6:** News type (positive, negative or neutral) per pandemic wave (Chi square test p value= .00).

According to Figure 7, in the second wave the speech tone of the presenter was negative in 62.3% of the analysis units, in 10.5% it was positive and in 27.3% it was neutral. In the third wave, an increase in negative tone was observed at 75.1%, while positive tone was observed at 4.4% of analysis units and neutral tone at 20.4%. As shown by the value of the Chi square test p value (.00), the speech tone of the presenter was less negative in the third wave of the pandemic. This is a statistically significant feature and shows a decrease of the dramatisation in this element.



**Figure 7:** Speech tone of the news presenter per pandemic wave (Chi square test p value= .00).

Finally, according to Figure 8, in the second wave the speech tone of the rest speakers was negative in 42.2% of the units of analysis, in 5.5% it was positive, in 31.2% it was neutral and at 21.1% it was mixed (due to the presence of many speakers). In the third wave, an increase in negative tone was observed with a percentage of 62%, while positive tone was observed at 2.7% of analysis units, neutral at 26.4% and mixed at 8.9%. The value of the Chi square test p value (.00) shows that the speech tone of the rest speakers was more negative in the third wave of the pandemic and this is a statistically significant element.



**Figure 8:** Speech tone of the rest speakers in the news item per pandemic wave (Chi square test p value=.00).

## Conclusions

This research attempted to compare the intensity of dramatisation between the second and the third wave of the COVID-19 pandemic. The purpose was to explore if dramatisation became more intense in the third wave of the pandemic compared to the second, as it was expected due to the more coronavirus daily cases and deaths. In general, the elements of dramatisation were found to be frequent in both periods investigated, with at least one element of dramatisation in all news bulletins of the media under research. As far as the research hypotheses are concerned, the first research hypothesis, which referred to the use of music and sound effects, which is often employed by journalists in order to intensify the dramatisation of the news, was not confirmed. The vast majority of the news bulletins didn't have opening titles. Therefore, there was no predisposition of news dramatisation before its presentation. There was a decrease of this dramatisation element in the third wave, but there wasn't a significant difference found between the two periods. As far as the use of music during the presentation of the news, is concerned, there was a decrease from the second wave to the third, which was statistically significant (p value= .00) and it showcases that dramatisation was decreased.

With regard to the second research hypothesis, which concerned to the use of literary forms of discourse, it was not confirmed as well. The findings on the use of metaphors didn't confirm the



hypothesis, as the media under research made a less intense use of metaphors during the third wave of the pandemic compared to the second. Yet there wasn't a significant difference between the two periods. As far as the use of evaluative adjectives is concerned, there was a less intense use during the third wave compared to the second and this decrease is statistically significant ( $p$  value= .01). Regarding the presence of metaphors and evaluative adjectives in the caption of the bulletins, it was spotted in the vast majority of the news of both periods investigated. The frequency of use of this element though, showed a statistically significant decrease ( $p$  value= .00) in the third wave of the pandemic. Consequently, the second hypotheses was also refuted.

Finally, the third research hypothesis which referred to the prevalence of negativity, the so-called "bad news", which is susceptible to dramatisation, was partially confirmed, with five out of six variables showing an increase during the third wave of the pandemic. The news about the pandemic in the third wave, were more negative than in the second wave, due higher number of new cases and deaths and this increase is statistically significant ( $p$  value= .00). As noted, the coverage of the number of cases/deaths reported didn't show a statistically significant difference between the two periods, yet during the third wave there was a small decrease of this variable in the news bulletins. In addition, there was an increase in the frequency of reporting the risks of coronavirus in the third wave, which had to do with the dangers of getting infected by the virus, hospitalization and death. Furthermore, the reporting of the consequences for those who didn't follow the safety measures or weren't vaccinated, was significantly increased ( $p$  value= .00) during the third wave of the pandemic, indicating higher dramatisation in this variable. Especially in the third wave, where there wasn't the imposition of the lockdown but there were safety measures and the recommendation for vaccination, news bulletins often referred to the dangers of the coronavirus as well as the consequences for those who didn't align with the measures imposed by the government. As far as the speech tone of the news presenter is concerned, it was more negative in the third wave and indeed the increase of this element between the two periods was statistically significant ( $p$  value= .00). Lastly, the tone of the rest speakers was negative in most cases in the third wave and it was a statistically significant feature too ( $p$  value= .00).

To sum up, two out of the three research hypotheses were refuted, while the one was only partially confirmed. Therefore, the answer to our main research question, whether dramatisation became more intense during the third wave of the pandemic compared to the second, is that no, it didn't become more intense, as it was initially expected. On the contrary, the dramatisation was found to be in a lesser extent in the third wave. Essentially, health journalism somehow became "better" in the third wave of the pandemic. Better though in a "suspicious" way. If one considers the circumstances of the two periods, this reduction raises questions. During the period of the second wave, with the imposition of a lockdown, possibly the purpose of dramatisation, was to influence the behavior of citizens in order to comply with the measures, as media coverage has a direct or

indirect impact on the behavior of individuals (Thoma et al., 2021: 115). During the third wave, the country wasn't in a state of lockdown. While the vaccination of the general population was progressing, coronavirus cases and deaths though, were the most recorded on a daily basis since the beginning of the pandemic. According to the testimonies of health officials in the bulletins analyzed, the situation was more serious than that of the second wave. The government though was against about imposing a new lockdown to the citizens, especially when the vaccine was available. Based on these circumstances and given that the use of the practices of infotainment and dramatisation involves commercial and ideological motives (Thoma et al., 2021: 116), the same motives must be recognised regarding their decrease in the third wave. The issue of political engagement of the media has been present in the coverage of the COVID-19 pandemic and is combined with the intensity of dramatisation and the entertainment character of the news (Minotakis, Vasilakopoulou & Pleios, 2021: 159). Our findings lead us to assume that there is a form of media instrumentalization. The media weren't used exclusively to communicate news about the coronavirus, but also to spread ideas and promote particular behaviors, a finding that is aligned with the existing literature (Briggs & Hallin 2016, Thoma et al. 2021). The embellishment of a news story with dramatisation affects its reception (Thoma et al., 2021: 116). Indeed, dramatisation was found to be the main “instrument” of this form of instrumentalization. As long as the government required citizens' discipline to follow the measures in the second wave, dramatisation was intensified, while in the third wave when government didn't need it as much as before, while the vaccination of the general population was progressing, dramatisation was decreased and the media began to cover the news better. That would seem to be a good thing for health journalism, but it's not because of the increased number of cases. Essentially, the media functioned as an ideological mechanism at the service of the state, explaining the pandemic and “teaching” what is good (such as vaccination) or bad (such as non-compliance with the measures). With all these being said, this research implies that the media instrumentalisation observed, has affected the way Greek news media covered the COVID-19 pandemic.

## References

- Altheide, D. L. (1997). The news media, the problem frame, and the production of fear. *Sociological Quarterly*, 38(4), 647-668.
- Briggs, C. L., & Hallin, D. C. (2016). *Making health public: How news coverage is remaking media, medicine, and contemporary life*. London: Routledge.
- Bryman A. (2016). *Social research Methods*. Athens: Gutenberg.
- Demertzis, N., & Eyeran, R. (2020). Covid-19 as cultural trauma. *American Journal of Cultural Sociology*, 8(3), 428–450. <https://doi.org/10.1057/s41290-020-00112-z>
- Demertzis N. (2002). *Political communication: Risk, publicity, internet*. Athens: Papazisis.

- Grabe, M. E., & Zhou, S. (2003). News as Aristotelian drama: The case of 60 minutes. *Mass Communication & Society*, 6(3), 313-336.
- Grabe M., Zhou S. & Barnett B. (2001). Explicating sensationalism in television news: Content and the bells and whistles of form. *Journal of Broadcasting & Electronic Media*, 45(4): 635-655.
- Thoma I., Tastsoglou M. & Koutsikos L. & Poulakidakos S. (2021). *Infotainment and dramatisation during the Covid-19 pandemic: Content analysis in the Greek media*. In G. Pleios, A. Skamnakis & S. Theocharidis (Eds.), *The communicative construction of a pandemic: SARS-CoV-2, the media & society*, 115-139. Athens: Papazisis.
- Klemm C., Das E. & Hartmann T. (2016). Swine flu and hype: a systematic review of media dramatisation of the H1N1 influenza pandemic, *Journal of Risk Research*, 19(1), 1-20.
- Krippendorff, K. (2004). *Content analysis: An Introduction to Its Methodology*. London: Sage.
- Kiriazi N. (2011). *The social research: Critical review of the methods and techniques*. Athens: Pedio.
- Lee, S. T., & Basnyat, I. (2013). From press release to news: Mapping the framing of the 2009 H1N1 a influenza pandemic. *Health Communication*, 28(2), 119-132.
- McQuail. (2003). *The theory of mass communication*. Athens: Kastaniotis.
- Marinescu, V., & Mitu, B. (2016). *The power of the media in health communication*. London: Routledge.
- Minotakis A., Vasilakopoulou M. & Pleios G. (2021). *The framing of a Covid-19 pandemic: Quantitative analysis of the framing for SARS-CoV-2 by the Greek media*. In G. Pleios, A. Skamnakis & S. Theocharidis (Eds.), *The communicative construction of a pandemic: SARS-CoV-2, the media & society*, 141-161. Athens: Papazisis.
- Bennett L. (1999). *News: The politics of illusion*. Athens: Dromeas.
- Pleios G. (2011). *The information society: The news and the modernity*. Athens: Kastaniotis.
- Pleios G. & Poulakidakos S. (2021). *The first wave of the Covid-19 pandemic and the news perspective in the Greek media*. In G. Pleios, A. Skamnakis & S. Theocharidis (Eds.), *The communicative construction of a pandemic: SARS-CoV-2, the media & society*, 36-66. Athens: Papazisis.
- Poulakidakos S. (2013). *Propaganda and public discourse: The presentation of the memorandum of understanding from Greek media*. Athens: Da Vinci.
- Schudson, M. (1999). Social origins of Press Cynicism in portraying politics. *American Behavioral Scientist*, 42(6), 998-1008.
- Thoma I., Tastsoglou M. & Koutsikos L. (2023). *Aspects of dramatisation during the first wave of the pandemic: Content analysis by time period, news coverage, and reference to the number of COVID-19 cases*. Poulakidakos, S., Matsiola, M., & Yannacopoulou, A. (Eds), *Envisioning the future of communication - Conference proceedings*, 1(1), 22-35. Kastoria: University of Western Macedonia / Department of Communication and Digital Media.
- Thussu, D. K. (2008). *News as entertainment: The Rise of Global Infotainment*. London: Sage.

- Tsekeris C. & Zeri P. (2021). *State, society and media in the era of coronavirus*. In G. Pleios, A. Skamnakis & S. Theocharidis (Eds.), *The communicative construction of a pandemic: SARS-CoV-2, the media & society*, 153-371. Athens: Papazisis.
- Young, J. (2003). The role of fear in agenda setting by television news. *American Behavioral Scientist*, 46(12), 1673–1695.
- Vasterman, P., & Ruigrok, N. (2013). Pandemic alarm in the Dutch media: Media coverage of the 2009 influenza A (H1N1) pandemic and the role of the expert sources. *European Journal of Communication*, 28(4), 436-453.
- Vryzas K. (2015). Sensationalism in mass media. *Journal of Social Research*, 61, 97-123.

# The Convergence of Public and Private Sphere in the context of the new Digital Era: The role of radio

Georgia Gioltzidou\*

## Abstract

Since the 19th century, radio has earned a characterization not only as a fast-moving medium of broadcast news, information, education and entertainment, but also as an interactive medium of the Public Sphere. New media however have transformed the meaning of Public Sphere, as well as the role of traditional media throughout the world. Radio, as a representative of the old media group, is in the midst of a new era. It has struggled to resist the rise of television, but also withstood the rise of the internet and the digital revolution. Radio still remains significant in the socio-cultural but also political landscape worldwide. The purpose of this study is to investigate whether radio confirms its role as a medium which is part of the Public Sphere but also if and how it constitutes a point of convergence of Public and Private Sphere within the competitive context of the new digital era. Through in-depth interviews with professional journalists, this research aims also to scrutinize the current role of radio in the Private Sphere and the extent of its influence upon it. The research concludes that radio still occupies a pivotal position among the factors that cause and enhance the convergence of the Private and Public sphere. Listeners and journalists are on the same side, the one of investing on the radio and helping it to transform and modernize.

**Keywords:** journalism, media, radio, public sphere, private sphere.

## Defining the Public Sphere

The role of Public Sphere has increasingly come to the fore in studies concerning mass media. Comparative studies between traditional media and new digital media are on the rise, with recent literature thoroughly documenting the shift in media dynamics and its impact on the public sphere (Garnham, 2020). In our attempt to approximate the relationship of radio with the Public and the Private Sphere, it is appropriate to clarify the definitions of the two concepts as well as the reasons why these terms have penetrated so much in the academic research.

According to Habermas (1964), "Public Sphere" predominantly denotes a realm of our social life where a semblance of public opinion can arise. He suggests that a fragment of the public sphere emerges whenever private individuals gather to create a collective entity.

Why is the term "Public Sphere" so often used? The significance of this term is due to four key factors. The first is the fascination with historical democratic passion, especially in the founding role of the press in the creation of bourgeois democracies. A second reason is the fact that,

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according to the theory of Habermas, in the public sphere the citizen himself is the protagonist. A third reason is the thorough presentation of the role of the press in the three recent centuries. Finally, a fourth reason is the promotion and connection of the concept of public sphere as an idiosyncratic of the ancient “Athenian assembly” (Kaitatzi, 2012). By comparing the term Public Sphere and the structural role of the radio, we understand better the reasons why expanding these concepts is necessary in order to identify the points to which they relate.

Why do we need the concept of the public sphere? The reason is that it allows linking the political decision-making process with the process shaping public opinion. Public opinion is a concept that means much more than the totality of the views of individuals who make up a society: it is a concept that focuses on both the content of their views, their mechanisms of formation, and their transmission to political power (Hrisanthopoulos, 2015). Additionally, a healthy Public Sphere is linked to a healthy democracy and a healthy media system. Chambers and Costain (2000) contend that robust democracies require a vibrant public sphere, where individuals can share ideas, gain understanding and information, address public issues, demand public transparency, deliberate on policy matters, question authority without fear of retaliation, and uphold fundamental principles. So, the connection between democracy and media system is extremely coherent (McNair, 2006). In this sense, radio can be approximated as a pillar and modulator of democracy.

According to Webster (2004), the implications of current developments are better understood and the re-evaluation of public service is better served by looking at the problem from the perspective of the theory of the Public Sphere. The Public Sphere requires a space in which information may be freely developed, discussed and disseminated so that the public may make decisions on confident grounds. Radio offers a unique platform where the exchange of views can be expressed most effectively.

When we speak about this space, we usually mean the public space, or else the Public Sphere, which is a broad concept that affects almost every aspect of public and social life. Although it is difficult to create a list of all those in the Public Sphere, we decidedly know that newspapers and magazines, radio and television are the media of the public sphere (Habermas, 1964). Therefore, the connection of the public sphere with mass media is obvious. If we accept the opinion of Habermas that there is a trend of weakening of the public sphere by the extension of fundamental rights in the social welfare state, then we assume that the foundations of the Public Sphere as well as the foundations of the mass media are under threat.

### **Defining the Private Sphere**

As early as the 18th century, the distinction between the Public and the Private Sphere was introduced. From then on, the distinction between issues and dialogues that are ratified as public

and those that have no place in the public sphere begins (Miloni, 2006). In any case it is easier to identify what is part of the private sphere, rather than exclude what is not.

The term “private sphere” refers to the most intimate aspects of human experience. (Thornton, 2014). Donnelly (2014:1) defines it as “the partially private sphere”, where private actors undertake governmental functions or offer public services following governmental outsourcing or privatization, and the “wholly private sphere”, which pertains to interactions among private actors. Another definition of the word ‘private’ is ‘belonging to or for the use of one particular person or group of people only’. Public life is governed by shared norms and values, whereas private life constitutes the realm of the intimate, personal identity, and free will (Chandler and Munday, 2011). However, the bond between the Public and the Private Sphere is extremely strong, but also under challenge.

The challenge or else the problem with the public sphere, lies in the fact that the Public Sphere and the private community have been constructed as opposing concepts. Can we disengage these two concepts? According to Leggewie and Maar (1998) the relationship between the private and the public sphere is profound and its character is critical .

Does private sphere losses its meaning when it opens up to the public? According to Emilio Mordini (2008:1), it does not. As he notices “Privacy is not in what we hide but in having the power to hide something”. These academic approaches as regards Private Sphere, makes it clear that any studies attempting to integrate the media, and in particular the radio, into just one sphere, must renounce the stereotypes that designate the two spaces - Private and Public – as independent and isolated.

### **Defining the convergence of Public and Private Sphere**

Public and private spheres are neither unrelated nor independent from each other. They could appear as two spheres tangent to each other, but also as two spheres that one lies inside the other. The public sphere acts as a mediator between the private sphere and the realm of public authority, and especially in modern societies, constitutes a "theatrical scene" in which political participation is disciplined; an area of social life in which public opinion is formed (Hrisanthopoulos, 2015).

Furthermore, according to Stevenson (2002:49), who suggests that "the Public Sphere and the press allow individuals to critically examine themselves and the actions of the government," we can infer that public discourse has been supplanted by "the gradual privatization of civic engagement and the reduction of significant public issues to trivial matters" (Harcup, 2009). One more time we understand the utopia of the disconnection of the two spheres.

Of course, the connection of the two, does not mean that there is homogeneity. Private Sphere is indeed considered to be a more sensitive area, whether Public is characterized by definition, more

tolerant and broadminded. However, the balance between Public and Private Sphere is essential. If we consider radio to have a place in both spheres, then we must clearly define the boundaries, not for the purpose of separation, but of understanding.

Most civic behaviors originate in private environments and may be broadcast publicly. The private expressions of citizenship that may be broadcast in public bear variable democratizing consequences. The Private Sphere is the focal point of the civic activity that develops, whether it remains within private confines or is broadcast to publicly positioned audiences and entities. (Papacharissi, 2010:16).

This transmission to which Papacharissi (2010) refers to, is the key point on which we base the perspective that radio is a point of union between private environment and public field. Freedom and democracy can be more appropriately cultivated in an environment where radio has the potential to move from one place to another and offer its services by combining the central aspects of the Public and Private Sphere. That is why intense study about radio is vital.

### **Defining the role of the radio as part of the Public and Private Sphere**

Radio is characterized by some very important and special elements. In the plethora of studies on the evolution of mass media there is too often a lack of focus on radio as a determining factor in the new media era (Bondebjerg, Madsen, 2008). Radio is a fast – moving medium of broadcasting news for both listeners and journalists. There are very few opportunities to ask questions, challenge information, or make comparisons in a field where deadlines are literally down to the last second. The radio journalist is dependent on the phone clock and the studio clock (Crook, 1998), working under very strict time constraints and leaving little room for flexibility or adjustments. Recently there have been breathtaking developments in the areas of radio broadcasting. Consequently, radio and the profession of radio journalism should be considered as a separate field of research.

Competition and political dynamics are converging to create a rapidly changing environment for radio. The journalist, on the other hand, holds a crucial role in any society to report truthfully and convey information to fellow citizens about events that violate human decency. Radio plays “an enormous role in this continuing battle” (Crook, 1998:11). In this battle, news belongs to both public and private sphere. Radio is frequently the channel through which news is transmitted among them. Barbie Zelizer and Stuart Allan (2010) describes news as information that is new and pertains to an event or issue and Current affairs as issue-centered, and thus less focused on specific events in its approach to covering public life compared to hard news journalism.

Since its inception, radio has been a catalyst for information, communication and freedom (Jeanneney, 1996). Furthermore, journalism works for an aspect of democracy. Media do the same. Radio does the same. Can we place radio only in one Sphere? It would likely be too perilous.



## **Methodology**

This research focuses on the personal experiences of journalists who are on the field, working as radio producers and covering different types of reportings. As for the selection of the journalists, we chose one from each of the following types of reporting: political, cultural, athletic and local government. The purpose for choosing these samples was to identify whether the different types of reporting influence the point of view of the journalists on the issue of placing radio in the Public and Private Spheres. Additionally, the aim of the study was to investigate if, how, and in what extent, the convergence of the Public and Private sphere is achieved through radio. The empirical research included personal in depth and semi-structured interviews with journalists who work on a daily basis on radio stations and specifically on the 958fm and 102fm radio stations of ERT (Hellenic Broadcasting Corporation).

As regards the interviewees, V.P. deals with Political Reportage, G.K. with Cultural, G.D. with Sports and D.K. with Local Government. For the sake of time saving, we use the following abbreviations when referring to the four journalists: Pol. for Political, Cult. for Cultural, Sports and L.G. for Local Government.

To apply this method, we employed an interview guide, which included the basic topics covered during the interview. Our goal was to create a climate of trust with the journalists. The guide included not more than eight questions in order for this to be the main axis of the issues for the discussion during the interview. The basic thematics that journalists were asked about are: 1) definition of Public and the Private Sphere as places where radio can exist, 2) convergence of Public and Private Sphere, as revealed by the type of reporting they work on 3) changes on the interactivity of the radio and on convergence of the two Spheres, over the years, 4) specific examples that prove the convergence or not of the two spheres, 5) the future of radio as a determining factor for the convergence of the two Spheres, 6) suggestions in order for radio to flourish. The interviews were transcribed verbatim from the recordings verbatim and the material was categorized according to the 6 themes above.

## **Results of the research**

### *How radio journalists perceive the concepts of Public and Private Sphere*

Winocur (2005) argues that radio listening is a private act, one that may be individual or collective but one that almost always takes place within the family and domestic sphere". The first subject of the study was how the journalists define themselves the Public and Private Sphere.

On the question 'How would you define the Public and the Private Sphere?' the answers provided reflect a variety of perspectives on the distinction between the public and private spheres,

highlighting the complexity of defining these concepts in contemporary society. The public sphere is generally associated with what is shared, discussed, or concerns the wider community, encompassing social and political activities that impact society at large. On the other hand, the private sphere is traditionally linked to personal, intimate, and home-based activities, focusing on individual experiences that are less accessible to public scrutiny. However, there is a recurring theme among the responses that the boundaries between the public and private spheres are increasingly blurred.

“I don't have the exact definitions but I would say that the Public Sphere is everything we share and Private Sphere is everything that takes place in our home. (...) There is a question of whether politicians must have privacy in their life and whether this must be protected. It has been decided that the family of public figures and their family members have immunity, while those involved in public life themselves, do not. Their Private Sphere is made Public, as long as it concerns the citizens.” Pol.

“Public is what refers to many. Private sphere is personal contact.” Athl.

“I think there are no clear boundaries between the Private and Public spheres, no matter what scientists say. As things have evolved, even the private is part of the Public Sphere, whether admitted or not. The Private Sphere cannot be completely isolated from the public realm, because the public realm today affects the private realm far more than ever.” Cult.

“Nowadays, it is very difficult to define the Private Sphere. In the past, things were clearer. What was in the narrow environment of a person was the Private Sphere, and those in the wider environment were the Public Sphere. (...) I would define the Public as a large sphere and the Private ones as smaller ones within the Public Sphere.” L.G.

These varying definitions underscore that the delineation between public and private spheres is not fixed but fluid, influenced by cultural, social, and technological factors. This complexity is particularly evident in discussions about privacy rights, media scrutiny, and the impact of digital communication on personal life.

#### 4.2 Does traditional radio cause the two spheres to converge?

Communication requires convergence. This is a way that public and private are attracted. In this sense personalization can be located on various levels of the communication process though radio. This approach of Landert (2004:10) is in harmony with what most of radio journalists agree on.

“The convergence of public and private though media generally is becoming more and more intense. (...) Listeners generally communicate though the traditional radio. Either to speak generally on the air or to speak only to the journalist (...). This creates an interaction between the journalist and the listener.” Pol.

“I find radio to be primarily a part of the Public Sphere. It has a mainly public role. (...) When I am in the microphone of the radio, I feel that I am addressing each and every Private Sphere separately. This affects me because I do not feel that I am speaking to a mob. I try to give the listeners the feeling that I'm talking to each one of them individually.” Athl.

“Everything that is said through the microphone, through the radio, is necessarily seen through the Private Sphere which seeks or wants to touch the Public Sphere. In this way, I believe that radio is a part of the coupling of public and private space, but perhaps less than in the previous years, where radio was the only mean of direct communication. (...) Through the radio, the Private Sphere becomes public and then private again. It's a complex shape.” Cult.

“Radio is a way to connect the Private Spheres to the public. If this thing works both ways then we are talking about success. Usually through the radio the Public Sphere approaches the private. The reverse happens, but not continuously. It happens mainly on private radios. (...) Private radios are more participatory and the problem of the private sphere is sometimes easier to be transferred to the Public Sphere. (...) This has to do with the nature of the program, of course. If the station is purely informative, communication with the audience is diminished.” L.G.

Although all journalists agree on the issue of setting radio in the midst of Public and Private Sphere, the journalists who work on Local Government reportage and Cultural are more convinced that this convergence is largely achieved.

#### *The role of the audience in promoting the convergence of their Private with the Public Sphere*

Radio is considered as the “grandfather” of mass communication. Radio communication exerts a profound influence on our daily lives. It entertains us with music and dialogue, keeps us informed about the latest news and weather updates, and has the power to sway our opinions and beliefs. But could it also function similarly to a psychologist? What are some causations that can mobilize the listeners to express themselves thus promote the convergence of their private sphere with the public one? The opinions, experiences and views on this matter do not converge. The perspectives shared emphasize the significant role of radio in bridging the public and private spheres, underlining the idea that communication inherently requires convergence.

“More often people want to speak about the personal problems. (...) This can be done for many reasons, from personal vanity to monetary gain. Most listeners who have an interactive radio communication are usually older.” L.G.

“There interest increases when there are strong political situations, such as elections or political tension. Two very intense periods of public participation were in 1989 with the Koskota scandal and another was in the summer of 2015 with the referendum in Greece. And of course, always during the elections. There was a strong interest in joining the group in 1996 with the Imia case.

In the years of financial crisis and memoranda, the world turns to the radio for personal problems, such as unemployment, financial hardship, professional difficulties, problems created in the family environment. On these matters the problems left the walls of the house and went out into the Public Sphere, from wherever a public step was taken, whether radio or social media. Private was made public. When you lose your job and face family problems, everything becomes public. You have nothing to lose. You have no problem in referring to your situation in public. Something you wouldn't put out at a different time.” Pol.

Although the journalists who deal with politics and local government see problems and negative circumstances as those motivating listeners, the sports journalist finds movement in major sporting events, whether they are positive or not.

“Usually on the eve or the next day of a race the audience is more expressive. Listeners are waiting to hear what they want to hear on the radio. This is mainly the case in sports reporting. The listeners want to hear that their team is the best, that it has not created any bad episodes, it loses only because it is wronged and it never wins any favor when it wins. A large number of people call the reporter over the phone and say so. It motivates them.” Athl.

On the other hand, the journalist who covers cultural issues, stresses out that audience is motivated not because of negative events but because of the pure need of expression which results from literature or art.

“Another case of the convergence of the Private Sphere with the public is that the listener sends a book to the journalist who deals with cultural reporting. It is a need that the private has to be made public. Anyway, every time someone publishes a book, the private gets public, but sending it to the radio producer shows an even greater need for the private to become public. It is the need of the individual to occupy a greater part of the public space.” Cult.

#### *The initiative of journalists to converge the two spheres over radio*

Frequently the radio journalist is called upon to reach out to the listener, to become his friend and to reduce the distance between them (Gazi, 2001:207). This of course helps converge the public and private spheres. Moreover, journalism and especially radio journalism is not only about telling the news. Personal elements are often expressed through radio. When this comes from the audience side we tend to comprehend. When the personalization comes from the journalists' side it looks weird. However even when it is not intended to happen, the personal speckle might be obvious. As Landert (2004:10) argues “a story can be told from the point of view of directly affected individuals, emphasizing personal experiences and emotions”. This is just one of the numerous ways that radio journalists merge the private and public spheres by eliminating personal elements. However, not all radio journalists are willing to open their heart through the microphone, although they wish their listeners to do so. Journalists encourage listeners to share their private sphere within

the public sphere through radio. But are they willing to do the same? Do they prefer to promote the convergence of the two spheres over radio via their personal example? As the results show, they very rarely do so.

“I try to avoid expressing my private sphere in public via radio. At one point I had expressed an experience of mine about a tender and sensitive time of my life. It was the rehabilitation of this experience. However, it is needless to say, that my son became ill or my mother deals with health problems. I do not go into this logic. I express emotions. As years pass by on the radio, you're not so cold, so tough...” Cult.

“From the microphone I have only once said something very personal. Sometimes I remember it and cry. It was during an athletic event and I was on the air, making fun of something. Suddenly, that very moment I felt that I wanted to express my gratitude to my fellow colleagues. It was when my brother died ...” Athl.

“No matter how much I tried to keep a distance for many years, it inevitably happened. For example, I've mentioned a fine I got from the police because I was driving too fast. I have also mentioned cases where I or relatives have been hospitalized, but usually I try to refer to the experience and not the protagonists. In many cases I am referring to incidents without mentioning the source.” Pol.

Maybe the only exception is the journalist who covers local government reportage. As we mentioned before the audience of this particular journalist is willing to express quite more than the others. This might be a reason why the journalist is motivated to do the same.

“Too often I express my personal things on the radio. (...) A personal incident that concerns the world is the one I will mention from the microphone. Many times, even listeners at that time, have told me that they have had a similar experience. (...) When I refer to news, I know I must not express my feelings. But in a daily show, however, I can express emotions. I mainly express my indignation and many more.” L. G.

#### *Parts of their private sphere that listeners most often express*

Radio works in totally different ways than the other mass media. One of the most common element of diversity is that of ‘blindness’ – the fact that it provides no visual images of the thing it refers to (Starkey, Crisell, 2009:102). Does this element prove that there is a communicative limitation on the radio? Does it contain an obstacle for the listeners to expose their private sphere to the public one? According to the journalists, the listeners often take the initiative to express feelings or to share personal stories. A push lever for them to address to the radio station and to interfere or meddle in, is their neediness for communication. They want to talk to someone. So frequently the convergence of private and public sphere is a result of an inner need.

As regards listeners opening their heart on radio, while being on air, most journalists agree that people more often express negatively or even aggressively.

“Very rarely do listeners talk about something personal. It has happened sometimes but rarely. This is mainly what older listeners do. They need to talk to someone. (...) On the radio, listeners will express their Private Sphere in an indirect way. They will say their point of view. There are 2 categories of listeners. The ones who will speak kindly and give you their opinion and are others who are aggressive from the start and usually take cover and use expressions that are unacceptable. Listeners pull out their souls. In this sense there is convergence of the public and private sphere.” Athl.

“Listeners often express emotions on the radio. Sometimes even with their silences. The fact that a listener may not pick up the phone or send a message is still a powerful message. Listeners of course express themselves through messages, phone calls and letters, but silences are also very strong.” Cult.

“Personal issues. (...) isThere is no obscurity. When a problem is reported, even the disclosure of personal information is almost certain. For example, in a kindergarten issue, a listener will report his or her personal problem, where his or her child goes to school, and what problem he or she is facing. The listener will also talk about his mother who is ill. He will convey his problem assuming he speaks in his neighborhood because the issue is of local interest.” L.G.

One issue that is different and is worthy of special attention has to do with the kind of radio broadcasts. All broadcasts are not the same. This is appropriately pointed out by the journalist who deals with local government reporting.

“Company shows, that is, those that are not of journalistic interest, and especially those that take place in the afternoon or evening, create the conditions for reporting personal matters more easily. Morning hours are more academic and there are usually more complaints and complaints. (...) Most often, listeners express anger. This is the driving force. The indignation usually makes a listener call the radio and express themselves. And usually listeners express opinions. They want to say their point of view.” L.G.

### *Challenges and future of the radio as a component of Public and Private Sphere's convergence*

Each journalist comment on how the radio will regain its glory, how it can withstand the competition of new media and how it can grow in the future.

“The radio must approach reality from the beginning and from the road. The radio producer must go where the private sphere is and transfer it to the public. This is the solution.” L.G.

“We need to open the microphones. There is a level that must not be surpassed because the news transmitted by the microphone must have an elementary junction. When you directly transmit what

a listener tells you then there is no junction. (...) There has always been and still is a danger in converging the two balls. (...) People want to hear, but they also want to talk. Convergence is gaining more and more ground.” Pol.

Some journalists seem more optimistic about the future role of the radio while others are afraid that the fight is uneven.

“The radio has enormous power to bring the Public and Private Spheres close together. I'm not afraid of the future of radio. It cannot lose its power because people will listen to the radio wherever they are. This has to do with the immediacy of the medium. I don't think the radio will ever go out.” Athl.

“I don't know how things will turn out. We are in a chaotic situation right now. There is internet radio, online newspapers, but also print and classic radio, facebook, internet television (...)Perhaps the radio should make the best use of it, the most versatile and the most intelligent, all other means. Not as forms of information, but as forms of communication.” Cult.

#### *Traditional radio and the new internet mass media*

In many ways radio has always seemed as the friendliest of all media. Unlike television, radio doesn't impose on us the need for forced laughter or melodramatic reactions. Instead, it provides exactly what we need or desire.

Internet mass media differ significantly because they encompass more than just voice or sound. They usually combine many visual and audio aspects (McInerney, 2001 ; Wei et al, 2022). This fact focuses on radio and its ability to handle issues and ideas without visual distraction, thus achieving a more effectively performance (Starkey, Crisell, 2009). The radio journalist who covers local government commends on a very important and particular point of radio's uniqueness. This statement seems to be the more optimistic one.

“The relationship of the radio to the new media is different, not competitive. Anyone seeing the title will click on it. In the newspaper you can read the headline quickly and if you don't like it, you don't buy it. On the radio you can never know what follows or if a perfect song will be delivered. On the radio you choose a complete package with speech and music. If you're bored, you just change it. On the internet you can fly from here to there and just snap. But the information you find there, is not cross-referenced. This is a major difference with radio. Things are more protected.” L. G.

## **Conclusions**

Radio is not dying. The special features and unique characteristics of radio make it a powerful and compelling mass medium that servers communication and does not operate competitively but

rather works complementary with other media. Radio occupies a pivotal position among the factors that cause and enhance the convergence of the Private and Public sphere. The first bibliographic part of our study proves that there is a great need for updated surveys as regards the survival, development and longevity of radio. The second empirical section revealed that radio still holds promise. Although the different type of reporting on the radio differentiates and distinguishes the personal experiences of the journalists, they all agree that radio can play an important role as a fixed point of convergence of Public and Private Sphere. They also emphasize the influence that radio has on the lives and personalities of the listeners and how much they are still eager to participate in a public conversation, to approach the radios' Public Sphere and to share personal elements thought a medium they trust. Listeners and journalists are on the same side, the one of investing on the radio and helping it to transform and modernize. The developments are running fast and soon there might be a time when we will not separate traditional from digital media, but we will only talk about media of human communication. Until that time, more research is needed in order for the scientific community to identify the dangers and protect the radio as an enduring value of democracy and prosperity.

## References

- Barbie, Z, and Stuart, A., (2010). *Keywords in News and Journalism Studies*. London: Open University Press, p. 80.
- Bondebjerg, I., Madsen, P. (2008). *Media, Democracy and European Culture*. Gutenberg Press, Malta.
- Castells, M. (1996). *The Rise of the Network Society: The Information Age: Economy, Society, and Culture. Volume I*. Oxford: Blackwell Publishers. Retrieved from [https://www.researchgate.net/publication/236708093\\_Radio's\\_Intimate\\_Public\\_Network\\_Broadcasting\\_and\\_Mass-Mediated\\_Democracy\\_review](https://www.researchgate.net/publication/236708093_Radio's_Intimate_Public_Network_Broadcasting_and_Mass-Mediated_Democracy_review)
- Chandler, D., Munday, R. (2011). *Oxford- A Dictionary of Media and Communication*. Oxford University Press.
- Crook, T. (1998). *International radio journalism – history, theory and practice*. London and New York.
- De Certeau, M. (1996). *La invención de lo cotidiano: I Artes de Hacer*. México City, México: Universidad Iberoamericana.
- Donnelly, C. (2014). The Convention in the Private Sphere: A Noteworthy Achievement” in Egan. Thornton & Walsh, *The ECHR and Ireland: 60 Years and Beyond* (Bloomsbury Professional.).
- Gazi, A. (2001). *The Sound Barrier - The dynamics of radio in Greece*. Christos Mparmpoutis – Mihalis Klontzas. Papazizi, Athens.
- Goodman, D. (2012). Making Early American Broadcasting's Public Sphere: Radio Fortune Telling and The Demarcation of Private and Public Speech. Retrieved from <https://www.tandfonline.com/doi/abs/10.1080/01439685.2012.669884>



- Garnham, N. (2020). *The media and the public sphere*. In *The information society reader* (pp. 357-365). Routledge.
- Habermas J., Lennox S., Lennox F., (1964). *The Public Sphere: An Encyclopedia Article*. Source: New German Critique, No. 3 (Autumn, 1974), pp. 49-55. Published by: New German Critique. Retrieved from: <https://www.jstor.org/stable/487737?origin=JSTOR-pdf>
- Harcup T., (2009). *Journalism, principles and practice. Second edition*. Sage Publications Ltd.
- Jeanneney, J. (1990). *Une histoire des médias, des origines à nos jours*. Points, Paris.
- Kaitatzi - Whitlock, S. (2012). *Communicaton: Theory in Practice*. Livani.
- Kaitatzi - Whitlock, S. (1996). Pluralism and Media Concentration in Europe, Media Policy as Industrial Policy. *European Journal of Communication*.
- Kathimerini, (2013). Radio is a "stable value", according to research. Retrieved from <https://www.kathimerini.gr/28997/article/epikairothta/ellada/sta8erh-a3ia-to-radiofwno-symfwna-me-ereyna>
- Knight, M., Cook, C. (2013). *Social Media for Journalists – Principles and Practice*. Sage Publications Ltd.
- Lacey, N. (2013). *Punishment, (Neo) Liberalism and Social Democracy*. By Simon J., Sparks R. (2013). The SAGE Handbook of Punishment and Society.
- Landert, D. (2004). *Personalisation in Mass Media Communication*. John Benjamins Publishing Company.
- Loviglio, J. (2005). Radio's Intimate Public, Network Broadcasting and Mass-Mediated Democracy. DOI:10.1353/tech.2007.0040
- Luckhurst, T., Cocking, B., Bailey, R. (2019). Assessing the Delivery of BBC Radio 5 Live's Public Service Commitments. Retrieved from [https://www.researchgate.net/publication/331072216\\_Assessing\\_the\\_Delivery\\_of\\_BBC\\_Radio\\_5\\_Live's\\_Public\\_Service\\_Commitments](https://www.researchgate.net/publication/331072216_Assessing_the_Delivery_of_BBC_Radio_5_Live's_Public_Service_Commitments)
- Maar, C., Leggewie, C. (1998). Von der Zuschauer-zur Beteiligungsde. (Beth Simone Noveck, 2009). Transparent space: Law, technology and deliberative democracy in the information society. Retrieved from [https://www.researchgate.net/publication/277854225\\_Beth\\_Simone\\_Noveck\\_Wiki\\_Government\\_How\\_Technology\\_Can\\_Make\\_Government\\_Better\\_Democracy\\_Stronger\\_and\\_Citizens\\_More\\_Powerful\\_Washington\\_Brookings\\_Institution\\_Press\\_2009](https://www.researchgate.net/publication/277854225_Beth_Simone_Noveck_Wiki_Government_How_Technology_Can_Make_Government_Better_Democracy_Stronger_and_Citizens_More_Powerful_Washington_Brookings_Institution_Press_2009)
- McInerney, V. (2001). *Writing for Radio*. Manchester University Press. Rosalía, W. (2005). *Radio and Everyday Life Uses and Meanings in the Domestic Sphere* Universidad. Autónoma Metropolitana,
- Mordini, E. (2008). *Nothing to Hide Biometrics, Privacy and Private Sphere*. In: Schouten B., Juul N.C., Drygajlo A.. Springer, Berlin, Heidelberg.
- Milioni, F. (2006). Mass communication and democracy. Towards a new model of democracy in the age of global interconnection. Retrieved from <https://www.didaktorika.gr/eadd/handle/10442/18025>.
- Papacharissi, Z. (2010) *A Private Sphere: Democracy in a Digital Age*, Polity Press.

- Starkey, G., Crisell, A. (2009). *Radio Journalism. Journalism Studies: Key Texts*. Sage Publications Ltd.
- Stevenson, J. (2002). The century of the gene. Willey – Liss Inc. Retrieved from <https://doi.org/10.1002/ajhb.1144>
- Thornton, L., Walsh, J. (2014). *The Convention in the Private Sphere*. Bloomsbury. Retrieved by <https://researchrepository.ucd.ie/handle/10197/6140>
- Webster, F. (2004). *The Information Society Reader*, Routledge.
- Wei, Y., Hu, D., Tian, Y., & Li, X. (2022). Learning in audio-visual context: A review, analysis, and new perspective. arXiv preprint arXiv:2208.09579.

## **Media literacy: a bridge between communication and education**

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### **Abstract**

The widespread use of information and communication applications in digital media has changed the way pupils and students embark on the learning process, the terms of learning engagement, and their perception of the value and usefulness of information and knowledge. However, curricula in Greece do not follow this change, at any educational level; students' needs are not supported in a digital, interactive, environment; nor is the importance of digital communities valued in school life. The introduction of selective digital literacies in a "skills zone" in secondary education is invalidated as an innovation by the number and irrelevance of subjects fitted into this one teaching hour per week; furthermore, this training is delivered by teachers who have not received any MIL education. This challenge can be resolved by introducing MIL courses in formal curricula and by training active and future educators.

**Keywords:** media literacy, media education, formal education, MIL courses.

### **Introduction**

A literate person today needs to handle not only representations of the alphabet but multimodal expressions of intentional messages, as each discourse is realized in a multiple system of modes and means, where any concept is expressed in different codes, allowing variable interpretations, based on both the individual's acquired skills and knowledge as well as the requirements of social contexts and the needs of each different community or environment. Diversified media codes, multimodal messages (written text, image, sound, hypertext, etc.), non-linguistic elements (advertising, gestures) (Kress, 2003), new language codes (Cope & Kalantzis, 2015) comprise the contemporary framework of knowledge transfer to students, at all educational levels.

Variability in the meaning of multimodal messages with multiple semiotic codes, as they operate in different cultural, social, and educational contexts, suggests that, today, the teaching of any literacy can no longer focus on the normative component only of any "piece" of knowledge or any "instance" of skill to be taught - for example, the norms of typical forms of the national language. Achieving the everyday goals of communicating and representing "meaning" requires individuals to be able to perceive differences in patterns of this meaning from one context or mode to another.

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On the other hand, the characteristics of new digital media interact with the very process of meaning generation, where the forms of written language are intertwined with oral, visual, auditory, gestural, tactile and spatial patterns.

The “new education” is characterized by constant revision, variety, interactivity and opportunities for social creativity (Frau-Meigs & Hibbard, 2016). The importance of new types of literacy in the modern knowledge society (European Commission, 2016) is both fundamental and unprecedented, because it not only connects the knowledge society with modern literacies, but it also transforms the process of acquiring knowledge from a relatively passive to a more active and interactive act, in a context of continuous communication, as a phenomenon that determines current and future social developments. The acquisition of Media Literacy includes all digital literacies, knowledge and skills needed by the contemporary literate person, also including complex cognitive and functional skills, in a communicative, informational and socializing dimension (Johnson, 2008; Kertysova, 2018).

### **From individual responsibility towards a national Media Literacy curriculum**

However, neither research nor educational interventions have incorporated media and information literacy (MIL) in a uniform manner; thus, we see various ad hoc approaches by practitioners both to deliver and to assess the effects of MIL applications; we also observe lack of standardization and -even more crucial- the use of different definitions and validation measures. These incompatibilities make it difficult to compare results across applications or over time, even more because of the lack of consensus on a single research design that will appropriately measure effectiveness of the various proposed educational interventions or models.

Another important issue is that MIL interventions, and in particular those emphasizing news literacy, often focus on identifying information distortions (mis/dis-information) deconstructing news content or teaching verification techniques, without, though, adopting certain pedagogies or being based on specific learning theories. Despite intense debates among scholars and differing views on which pedagogy is more or less effective, no MIL specific discipline is highly standardized, and each instructor's understanding of the field, as well as his or her academic training, have a significant impact on students' learning experiences. In practice, discussing the details of different approaches is less important today, as, in the absence of a single standardised MIL Pedagogy framework, teachers translate and adapt the MIL concepts and practices as they see fit for the conditions and environments in which they work, the political and news media of their country, and the prevailing technological environments (Kajimoto & Fleming, 2019).

In a nutshell, MIL research today is characterized by ad hoc approaches, different definitions and measurements, lack of standardization in theory and application, difficulty in comparing results

over time or across cases, as well as differing views on which pedagogy is most effective. MIL interventions often do not adopt the broader interpretations of the social, cultural, economic, and political dynamics of media and content production and circulation. Also, the nature of MIL teaching seems to be complex and challenging as it needs to tackle different goals at the different levels of education and settings, which teachers seem to be “lost in the translation” of the online information saturated environment (Brennen, et al., 2020).

For that matter, multidisciplinary cooperation between many parties is required, in order to couple the findings of media and news literacy research with pedagogy methodologies and address the current limitations in an open dialogue between MIL researchers, practitioners and professionals so that appropriate and flexible MIL school programs are developed, to keep pace with fast-changing digital technology (Edwards et al., 2021). Furthermore, MIL provides citizens with the necessary skills to seek, analyse and share information for advocacy or civic engagement in an ethical and responsible manner (Middaugh, 2018).

Based on evidence such as the aforementioned, many researchers and practitioners urge for national formal MIL interventions, not only because this way curricula can be drafted to cover a wide spectrum of contemporary students’ needs, but also because in the current circumstances, where individuals try to become media literate on their own means, the responsibility is unevenly distributed among varied social strata and population groups. At the same time, coupled with the need for an urgent paradigm shift in formal education, we need to consider that, due to the rapid spread of the use of digital media, a wider transition from models of external control (for example, by governments) to models where families undertake the roles of 'remote regulators' of their members’ interaction with digital environments seems inevitable, for example through self-regulation (in the case of teenagers or young adults) or through parents (in the case of younger students), (Livingstone, 2004; 2011).

Nowadays content is in overabundance, media and applications are more than what an average individual can handle in their average day and digital skills have become the warp on the canvas of the school curriculum. However, this curriculum is not education’s “bible” any more, as both students and teachers can learn new knowledge and skills both at school and outside the traditional educational institutions, for example at online communities or platforms such as social media and social networks, where they not only have access to chunks of information on any subject but they also create new content themselves, through interaction and collaboration.

### **Pedagogical value of Media Literacy Education**

Contemporary education must adapt to accommodate linguistic diversity, media diversification, and multimodal discourse. Thus, the new pedagogy should incorporate new literacies beyond

reading and writing, reflecting the dynamic interactions between individuals and knowledge sources in digital environments. This shift requires constant pedagogical revision to foster social volatility and equip learners with relevant and suitable skills for the knowledge society (Frau-Meigs & Hibbard, 2016; Kress, 2001). MIL researchers and practitioners have become aware of the need to radically adapt their practice to include contemporary literacies on a daily basis, creatively expand their ways of application, and focus on younger and diversified populations. It is urgent to work together to set a single framework and criteria for evaluating MIL interventions with the aim of creating a reliable body of comparable outcomes.

Research consistently shows that educational interventions that promote media literacy skills, critical thinking, and deep reasoning have positive impact on individuals' ability to engage critically with information and manage content, shaping attitudes, perceptions, and critical reading abilities (Vraga et al., 2009).

The development of artificial intelligence applications on top of the available state of the art "traditional" technology presents a further significant challenge for educators: they must be able to gain quick knowledge and skills in order to instruct students how to master photo-optical skills (perception of visual stimuli), reproduction skills (using digital tools to produce new content), production skills (knowledge construction from non-linear information elements, use of hypertext structures, etc.), capacity to evaluate information presented in various modes (critical assessment of relevance, quality, and reliability), socio-emotional skills (perception of cyberspace rules and applications), real-time parallel reasoning skills (capacity to simultaneously process large volume of stimuli, as in online teaching), along with critical evaluation skills etc. (Eshet-Alkalai, 2007; 2012).

Furthermore, misinformation online poses one more significant challenge, while it can even diminish the value of the very evidence used in teaching (McDougall et. al., 2019). While the decline in trust in traditional information institutions complicates the attribution of credibility to any particular type of sources (Duran et al., 2020; Hobbs & Frost, 2003), comprehensive understanding of digital media, critical analysis of news and advertising, and awareness of legal and ethical issues in media consumption and production are important skills for digital citizens and media users of any age. Media literacy is crucial for restoring trust in information and rationalize media consumption.

In this context, there is growing interest in educational interventions and research surrounding media literacy, particularly in response to concerns about misinformation and 'fake news' in the digital age. Collaborations between researchers and practitioners aim to design effective curricula, incorporating techniques like critical thinking, verification, and media literacy. The COVID-19 pandemic has accelerated the need for large-scale interventions in the evolving digital landscape, emphasizing the importance of new literacies (Edwards et al., 2021; Sivek, 2018).

## **Media literacy in formal education**

The literature shows that educational interventions that introduce elements of MIL skills (critical thinking, evaluation of information sources, documentation, media and news knowledge, etc.) produce consistently positive effects on the ability to critically engage with information (Michailidis, 2018; Sobers, 2008). Moreover, many studies find that perceptions of source credibility and the ability to critically assess their quality influence an individual's attitude toward misinformation in specific and information in general (Vraga et al., 2009).

Quantitative studies have confirmed that MIL interventions can have a positive impact on attitudes and perceptions about content production, message comprehension, writing, and critical thinking (Hobbs & Frost, 2003), or media structures and scales of influence (Duran et al., 2008). Researchers also show that MIL skills can have a positive impact and stimulate learning in non-media-related areas, too (Sobers, 2008). Other studies, which measure the interaction of youth participation programs with the general community, have found that targeted teaching of MIL principles has a positive impact on critical reading of news, interaction of young people with peers, and political debate (Michailidis, 2018). Also, news literacy studies have shown that media & news literacy skills can mitigate the perception of bias (Vraga et al., 2009).

Moreover, educational interventions based on deep, analytical, time-and-resources sponsoring thinking, activating the so called “system type 2 reasoning” (Kahneman, 2013), appear to be more effective than those based on automatic responses (Edwards et al., 2021). These interventions are more time consuming and require greater cognitive engagement with the subject (fact-checking, coaching for evaluation, or other techniques, etc.) and give more effective, and often longer-lasting, results as regards the ability to manage information (Rapp & Salovich, 2018). In addition to other types of MIL skills that can be offered in the school framework, Lee and Soep (2016) suggest “critical computational literacy” to be added to the new pedagogical and conceptual framework as combining critical literacy and computational thinking. Valtonen et al. (2019) also suggest that media literacy at the school level should include an understanding of both algorithmic thinking and the principles of computing. It has been shown that algorithmic and computational thinking (Lee & Soep, 2016), as well as principles of ICT and artificial intelligence (Valtonen et al., 2019), are more effective when combined with critical media literacy.

Further, educational interventions encouraging critical engagement with news content, as well as gaming and gamification techniques, seem promising in enhancing critical thinking skills, while behavioural interventions (Kozyreva et al., 2020) aim to empower users in digital environments. The concept of “civic media literacy” emphasizes ethical information sharing in civic engagement, highlighting the role of MIL in addressing misinformation and fostering active citizenship (Brennen et al., 2020; Middaugh, 2018).

## **MIL and challenges in educational interventions**

Media consumption in the 'post-truth' and 'fake news' era have become part of academic discourse across disciplines. The COVID-19 pandemic in the years 2020-2021, on the one hand with the compulsory online education due to quarantine and on the other hand with the increase of misinformation about health issues, can become a catalyst for change, underlining the need for large-scale measures and for interventions with new types of literacy in the evolving political and digital landscape (Brennen, et. al., 2020).

There are several challenges and issues surrounding media literacy interventions and research, including the lack of standardized approaches for assessing the effectiveness of pedagogical interventions, jeopardizing comparisons across different programs and over time. There's also over-focus on addressing distortions such as disinformation, rather than changing behaviour. Traditionally MIL research tends to focus on many different issues such as the importance of information reliability, verifiability of sources, development of critical thinking, and so on; however the role of emotion in the consumption of online content in general, and news in particular, remains marginally studied (Sivek, 2018); on the other hand, media landscape technology is evolving rapidly and we see that digital AI algorithms already include elements of emotions in the applications with which users interact. The complexity of the digital media environment, including factors like AI algorithms and dynamic systems, poses more challenges for standardizing MIL programs.

Meantime, while media literacy can provide a tool for any lesson, it is not integrated as a horizontal capacity building approach in the curriculum structure. Creativity, critical thinking, communication skills, wise media consumption and production, news literacy – all these new “subjects” cannot be understood as units or even as lessons at school, but as horizontal topics that run through the curriculum map and its strategic planning and are part of every lesson, in the same way as literacy and numeracy. The need for a change in the mentality of curriculum planning is evidenced in a 2022 survey in the context of my doctoral thesis, where 1300 students of the Aristotle University of Thessaloniki state that they need systematic training in media and news literacy. In specific, the survey revealed that the students who were self-MIL-trained in seminars, workshops or lectures outside their University, stated that they had better practical skills in MIL compared to those who had followed such courses inside the University, and far better skills compared to those who had not received any MIL training at all. Such challenges in research design, implementation, and evaluation are coupled with the lack of comprehensive databases and longitudinal outcome evaluations. Thus, the need for interdisciplinary approaches and a unified MIL framework is emphasized, along with considerations for future research and policy initiatives (Frau-Meigs, & Hibbard, 2016; Livingstone, 2011). Taking into account all the above challenges, specific recommendations for MIL researchers and practitioners are proposed in the literature:



- ✓interdisciplinary cooperation to exploit research findings and limitations
- ✓broader MIL applications to address distortions such as disinformation
- ✓improving the range of samples in surveys
- ✓widening the range of platforms
- ✓adopting a single framework for MIL assessment
- ✓standardization of criteria and methodologies in MIL research
- ✓comparability of interventions
- ✓regular dialogue between MILE researchers and practitioners

(Edwards et al., 2021)

To the above, the following should be added:

- ✓adoption of uniform terminology for MIL concepts both in research and in pedagogical interventions, so as to allow comparability and monitoring, as well as the building of robust bibliography
- ✓integrating learning theories into MIL research and implementations

### **Education at a crossroad**

MIL education is currently in transition. Undoubtedly, there is a window of opportunity, but there are also several risks. We need to be absolutely clear about our priorities and ambitions. Technology never functions in a vacuum: cultural, social, political, and economic developments are all correlated with technical advancements. Today's media landscape is changing not just in terms of technology but also in terms of how personal identity is constructed. The circumstances in which policy is made are not of our choosing; rather, they are the result of technological advancement and the synthesis of more general, often incongruous, social, economic, and political trends.

So, there are opportunities as well as risks in the field of media and information literacy. Setting specific goals and targets for MIL is essential to ensuring that all dimensions are covered in full in the curriculum. MIL Experts are essential advisors to the drafting of a National Strategy, helping decision-makers balance programmes. As regards tertiary education, by making MIL courses mandatory, Schools of Pedagogy and Communication should first set the example and equip upcoming teachers with the necessary knowledge and abilities. Furthermore, it is imperative in

higher education to provide suitable horizontal curricula that furnish all professions with sophisticated MIL competencies, empowering them to skilfully manoeuvre the intricacies of the contemporary media environment (Chryssanthopoulou, 2023).

Thus, there is urgent need to develop appropriate MIL curricula nationally and across EU countries, considering all challenges in implementation, teacher training, and engaging younger generations through diverse, inclusive, attractive and sustainable education strategies (Eshet-Alkalai, 2006; McDougall et al., 2018; Sivek, 2018).

### **A Greek case**

Since 2021 the Greek Ministry of Education has included digital skills in the official school curriculum at the secondary level as one of the many courses of the hourly course "Skills Workshops", squeezed between a fan of different -and irrelevant- other topics. These “digital skills” courses, however, are currently delivered by teachers who have not received any training on this subject. Also, no single pedagogical curriculum has been established for MIL, nor are specific directions provided, so each instructor's understanding of the field, as well as his/her academic training, has significant impact on students' learning experiences. In practice, teachers translate and adapt the MIL concepts and practices as they see fit for their working conditions, their own code of ethics and the prevailing technological environments (Kajimoto & Fleming, 2019).

Furthermore, the great majority of "educational interventions" outside of formal education that have been put into place in Greece in recent years are disjointed ad hoc training practices in very specific dimensions of digital literacy, mostly within the framework of European programmes. These are typically conducted without any large and consistent body of scientific evidence, without reference to learning theories, and without any sort of evaluation of the outcomes. The speakers or “trainers” are professionals from a variety of fields, but they are not trained in the principles, practices, or pedagogy of Media Literacy. The majority of these initiatives result from private initiative, and they are scattered, discontinuous, and fragmented in nature.

These actions' primary focus is teaching kids, teens or seniors how to utilise new technology or become familiar with fundamental features of the most widely used digital applications or use media as child-monitoring tools. On the other hand, the concepts of digital skills in the general public debate usually refer to issues such as online security or personal data protection, while in the media sector they are mainly related to disinformation. This fragmented picture is complemented by a plethora of surveys, publications or programs, which do not follow any generally accepted criteria, but are summed up in packs of “literature”, from which the rapporteurs draw on a preferential basis.

However, university students in Greece state that they wish to be formally MIL educated. As mentioned above, in my research conducted in the framework of my doctoral dissertation, I found that most young people (in a sample of 1300 graduate and post graduate students of Aristotle University of Thessaloniki) have better MIL skills if they have studied and know the significance and meaning of MIL concepts; so, it seems that theory drives and reinforces practice. In specific, those who had received training and had studied MIL concepts had better performance when managing online information, dealing with multiple sources, differentiating true from false information, identifying reliable sources, understanding the difference between fact and opinion in news, tackle large volumes of multimedia content, controlling bias and exercising critical reasoning when consuming online content, behaving more rationally in social media, and understanding the role and function of media.

Although most seem to know 'how', they seemed that they do not know 'why'; and most state that they urgently need to develop not only digital but also cognitive MIL skills. What is really considerable is that though most participants were self-assessed as media literate, the vast majority asked for formal MIL education to be introduced in the university curriculum.

From the international literature, research and practice, but also from my research, it is clear how important is the introduction of MIL courses in higher education. Schools of Pedagogy, Journalism and Communication should urgently re-evaluate their programs to be the first to meet the requirements of this field. As a pedagogical tool, then, MIL will give university students of all disciplines the opportunity to become effective professionals, while it will provide educators-to-be with the skills to become adequate future MIL trainers in primary, secondary and lifelong education, for media literacy for all.

### **The need for a national strategy**

Considering the above challenges, the integration of Media and Information Literacy in formal education and the development of relevant curricula is urgently required. The inclusion of general and specialized MIL courses in universities is necessary, especially in Schools of Pedagogy, Journalism, Communication, etc. Today, ICT are not just tools in the classroom, but need to become the subject of study in themselves. The convergence of mainstream and AI educational technologies requires readiness for a “digital” future. Educators must be constantly trained not only to organically use ICT in their work, but to be updated in how to analyse and master media, in order to teach pupils and students. At the same time, prudence is required in exploiting the potential of selected productive AI technologies in an ethical way, emphasizing the responsibility of users, creators and controllers. Preparedness is crucial, as digital technologies can significantly impact both teaching and learning and require new ways of thinking.

In order to reach this stage, the following seem to be required

- ✓National strategy
- ✓National Skills Assessment Criteria
- ✓MIL policies and pilot projects
- ✓Establishment of MIL pedagogical models
- ✓Reorganization of school curricula with MIL as a horizontal skill
- ✓General MIL courses in all Universities
- ✓Specialized MIL course in relevant Departments (Media, Pedagogy, etc.)
- ✓Teacher training in skills and knowledge
- ✓MIL assessment and certifications
- ✓Teacher Tools
- ✓MIL experts as curriculum advisors and developers
- ✓Improving MIL skills of media and journalists
- ✓Exchange of best practices with other national authorities

The fragmented nature of MIL initiatives in Greece reflects a need for unified efforts to facilitate exchange of know-how. Overall, there's a call for greater standardization and coordination in media literacy programs, both in Greece and worldwide, to address the evolving media landscape effectively (Brennen et al., 2020; Kajimoto & Fleming, 2019). Emphasis should also be placed on the under-studied role of emotions in online content consumption. While many MIL approaches target critical thinking, translating this knowledge into behavioural change remains a challenge.

### **Conclusion and suggestions**

Today, the complex interaction between humans, machines, big data and AI poses further challenges to post-digital critical media literacy: (1) We need to reinvent existing theories and practices for the post-digital context; (2) Renewed theories and practices need to find a new balance between the technological and political aspects of media literacy, addressing the problem of the unpredictability of the process of lifelong media literacy education; (3) Critical media literacy needs to be extended to non-human learning systems in order to develop 'literate machines' with which people will interact, along with appropriate sets of content from which machines will

learn in a holistic and ethical manner, without replicating stereotypes or biased behaviours encountered in random online materials. So the keywords for new policies are:

- ✓Reinventing theories and practices for the post-digital environment
- ✓Balance between technological and political dimensions
- ✓Addressing the unpredictability of lifelong learning
- ✓Supporting Learning Systems (human or non-human) and securing "uncontaminated" content for Machine Learning and Artificial Intelligence

The paradigm shift in education will be based on Media Literacy. It is urgent to enhance critical thinking skills, particularly among children and less privileged populations, so that they can navigate the complexities of the digital landscape. Media literacy education has to be understood beyond the tasks of decoding messages, incorporating values, improving practices, and introducing processes that empower individuals to address social problems effectively. Above all, MIL will highlight the ways to resolve challenges posed by the convergence of technologies and artificial intelligence in the post-digital era. The transition in education calls for re-evaluation of curricula and pedagogies to prepare students for their future roles.

In the post-digital era, Media Literacy has a crucial role to play in the conception, understanding and development of all forms of intelligence. But our field is still new and we have a lot of questions to answer and a lot more to ask. We move forward in this journey by sharing our knowledge, challenges and proposals in an interdisciplinary community. Today's media structures require a holistic approach; thus, media literacy must be widely understood as more than the critical decoding of messages. We need to understand media as an infrastructure with materiality (Forsler, 2018) and to perceive learning no longer as a process of knowledge acquisition that is measurable, comparable and predictable, but as an ever-evolving and largely unpredictable process (Biesta, 2010). We need to reimagine media literacy and disconnect it from instrumental pedagogy (e.g. fact-checking) and policy-making, but focus on values, practices and processes that will prepare young people to use the new means to solve lasting social problems, by reinventing spaces for meaningful engagement, by creating positive dialogues in communities, by opening opportunities for effective action and by facilitating practices that produce and reproduce the sense of the world we share with others (Mihailidis, 2018)

In the continuous interaction between human and machine intelligences, it is necessary to modernize our perceptions of education and learning and understand that Media Literacy is the only way to guide students and adults to navigate the opportunities offered by digital technologies, so as to reach out to new ways of learning, able to make ethical and rational use of the digital knowledge society.

## References

- Biesta, G. J. (2010). Why ‘what works’ still won’t work: From evidence-based education to value-based education. *Studies in philosophy and education*, 29, 491-503.
- Brennen, J. S., Simon, F. M., Howard, P. N., & Nielsen, R. K. (2020). *Types, sources, and claims of COVID-19 misinformation* [Doctoral dissertation, University of Oxford].
- Chryssanthopoulou, K. (2023), *Media and News Literacy in digital knowledge societies: information and modern literacies*, Doctoral Dissertation, School of Journalism, Aristotle University of Thessaloniki
- Cope, B., & Kalantzis, M. (2015). The Things You Do to Know: An Introduction to the Pedagogy of Multiliteracies. *A Pedagogy of Multiliteracies*, 1-36. [https://doi.org/10.1057/9781137539724\\_1](https://doi.org/10.1057/9781137539724_1)
- Duran, G. (2020). Unmasked in the Plandemic: Misinformation during the novel coronavirus (SARS-CoV-2) pandemic.
- Edwards, L., Stoilova, M., Anstead, N., Fry, A., El-Halaby, G., & Smith M. (2021). Rapid Evidence Assessment on Online Misinformation and Media Literacy: Final Report for Ofcom. [www.ofcom.org.uk](http://www.ofcom.org.uk).
- Eshet-Alkalai, Y. (2012). Thinking in the Digital Era: A Revised Model for Digital Literacy. *Issues in Informing Science and Information Technology*, 9(2), 267–276. <https://doi.org/10.28945/1621>
- Eshet-Alkalai, Y., & Geri, N. (2007). Does the medium affect the message? The influence of text representation format on critical thinking. *Human Systems Management*, 26(4), 269–279. <https://doi.org/10.3233/hsm-2007-26404>
- European Commission (2016). Mandate of the Expert Group on Media Literacy. [https://ec.europa.eu/information\\_society/newsroom/image/document/2018-28/mandate\\_of\\_the\\_mleg\\_1FBD6B74-91A1-D960-0A845CB02AD1CBF4\\_53425.pdf](https://ec.europa.eu/information_society/newsroom/image/document/2018-28/mandate_of_the_mleg_1FBD6B74-91A1-D960-0A845CB02AD1CBF4_53425.pdf)
- Forsler, I. (2018). Towards infrastructure literacy in media education. *Journal of Media Literacy* 65(1–2), 87–91. <http://sh.diva-portal.org/smash/record.jsf?pid=diva2%3A1269316&dswid=3969>
- Frau-Meigs, D., & Hibbard, L. (2016). Education 3.0 and Internet Governance: A New Global Alliance for Children and Young People’s Sustainable Digital Development. Centre for International Governance Innovation and Chatham House. <https://www.cigionline.org/publications/education-30-and-internet-governance-new-global-alliance-children-and-young-peoples/>
- Hobbs, R., & Frost, R. (2003). Measuring the acquisition of media-literacy skills. *Reading Research Quarterly*, 38(3), 330–355. <https://doi.org/10.1598/RRQ.38.3.2>
- Johnson, S. (2008, February 7). Dawn of the digital natives. *The Guardian*. <https://www.theguardian.com/technology/2008/feb/07/internet.literacy>
- Kahneman, D. (2013). *Thinking, Fast and Slow (1st ed.)*. Farrar, Straus and Giroux.
- Kajimoto, M., & Fleming, J. (2019). News Literacy. *Oxford Research Encyclopedia of Communication*. <https://doi.org/10.1093/acrefore/9780190228613.013.848>
- Kertysova, K. (2018). Artificial Intelligence and Disinformation. *Security and Human Rights*, 29(1), 55–81. <https://doi.org/10.1163/18750230-02901005>

- Kress, G. (2003). *Literacy in the New Media Age*. Routledge.
- Lee, C. H., & Soep, E. (2016). None but ourselves can free our minds: Critical computational literacy as a pedagogy of resistance. *Equity & Excellence in Education*, 49(4), 480-492.
- Livingstone, S. (2004). Media Literacy and the Challenge of New Information and Communication Technologies. *Communication Review*, 7(1), 3–14. <https://doi.org/10.1080/10714420490280152>
- Livingstone, S. (Ed.). (2011). *Media literacy: ambitions, policies and measures*. COST: European Cooperation in Science and Technology.
- McDougall, J. (2019). Media Literacy versus Fake News. *Media Studies*, 10(19), 29–45. <https://doi.org/10.20901/ms.10.19.2>
- Middaugh, E. (2018). Civic Media Literacy in a Transmedia World: Balancing Personal Experience, Factual Accuracy and Emotional Appeal as Media Consumers and Circulators. *Journal of Media Literacy Education*, 10(2), 33–52. <https://doi.org/10.23860/jmle-2018-10-2-3>
- Mihailidis, P. (2005). Media Literacy in Journalism/Mass Communication Education: Can the United States Learn from Sweden? *Journalism & Mass Communication Educator*, 60(4), 415–428. <https://doi.org/10.1177/107769580506000409>
- Mihailidis, P. (2012). Media Literacy and Learning Commons in the Digital Age: Toward a Knowledge Model for Successful Integration into the 21st Century School Library. *The Journal of Research on Libraries and Young Adults*: American Library Association.
- Mihailidis, P. (2014). *Media Literacy and the Emerging Citizen: Youth, Engagement and Participation in Digital Culture*. Peter Lang Inc.
- Mihailidis, P. (2018). *Civic Media Literacies: Re-Imagining Human Connection in an Age of Digital Abundance (1st ed.)*. Routledge.
- Rapp, D. N., & Salovich, N. A. (2018). Can't we just disregard fake news? The consequences of exposure to inaccurate information. *Policy Insights from the Behavioral and Brain Sciences*, 5(2), 232–239. <https://doi.org/10.1177/2372732218785193>
- Sivek, S. C. (2018). Both Facts and Feelings: Emotion and News Literacy. *Journal of Media Literacy Education*, 10(2), 123-138.
- Sobers, S. (2008). Consequences and coincidences: A case study of experimental play in media literacy. *Journal of Media Practice*, 9(1), 53-66.
- Valtonen, T., Tedre, M., Mäkitalo, K., & Vartiainen, H. (2019). Media Literacy Education in the Age of Machine Learning. *Journal of Media Literacy Education*, 11(2), 20-36. <https://doi.org/10.23860/jmle-2019-11-2-2>
- Vraga, E. K., & Tully, M. (2019). News literacy, social media behaviors, and skepticism toward information on social media. *Information, Communication & Society*, 24(2), 150–166. <https://doi.org/10.1080/1369118x.2019.1637445>
- Vraga, E. K., Tully, M., & Rojas, H. (2009). Media Literacy Training Reduces Perception of Bias. *Newspaper Research Journal*, 30(4), 68–81. <https://doi.org/10.1177/073953290903000406>

## **Foreword to the seventh thematic: Media Representations of social and political issues**

Stamatis Poulakidakos\*

The thematic section “Media Representations of Social and Political Issues” explores how various forms of media frame, shape, and communicate pressing social and political concerns. In an era where public opinion and discourse can be (heavily) influenced by media narratives, understanding these representations is crucial for grasping how societies perceive and respond to critical events.

The first paper is titled “A Human Tragedy or a Statistic? Media Framing of Greece’s Deadliest Migrant Shipwreck”. The objective of this study is to examine how the Greek media covered the June 2023 migrant shipwreck off the Greek coast of Pylos, which has been labeled as one of the deadliest migrant shipwrecks in the Mediterranean. The study was based on data from a quantitative content analysis and a sample of news stories from the online versions of five Greek news media outlets (EfSyn, Ta Nea, Kathimerini, Proto Thema, and Eleftheros Typos), representing diverse political spaces.

In “The Institutional Image of Femininities in an International Scandal,” the study explores whether MEP Eva Kaili became the face synonymous with the “Qatargate” scandal and how her gender characteristics made her the key figure for the attractiveness of the topic. To this end, quantitative content analysis is applied to Francophone newspapers from December 2022 to February 2023.

The third paper is titled “The Effects of the Greek 'MeToo' Movement on Representations of Femicide in the News Media and Social Media”. The subject of the present effort is to examine the effect of the ‘Metoo’ movement in Greece in reference to the way femicides are covered by the print and television news media, as well as the impact of the movement on users of social media and especially on Facebook. The research method used in order to provide answers to the main research questions is qualitative content analysis.

Finally, “Commandos, Frigates, and Other Media Imaginations” analyses journalistic discourses during the televised debate among Greek political leaders ahead of the 2023 general election. It

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examines through Critical Discourse Analysis (CDA) whether and how journalistic questions reflect the Polarized Pluralist Model of media systems in an age of increased mediatisation.

This section provides a nuanced view of how media representations influence societal understanding of critical social and political issues, seeking to shape public discourse and public opinion accordingly.

# A Human Tragedy or a Statistic? Media Framing of Greece's Deadliest Migrant Shipwreck in the Dark Waters of Pylos

Panagiota (Naya) Kalfeli, Christina Angeli, Christos Frangonikolopoulos\*

## Abstract

The world has been suffering a series of crises, some of which have been related to migration and refugee issues. Public opinion regarding migration and asylum-seeking has been greatly influenced by the media. In light of the above, the objective of this study is to examine how the Greek media covered the June 2023 migrant shipwreck off the Greek coast of Pylos, which has been labeled as one of the deadliest migrant shipwrecks in the Mediterranean. The study was based on data from a quantitative content analysis and a sample of news stories from the online versions of five Greek news media outlets (EfSyn, Ta Nea, Kathimerini, Proto Thema, and Eleftheros Typos), representing diverse political spaces. A broader set of criteria for content analysis was used, including absence of refugee and migrant voice in media content, dehumanization, absence of solutions, and context, among many others. The findings revealed a more subtle anti-migration narrative that lays all the responsibility on illicit smuggling networks and emphasizes the need for more stringent regulations with the aim to discourage migration.

**Keywords:** media; framing, peace journalism, refugees, migrants, shipwreck, Pylos, Greece.

## Introduction

Early on June 14, 2023, a "rusted" fishing vessel named *Adriana* sank off the coast of Greece while transporting, from Libya to Italy, hundreds of desperate migrants and asylum seekers, primarily from Pakistan, Syria, and Egypt. Before the ship sank, an estimated 750 people were on board. Of the people on board, 104 were saved alive during the subsequent rescue operation, while the remaining 82 were found dead. Numerous additional people still missing. Among them, there were a lot of women and children who were detained below deck and had limited chances to survive.

Following the Pylos wreck, migration rose to the top of the political agenda in Greece and in Europe. The migrant boat disaster off the coast of Greece was named as "the worst tragedy ever" in the Mediterranean Sea by European Commissioner for Home Affairs, Ylva Johansson. In remembrance of the victims, the Greek government proclaimed three days of national mourning. Nevertheless, there were serious concerns about the Hellenic Coast Guard's response to the fishing boat. The Greek government, according to critics, ought to have taken action sooner to prevent the

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ship from capsizing. Greek officials responded that they were aware of the boat's presence, but the people on board declined help offers. Overall, the Pylos shipwreck sparked outrage all over Greece and the EU on inadequate migration policies.

At the same time, the Pylos migrant shipwreck evoked memories of the Lampedusa disaster, which occurred precisely ten years ago and in which 366 persons lost their lives when a ship carrying about 500 people from Ghana, Somalia, and Eritrea sank a few hundred meters off the coast of Lampedusa, a small island in southern Italy. As is frequently the case following events of this kind, trafficking organizations were largely held accountable for exploiting people's desperate attempts to go to Europe (Dines et al., 2015).

Similar to what happened with the Lampedusa wreck in the past (Dines et al., 2015), the tragedy at Pylos was briefly brought, due to the size of human loss, to the forefront of European political discourse and international media attention. Within this context, this paper employs framing and peace journalism and uses a quantitative content analysis of 447 news pieces published in June 2023 in five online Greek media outlets, to examine how refugees and migrants are portrayed in the media during a humanitarian emergency, such as a migrant shipwreck. The term "framing" in this article describes the way in which the Greek media outlets under examination have used a certain interpretive lens -that of peace or conflict journalism- in their reporting. Furthermore, peace journalism theory (Galtung, 2006) and the corresponding peace journalism model for the analysis of mediated representations of migration (Kalfeli et al., 2022b) offer a broader research perspective by looking at underreported news story elements like the voice of vulnerable groups and non-elite discourses.

### **Media Framing of Refugees and Migrants**

News stories on migration issues are portrayed fragmentarily rather than in a continuous flow (Youngblood, 2017). That is, each time refugees and migrants are involved in some kind of illegal activity, enter a country without documents, or have a boat capsize in the sea, the news spotlights momentarily turn on, but this interest disappears when the circumstances are 'normal'. But in doing so, the audience comes to associate migration with hardship, danger, and conflict.

A wide number of international studies on how migration and asylum-seeking are portrayed in the media and on social media have revealed certain common patterns (Aldamen, 2023). These studies have taken place in a number of countries, including the US, France, Belgium, and Norway. Most significantly, refugees and migrants have been seen as "enemies at the gate", attempting to penetrate Western countries, and migration has typically been characterized as a threat to public health and security (Esses et al., 2013; Kalfeli et al., 2022a; Kim et al., 2011; Thorbjornsrud, 2015; Van Gorp, 2005). Moreover, migration has been portrayed by the media as a problem that

continuously incites conflict between different social groups, political parties, or even states (Eberl et al., 2018; Kalfeli et al., 2022b). As a result, migration has been characterized mostly negatively and as a cause of conflict.

Unsurprisingly, news regarding migrant shipwrecks and deaths makes up a large portion of the media narrative concerning arrivals on European gates. However, not much research has been done in this field. In the few studies that have truly examined this topic, the media's ambivalent portrayal of migrant shipwrecks is evident (Benert & Beier 2016; Mancini et al., 2021; Zerback, et al., 2020). Mediterranean migrants are seen in this light as both threats and victims who must be "saved," making the journey into a matter of life and death. For example, in the case of Lampedusa, which serves as a model for how migrants' shipwrecks are portrayed in the media (Giubilaro, 2018), migrants and refugees were defined, portrayed, or framed as either invaders or victims.

Furthermore, apart from threat and victim narratives, media portrayals of migrant boat disasters exhibit certain distinct features (Moreno-Lax, 2018). For instance, the media frequently reports the number of victims first, followed -sometimes in a dramatic way- by the fact that these people are dead. The dehumanizing narrative is further reinforced by visual framing techniques, such as photographs shot from above -possibly from a helicopter- that present dead bodies floating on the surface of the blue sea (Giubilaro, 2018). By using object metaphors, many media sources refer to smuggling as "business" or "commerce" referring to the trafficked as "currency", "shipments" or "cargo" and "objects to manipulate" (Montagut & Moragas-Fernández, 2020). Meanwhile, smugglers are referred to as "machines" (Gregoriou et al., 2022).

Despite the fact that media are often unaware of the nationality of those individuals, many media outlets label them as migrants without much thought. The term "migrant" connotes, across all languages, that the person who is migrating made on its own the decision to migrate overseas in order to improve their financial situation (Benert & Beier, 2016). This might lead to a victim-blaming effect (Gregoriou et al., 2022). In conclusion, even though there is some acknowledgement that these people may be "legitimate" victims, media outlets frequently suggest that they caused their own misfortune, largely ignoring the systemic factors that drive migration and the risk of victimization associated with migration (Gregoriou et al., 2022).

### **A Peace Journalism Lens on Media Coverage of Migration**

In light of this, this study investigates how the Pylos migrant shipwreck was portrayed in Greek media outlets, transcending the traditional "threat and victim" dichotomy. It does this by utilizing peace journalism and framing theory. More specifically, a frame is described in this study as the underlying organizational concept that provides strategies for identifying, explaining, and understanding a specific issue (the migrant shipwreck in this case). Stated differently, a frame

provides guidance or recommendations to the recipient for how to understand the message in light of the idea it expresses (Van Gorp, 2005).

Within this context, Lynch and McGoldrick (2005), by drawing on Entman's (1993) understanding of framing, established that peace journalism is, in fact, a "frame" that proposes a problem's definition, causes, moral assessment, and suggested course of action for resolving it. The term "framing" in this article describes how the five Greek media outlets that were the subject of the study highlighted certain aspects of the migrant boat accident while ignoring others, used particular language, made contextual connections, and cited particular sources. This gave the readers the opportunity to read about the Pylos wreck while also viewing it from a certain perspective, such as through the lens of peace or conflict journalism.

Born out of criticism of war and conflict reporting, peace journalism emerged in the 1960s. Galtung and Ruge (1965) argued that conventional war and crisis reporting follows certain norms that are rarely questioned. The media regularly focuses on official sources, such as politicians, members of the military forces, and law enforcement officers, under a conflict journalism style, but what about the voices of common people and marginalized communities? Conflict journalism frequently focuses on the visible aspects of wars and crises (e.g. the dead and the injured), but what about their causes, the conditions leading up to them, the consequences they have on people, and possible solutions? While conflict journalism focuses on the things that divide different groups (us vs. them), what about stories that highlight the areas in which various sides can agree (Galtung 1998, 2006)? Peace journalism was suggested by Galtung as an alternative to conventional war reporting.

Studies of peace journalism throughout several decades concentrated on how the media reported on acts of open violence and conflict (Lee & Maslog, 2005). Recent studies (McMahon & Chow-White, 2011; Shaw et al., 2011; Tivona, 2011), however, have expanded the study of peace journalism beyond wartime contexts and examined its applicability to issues of gender, religion, migration and human rights. The scope of peace journalism has been broadened by Kalfeli et al. (2022b) to specifically address diversity and migration.

In particular, Kalfeli et al. (2022b) developed a new paradigm of peace journalism based on Galtung's initial classification of peace journalism and war journalism (1998) for the investigation of media portrayals of migration. Because of the proactive nature of Galtung's (1969) definition of "positive peace", which is the absence of both direct and indirect violence or, alternately, the absence of social injustice and inequality (Kalfeli, 2022b), the theory of peace journalism was applied in a non-war setting. Since it also aims to explore the less studied -both positive and negative- aspects of news coverage, such as voice (of refugees/migrants), focus on human stories, benefits of migration, political conflict or solutions, and human stories, the new model is thought

to offer researchers a useful analytical tool for the examination of a multilayered representation of migration.

This study largely relies on the model created by Kalfeli et al. (2022b) to achieve its current objectives because it uses the majority (12 out of 16) of the original schema's peace and conflict indicators. At the same time, based on a thorough pilot content analysis of a representative sample of news reports, parts of the original model's indicators are either eliminated or broadened to meet the current framework of the migrant shipwreck in Pylos. In light of this, the current study seeks to answer the following main research questions:

RQ1: How is migration portrayed in the Greek media outlets under study, considering the boat shipwreck in Pylos, one of the deadliest migrant disasters in the Mediterranean in recent years, using a peace and conflict journalism theoretical perspective?

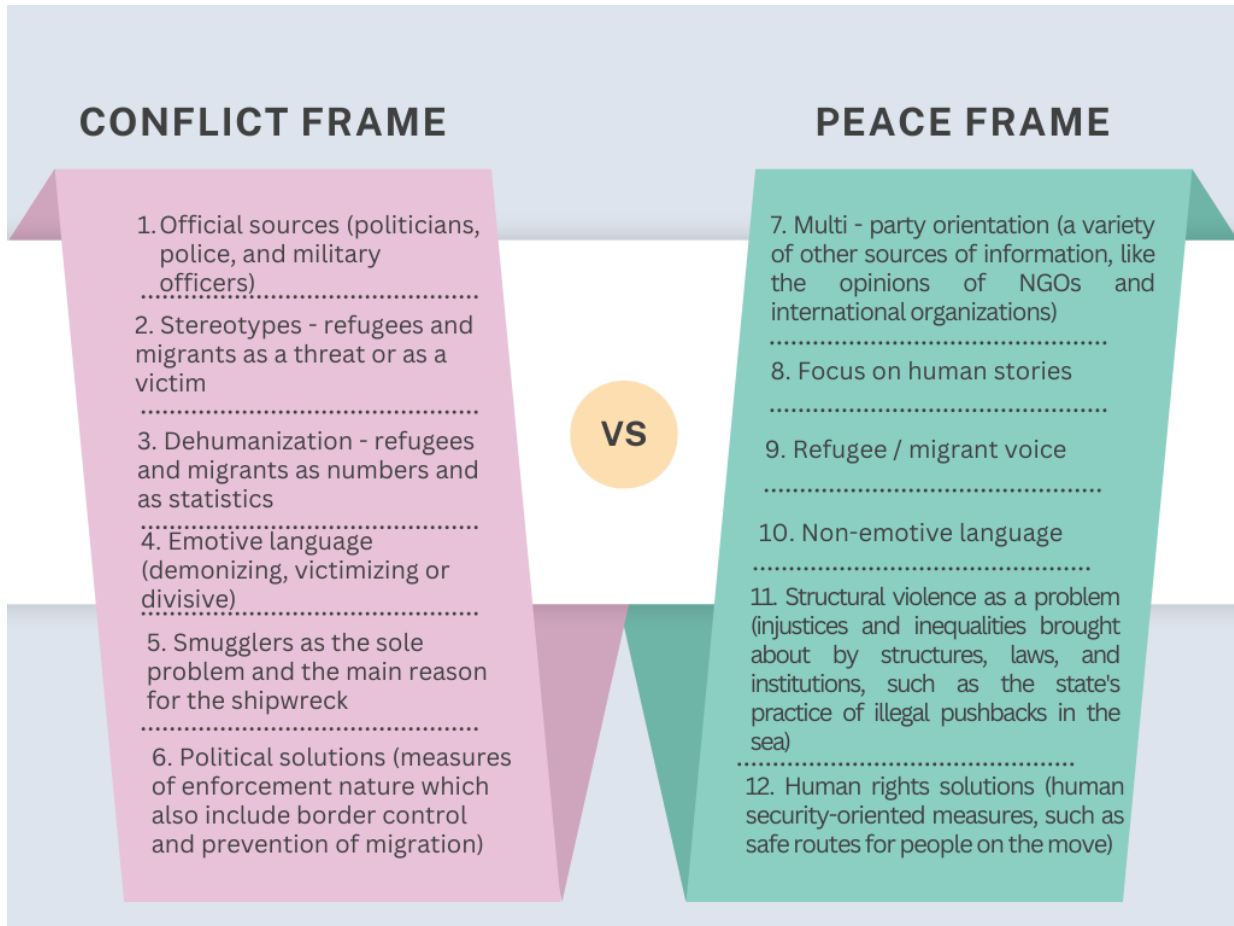
RQ2: Among the several media outlets, what are the most consistent indicators of a conflict or a peace frame in terms of frequency?

## **Method**

Based on an online content analysis of 447 news stories from five Greek news media outlets, this study aims to provide light on the migrant shipwreck that happened early on June 14, 2023, off the coast of Pylos, in southern Greece. In particular, news articles were gathered from the websites of five newspapers: EfSyn (progressive, left-wing), Ta Nea (center), Kathimerini (center-right), Proto Thema (right-wing populist) and Eleftheros Typos (right-wing). Two factors were taken into consideration when selecting the media outlets: first, their ranking rates (some, like Ta Nea, Kathimerini, and Proto Thema, were among the most popular when the study began in June 2023), according to SCImago Media Rankings (SMR); and second, their ideological leanings in order to represent the current political landscape in Greece, which is marked by a conservative right-wing government and a range of fragmented extreme right-wing, center-left, and left political spaces. Opinion pieces, news reports, and feature stories were all included in the individual story analysis unit. News items were coded from June 14, 2023, to June 20, 2023.

A codebook with twelve (12) indicators for content analysis was made using the theory of peace journalism, the relevant model on media framing of migration created by Kalfeli et al. (2022b), and a thorough pilot content analysis of a representative sample of news articles. The 12 indicators are used to look into different aspects of how the Pylos wreck was portrayed in the media, with six indicators used for a conflict frame and six indicators for a peace frame. In summary, the indicators encompass the following topics: language, official sources, international organizations and NGOs, refugee and migrant voice, threat/victim stereotyped framing, solutions, human stories, approach, and so on.

**Table 1:** Indicators of a conflict and a peace frame



Using the 12 coding categories presented in Table 1, a score of one (yes) or zero (no) was recorded for each indicator that was discovered in the news article. In terms of inter-coder agreement and reliability, 45 news items (10% from each media outlet) out of a total of 447 news items were coded by two independent coders who had received the required training. A percentage-agreement method was used to determine the agreement of the coding results and, in particular, the proportion of news stories on which the coders agreed out of the total number of news stories. To do so, we collected data from the two coders (the ratings from each coder for a set of items), we determined agreement (whether the two coders had given the same rating - Yes or No - for each item), calculated total agreements and computed percentage agreement. According to this measurement, coders' average percentage agreement ranged from 84% to 92%. Moreover, inter-coder reliability was calculated for each variable using Cohen's kappa, a measure that accounts for chance agreement, and ranged from .789 to .818, with .75+ indicating acceptable agreement beyond chance, according to Neuendorf (2002). Disagreements were resolved through discussion. Once the coding of the news stories and the reliability check were completed, we used the statistical package SPSS version 28.0 for Windows to proceed with the analysis. Descriptive statistics were

used to analyze the data, calculate frequencies for each coding category and make comparisons between different media outlets. Chi-square tests were done to assess the differences between categorical variables. The  $P < 0.05$  was considered to be statistically significant.

## Findings

The section that follows provides an overview of the study's main findings. The most prominent indicators of a conflict and a peace frame, as well as the differences and similarities among the many media outlets, are also emphasized in this context.

In the case under review, refugees and migrants are presented, in the vast majority of publications, that is, in 386 (86,4%) of news stories, as victims of the shipwreck, as bodies at risk. This is in contrast to the past, when refugees and migrants were frequently portrayed as a threat to the host society -for example, as invaders and as a threat to public safety and health (Kalfeli et al., 2022a). The magnitude of the disaster and the fact that numerous women and children were among the hundreds of individuals who drowned off the coast of southern Greece help to explain this change in media coverage. In addition, it might also have to do with the fact that the Hellenic Coast Guard and Greek authorities were heavily criticized for not doing enough to save the lives of the people aboard the boat that sank in June 2023. The following excerpts from Proto Thema and Eleftheros Typos demonstrate how the victim framing approach is strengthened by the language used, as a significant percentage of news stories use emotive vocabulary and terms like "hell" and "wet grave" among others, to describe the sea in which the wreck occurred:

*Shipwreck in Pylos: The Mediterranean Sea is a "watery grave" - Around 600 migrants on board the boat that sank in international waters off Pylos (Proto Thema, 14/6/23)*

*Shipwreck in Pylos: Journey to hell with the "Mother of Martyrs" - The tragic irony of the fishing boat's name (Eleftheros Typos, 16/6/23)*

As indicated by Table 2, 351 (78,5%) news items cited official sources (political elites, the Hellenic Coastguard). Because of this and the fact that official sources predominated in the media, criticism of the Greek government for not acting sooner to save the migrants was obscured. Rather, in nearly half of the news stories (48,8%), a large portion of the blame for the shipwreck was placed on the smugglers, as is usually the case after such incidents (Mancini et al., 2021), focusing on how criminal networks take advantage of desperate people on the move to increase their profitable business. A small number of news reports among them suggested that the migrants and refugees on board made on their own the decision to relocate overseas, which therefore added to their own suffering. This victim-blaming approach has also been noted in the past by Gregoriou et al. (2022).

*Shipwreck in Pylos: The Mediterranean at the mercy of smugglers - "Turnover" of millions, a hundred deaths (Proto Thema, 15/6/23)*



**Table 2:** Indicators of conflict frames in order of frequency of appearance

**Conflict Frame Indicators**

Indicators	Frequency of appearance (% of appearance in the news stories)
Refugees and migrants as numbers and statistics	380 (85%)
Refugees and migrants as a threat or as a victim As a threat As a victim	393 (88%) 7 (1.6%) 386 (86.4%)
Official Sources	351 (78.5%)
Emotional language	342 (76.5%)
Political solutions	274 (61.3%)
Smugglers as the sole problem	218 (48.8%)

**Table 3:** Indicators of peace frames in order of frequency of appearance

Peace Frame Indicators	Indicators	Frequency of appearance (% of appearance in the news stories)
	Structural violence as a problem	154 (34.5%)
	Non-emotional language	105 (23.5%)
	Multi-party orientation	103 (23%)
	Refugee / migrant voice	79 (17.7%)
	Focus on human stories	67 (15%)
	Human rights solutions	65 (14.5%)

It is also crucial to emphasize that these examples show us how, in one way or another, the identification of a problem also reveals the solutions that are used to address it. For instance, dismantling trafficking networks and limiting or stopping migrant departures are the primary solutions portrayed when the primary problem identified is migrant smuggling. Conversely, human rights law-based solutions -such as the necessity of creating safe pathways for migrants and refugees, for instance- were hardly presented (found in just 14.50% of the news articles, as seen in Table 3).

Furthermore, the assistance and treatment given to the survivors during the Hellenic Coast Guard's rescue operation following the capsizing of the boat and their relocation to a camp outside Athens were overemphasized. This is consistent with the findings of Giubilaro (2018) regarding the visual frames of search and rescue operations throughout the Mediterranean Sea, arguing that they replicate the narratives of humanitarianism and securitarianism associated with them. This strategy is discussed in more detail below [in the Discussion section].

*“The shipwreck brings to the fore once again, in the most tragic way, the need to dismantle the global human trafficking networks which place migrants’ lives in danger” [the Migration Ministry] said (Kathimerini, 14/6/23).*

*Coast Guard: Rescued 80 migrants off Pylos, in international waters (Proto Thema, 14/6/23)*

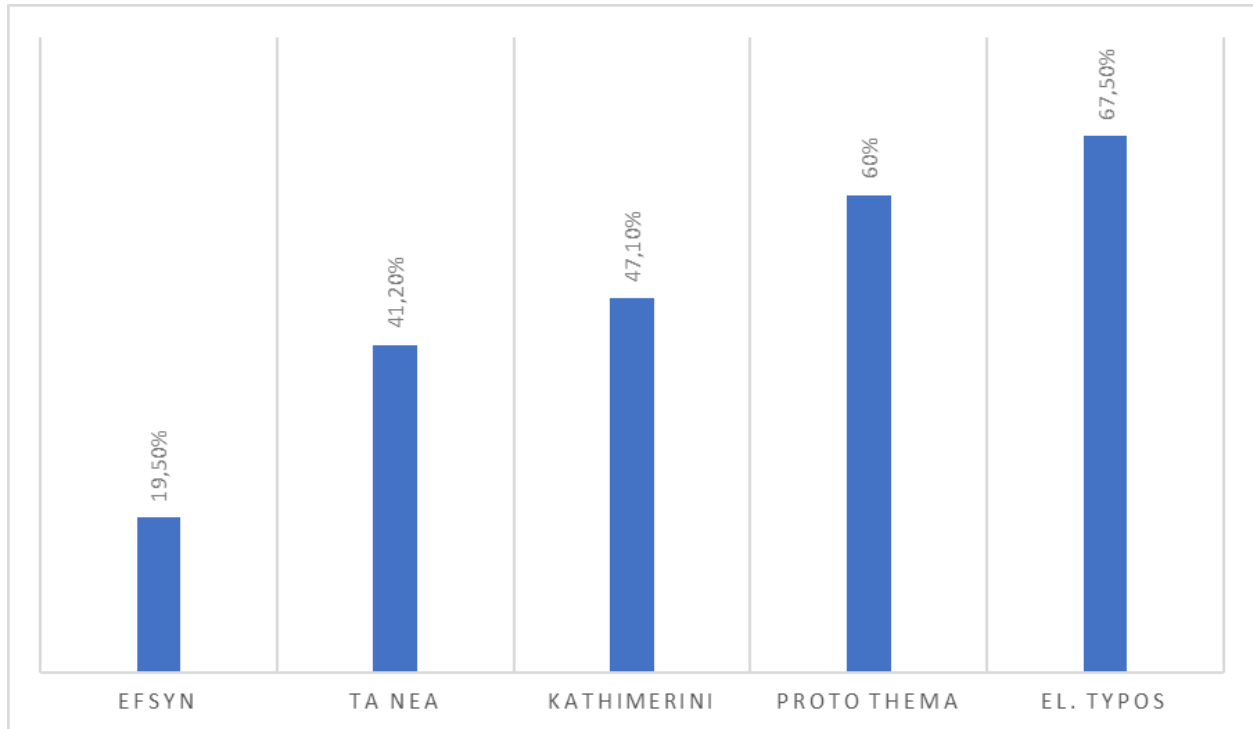
### **Variations and commonalities among the different media outlets**

Research results highlight significant variations and similarities in the way that the Pylos shipwreck was portrayed in the different media outlets. For example, content research revealed that the emergence of conflict or peace indicators is influenced by political affiliation (left or right). More precisely, in categories that conveyed a more salient pro- or anti-migrant attitude, significant differences were observed between media outlets with opposing political perspectives.

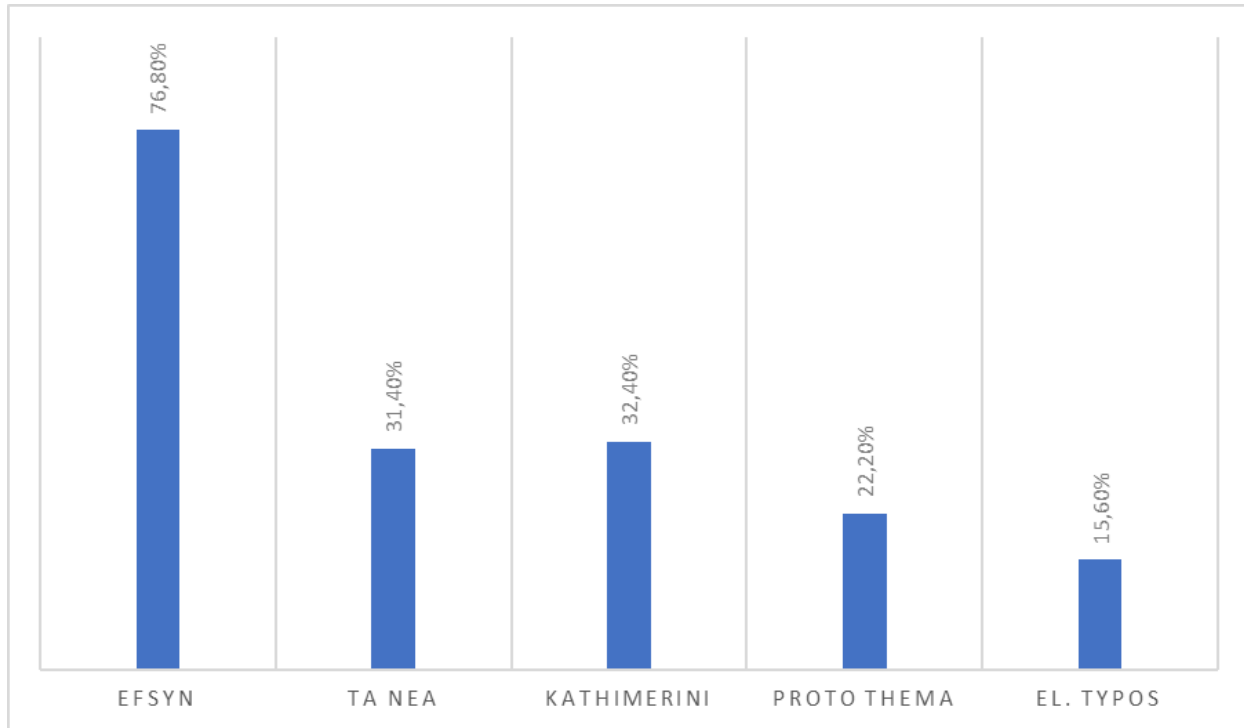
A Chi-Square analysis was performed to test the differences between media outlets for each variable. The level of significance was set at 0.05. The Chi-Square analysis of the frequency of appearance of each variable in the different media outlets showed that there is a statistically significant relationship of the 0.05 level in three categories: i) smugglers as the primary cause of the shipwreck in Pylos (p-value <.001), ii) structural violence as a problem (p-value <.001) and iii) focus on political solutions (rather than human rights solutions) (p-value <.001), that is, categories that express a more pronounced pro- or anti-migrant sentiment.

For instance, Eleftheros Typos (in 67.5% of its news stories) and Proto Thema (in 60% of its news stories) presented migrant smuggling as the primary cause of the shipwreck in Pylos. However, this percentage was significantly lower in the case of the left-wing EfSyn (19.5%) (Figure 1). Similarly, structural violence - that is, violence brought about by state structures, such as poor practices or coast guard delays - is presented in 15.6%% of the news stories of Eleftheros Typos, despite the Hellenic Coast Guard receiving harsh criticism from international organizations for acting too late. This indicator was, however, considerably more apparent in the left-wing Efsyn (in 76.8% of its news pieces) (Figure 2).

*The Coast Guard knew hours before that the fishing boat was rocking dangerously (EfSyn, 19/6/23).*

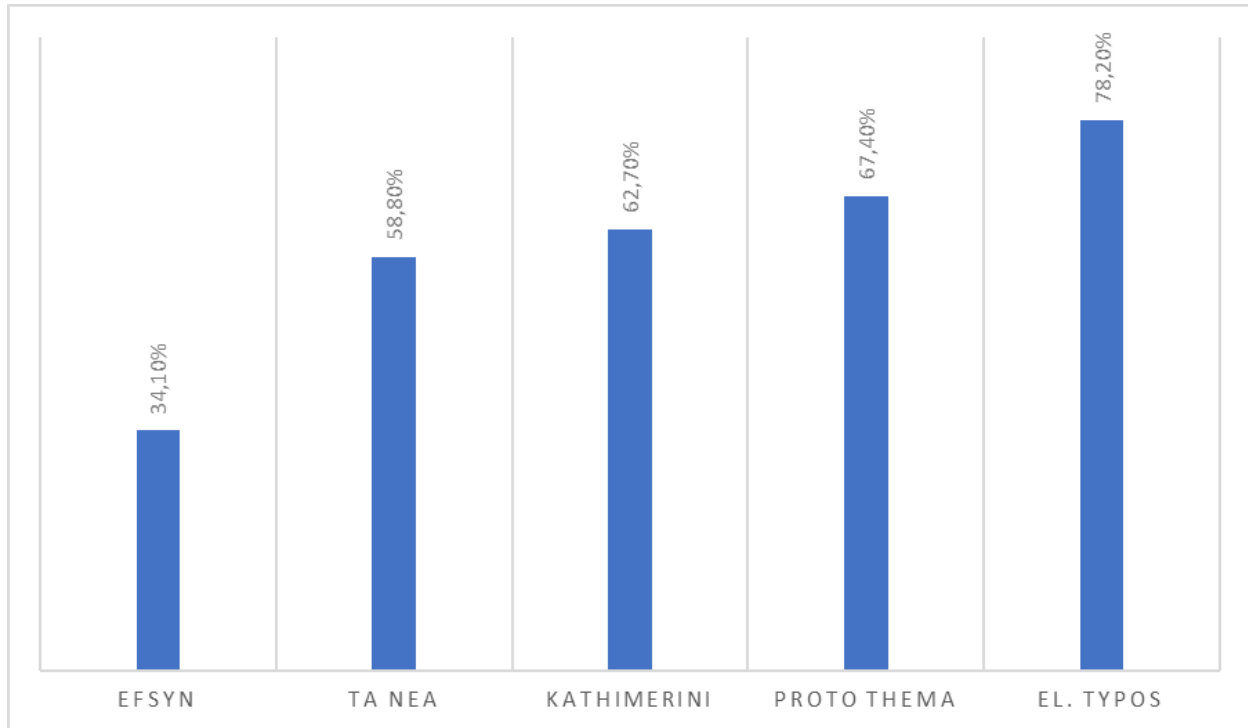


**Figure 1:** Smugglers as the primary cause for the migrant shipwreck in Pylos



**Figure 2:** Structural violence as a problem for the migrant shipwreck in Pylos

At the same time, political solutions that mainly focused on combating smuggling and preventing migrant departures [instead of also discussing safe routes for refugees and migrants] are highlighted in most media outlets, mainly through the discourse of official sources (e.g., in 78.2% of the news stories of Eleftheros Typos). This percentage was much lower in the case of the left-wing EfSyn (34.1%) (Figure 3).



**Figure 3:** Focus on political solutions

Moreover, similar to our previous findings (Kalfeli et al., 2022a, 2022b), research results on the Pylos' wreck revealed important similarities in news coverage between different media outlets, chief among them being the absence of refugee and migrant voice (present only in 17.7% of all news stories on average, including the left-leaning EfSyn (in which it appeared in 18,3% of the news stories). Similarly, human stories are rarely told (appearing in only 15% of news stories), despite the fact that refugees and migrants are frequently portrayed as numbers and as a mass. At the same time, official sources appear in an average of 78.5% of news stories across all media channels (in 76.8% of the news stories of Efsyn and 82.4% of Kathimerini), with politicians and coast guard personnel usually being the sole sources of information included in a news article. Furthermore, human rights-based solutions—like safe passageways for migrants and refugees—are mentioned in only 14.5% of news items on average. This suggests that some issues are rarely addressed by the media, regardless of the political viewpoint of the media outlet, resulting in an inadequate and simplistic coverage.

## Discussion and Conclusions

This study examined the news coverage that five Greek media outlets provided on the Pylos boat wreck, one of the deadliest migrant shipwrecks in the Mediterranean Sea. By providing insights on the rarely researched topic of media framing of migrant shipwrecks - despite the fact that shipwrecks have claimed thousands of lives of refugees and migrants in recent years - the article adds to the body of earlier literature. Moreover, by using a peace journalism theoretical approach (Galtung 1998; 2006) and the corresponding model for the analysis of mediated representations of migration (Kalfeli et al., 2022b), it offers a more nuanced and multilayered analysis touching on the less explored, positive and negative aspects of media portrayals of refugees and migrants in Greece.

The way that the Pylos migrant wreck has been portrayed in the media differs somewhat from how migration has been portrayed in the past. For example, when we compare these results to the dominant narrative that emerged in March 2020 during the cross-border crisis in Evros, where migrants and refugees were portrayed as invaders (Kalfeli et al., 2022a), we discover that in the case that is being reviewed and in the vast majority of publications, migrants and refugees are portrayed as victims - people who are in danger, abused, and the targets of smugglers' crimes. This partial shift in viewpoint can be explained by the size of the migrant boat disaster and the fact that many women and children were among the hundreds of individuals who died off the coast of southern Greece. It could also be the result of harsh criticism directed at Greek authorities and the Hellenic Coast Guard for their perceived failure to take adequate action to rescue the lives of those on board the boat that sank in June 2023. However, even when they are viewed as victims rather than perpetrators, migrants and refugees are nonetheless dehumanized because they are usually portrayed as a faceless mass of individuals without identity, voice, or emotions.

Most crucially, smugglers were portrayed as the sole responsible for the wreck, as is frequently the case following similar incidents (Mancini et al., 2021). They were accused of exploiting people making desperate efforts to enter Europe. Furthermore, according to certain news sources, the migrants and refugees on board chose on their own to relocate abroad, which resulted in personal suffering - a point that Gregoriou et al. (2022) also highlighted.

Due to their reliance on the discourse of official sources, the media under study was unable to highlight the variety of problems related to migration at this particular period. During a time when several NGOs and international organizations (ECRE, 2022; Amnesty International, 2022) accused Greece of engaging in unlawful pushbacks, just one-third of news stories mentioned discrimination and inequality brought about by state structures and practices (such as illegal pushbacks at sea). Rather, and as migrant smuggling is often presented as the main and sole problem, the main solution that was presented was to dismantle trafficking networks and restrict migrant departures.

On the other hand, human rights law-based remedies, including safe routes for refugees and migrants, were hardly represented.

One of the study's most intriguing findings in media discourse was what has been called "humanitarian securitization", an approach also detected by previous works (Aradau, 2004; Cusumano & Bell, 2021; Moreno-Lax, 2018; Parker et al., 2022; Watson, 2011). It takes on a humanitarian "coat" to defend the importance of safeguarding people on the move from dishonest traffickers, but it also employs this language of compassion to push for more stringent policies to stop migration. This is especially significant because it exposes a more nuanced and challenging to identify anti-migration narrative. On the surface, this rhetoric appears to care about refugees and migrants, eliminating illegal, cruel smuggling networks of all responsibility. However, rather than offering safe routes to Europe, it highlights the need for stricter regulations in an effort to deter migration.

Meanwhile, the content analysis turned up some interesting representational parallels. In accordance with our previous studies (Kalfeli et al., 2022a, 2022b), certain aspects of representation are repeated independent of the political stance of the media outlet. For instance, even in the media that takes a more pro-migrant stance, the voice of migrants and refugees is mostly absent. In a similar vein, non-official sources - that is, international organizations, non-governmental organizations, and experts - are not as frequently given a voice when discussing the reasons behind the problem or potential solutions, not to mention that border security takes precedence above human security. Simultaneously, despite the fact that migrants and refugees are frequently shown as a mass and as numbers, journalists rarely focus on the uniqueness of the migrant, their personal narrative, their experience, their trauma, and their emotion.

As pointed out, we are now facing an increasingly evasive anti-migration rhetoric that lays full responsibility at migrant smuggling networks and highlights harsher migration policies to discourage migration. At this point, it is important, of course, to note that high level of militarization of the EU external border controls has contributed to the securitization of European and Greek migration policy and discourse. This reduces the attention given to humanitarian issues related to irregular migration.

Conflicts, violence, poverty, and climate change will all continue and most likely worsen in the years to come (Dimitriadi, 2020). The developed world, including Greece, will continue to face migration-related issues. In order to timely lay the foundation for societal conversation on migration, the media will continue to play a critical role in this environment. Media professionals should work to increase their understanding of and training in diversity-related topics, broaden their journalistic practices to include non-elite sources, and refine their methods so that they can identify the more nuanced, elusive anti-migration narratives of our changing times in order to improve inclusive media coverage of refugees and migrants.



## References

- Aldamen, Y. (2023). Can a Negative Representation of Refugees in Social Media Lead to Compassion Fatigue? An Analysis of the Perspectives of a Sample of Syrian Refugees in Jordan and Turkey. *Journalism and Media*, 4(1), 90-104. <https://doi.org/10.3390/journalmedia4010007>
- Amnesty International (2022). Greece: Submission to the UN Committee against Torture 73rd Session, 19 April – 13 May 2022. Retrieved July 19 from: <https://www.amnesty.org/en/wp-content/uploads/2022/01/EUR2551782022ENGLISH.pdf>.
- Angelidis, D. & Papastathopoulou, C. (2023, June 19). The Coast Guard knew hours before that the fishing boat was rocking dangerously. Efsyn. Retrieved from: [https://www.efsyn.gr/ellada/koinonia/394275\\_limeniko-gnorize-ores-prin-oti-alieytiko-klydonizotan-epikindyna](https://www.efsyn.gr/ellada/koinonia/394275_limeniko-gnorize-ores-prin-oti-alieytiko-klydonizotan-epikindyna)
- Aradau, C. (2004). The Perverse Politics of Four-Letter Words: Risk and pity in the Securitisation of Human Trafficking. *Millennium*, 33(2), 251-277. doi:10.1177/03058298040330020101.
- Benert, V. & Beier, A. (2016). Influx of Migrants versus People in Need – A Combined Analysis of Framing and Connotation in the Lampedusa News Coverage. *Global Media Journal - German Edition*, 6(1). Retrieved from <https://globalmediajournal.de/index.php/gmj/article/view/48>
- Coast Guard: Rescued 80 migrants off Pylos, in international waters. (2023, June 14). Proto Thema. Retrieved from: <https://www.protothema.gr/greece/article/1381660/limeniko-epiheirisi-diasosis-metanaston-anoihta-tis-pulou-se-diethni-udata/>
- Cusumano, E. & Bell, F. (2021). Guilt by association? The criminalisation of sea rescue NGOs in Italian media. *Journal of Ethnic and Migration Studies*, 47(19), 4285-4307. doi:10.1080/1369183X.2021.1935815.
- Dimitriadi, A. (2020). Refugees at the Gate of Europe. In: ELIAMEP Policy Brief, Nr. 112. Hellenic Foundation for European & Foreign Policy. Retrieved from: <https://www.eliamep.gr/wp-content/uploads/2020/04/Policy-brief-Angeliki-Dimitriadi-final-1.pdf>
- Dines, N., Montagna, N. & Ruggiero, V. (2015). Thinking Lampedusa: border construction, the spectacle of bare life and the productivity of migrants. *Ethnic and Racial Studies*, 38(3), 430-445. doi:10.1080/01419870.2014.936892.
- Eberl, J.-M., Meltzer, C., Heidenreich, T., Herrero, B., Theorin, N., Lind, F., Berganza, R., Boomgaarden, H., Schemer, C. & Strömbäck, J. (2018). The European Media Discourse on Immigration and Its Effects: A Literature Review. *Annals of the International Communication Association* 42 (3), 207–223. doi:10.1080/23808985.2018.1497452.
- European Council on Refugees and Exiles (ECRE) (2022). Greece: Systematic Pushbacks Continue by Sea and Land as MEPs Demand EU Action, Deaths Up Proportionate to Arrivals, Number of People in Reception System Reduced by Half – Mitarachi Still Not Satisfied. Retrieved July 19 from: <https://ecre.org/greece-systematic-pushbacks-continue-by-sea-and-land-as-meps-demand-eu-action-deaths-up-proportionate-to-arrivals-number-of-people-in-reception-system-reduced-by-half-mitarachi-still-not/>

- Entman, R. (1993). Framing: Toward Clarification of a Fractured Paradigm. *Journal of Communication* 43 (4), 51–58. doi:10.1111/j.1460-2466.1993.tb01304.x
- Esses V., Medianu, S. & Lawson, A. (2013). Uncertainty, Threat, and the Role of the Media in Promoting the Dehumanization of Immigrants and Refugees. *Journal of Social Issues* 69, 518–536. doi:10.1111/josi.12027.
- Galtung, J. (1969). Violence, Peace, and Peace Research. *Journal of Peace Research*, 6(3), 167–191. <http://www.jstor.org/stable/422690>
- Galtung, J. (1998). High Road, Low Road– Charting the Course for Peace Journalism (Cape Town: Centre for Conflict Resolution). Track Two 7(4). Available at: <https://journals.co.za/doi/abs/10.10520/EJC111753>
- Galtung, J. (2006). Peace Journalism as an Ethical Challenge. GMJ: Mediterranean Edition 1 (2), 1–5.
- Galtung, J. & Ruge, M. H. (1965). The Structure of Foreign News: The Presentation of the Congo, Cuba and Cyprus Crises in Four Norwegian Newspapers. *Journal of Peace Research* 2(1), 64–90. doi:10.1177/002234336500200104.
- Giubilaro, C. (2018). (Un)framing Lampedusa: Regimes of Visibility and the Politics of Affect in Italian Media Representations. In: Proglia, G., Odasso, L. (eds) *Border Lampedusa*. Palgrave Macmillan, Cham. [https://doi.org/10.1007/978-3-319-59330-2\\_7](https://doi.org/10.1007/978-3-319-59330-2_7).
- Gregoriou, C., Ras, I. & Muždeka, N. (2022). Journey into hell [... where] migrants froze to death; a critical stylistic analysis of European newspapers' first response to the 2019 Essex Lorry deaths. *Trends in Organized Crime*, 25(3), 318–337. doi:10.1007/s12117-021-09418-x.
- Kalfeli, N., Angeli, C., Gardikiotis, A., & Frangonikolopoulos, C. (2022a). Between Two Crises: News Framing of Migration during the Greek-Turkish Border Crisis and COVID-19 in Greece. *Journalism Studies*, 24(2), 226–243. <https://doi.org/10.1080/1461670X.2022.2155987>.
- Kalfeli, N., Frangonikolopoulos, C., & Gardikiotis, A. (2022b). Expanding peace journalism: A new model for analyzing media representations of immigration. *Journalism*, 23(8), 1789–1806. <https://doi.org/10.1177/1464884920969089>.
- Kim, S., Carvalho, J., Davis, A. & Mullins, A. (2011). The View of the Border: News Framing of the Definition, Causes, and Solutions to Illegal Immigration. *Mass Communication and Society* 14(3), 292–314. doi:10.1080/15205431003743679.
- Lee, S. T. & Maslog, C. (2005). War or Peace Journalism? Asian Newspaper Coverage of Conflicts. *Journal of Communication* 55(2), 311–329. doi:10.1111/j.1460-2466.2005.tb02674.x.
- Lynch, J. & McGoldrick, A. (2005). *Peace Journalism*. Gloucestershire: Hawthorn Press.
- Mancini, P., Mazzoni, M., Barbieri, G., Damiani, M. & Gerli, M. (2021). What shapes the coverage of immigration. *Journalism*, 22(4), 845–866. doi:10.1177/1464884919852183.
- McMahon, R. & Chow-White, P. (2011). News Media Encoding of Racial Reconciliation: Developing a Peace Journalism Model for the Analysis of 'Cold' Conflict. *Media, Culture & Society* 33(7), 989–1007. doi:10.1177/0163443711415742.

- Montagut, M., & Moragas-Fernández, C. (2020). The European Refugee Crisis Discourse in the Spanish Press: Mapping Humanization and Dehumanization Frames Through Metaphors. *International Journal of Communication*, 14, 69–91.
- Moreno-Lax, V. (2018). The EU humanitarian border and the securitization of human rights: The ‘rescue-through-interdiction/rescue-without-protection’ paradigm. *JCMS: Journal of Common Market Studies*, 56(1), 119-140. doi:10.1111/jcms.12651.
- Neuendorf, K. (2002). *The Content Analysis Guidebook*. Thousand Oaks, CA: SAGE.
- Parker, S., Bennett, S., Cobden, C. M. & Earnshaw, D. (2022). ‘It’s time we invested in stronger borders’: media representations of refugees crossing the English Channel by boat. *Critical Discourse Studies*, 19(4), 348-363. doi:10.1080/17405904.2021.1920998.
- Sadana, G. (2023, June 15). Shipwreck in Pylos: The Mediterranean at the mercy of smugglers - “Turnover” of millions, a hundred deaths. Proto Thema. Retrieved from: <https://www.protothema.gr/greece/article/1382080/nauagio-stin-pulo-i-mesogeios-ernaio-ton-lathrodiakiniton-tziroi-ekatommurion-ekatomvi-nekron/>
- Shaw, I. S., Lynch, J. & Hackett, R (Eds.). (2011). *Expanding Peace Journalism: Comparative and Critical Approaches*. Sydney: Sydney University Press.
- Shipwreck in Pylos: Journey to hell with the “Mother of Martyrs” – The tragic irony of the fishing boat’s name. (2023, June 16). Eleftheros Typos. Retrieved from: <https://eleftherostypos.gr/ellada/navagio-stin-pylo-taxidi-stin-kolasi-me-tin-mitera-ton-martyron-i-tragiki-eironeia-me-tin-onomasia-tou-alieftikou-vinteo>
- Shipwreck in Pylos: The Mediterranean Sea is a “watery grave” - Around 600 migrants on board the boat that sank in international waters off Pylos. (2023, June 14). Proto Thema. Retrieved from: <https://www.protothema.gr/greece/article/1381947/nauagio-stin-pulo-ugros-tafos-i-mesogeios-gia-ekatodades-metanastes-peripou-600-atoma-epevainan-sto-skafos/>
- Survivors of Pylos shipwreck to be transferred to Malakassa camp. (2023, June 14). Kathimerini. Retrieved from: <https://www.ekathimerini.com/news/1213205/survivors-of-pylos-shipwreck-to-be-transferred-to-malakassa-camp/>
- Thorbjornsrud, K. (2015). Framing Irregular Immigration in Western Media. *American Behavioral Scientist* 59(7), 771–782. doi:10.1177/0002764215573255.
- Tivona, E. (2011). *Globalisation of Compassion: Women’s Narratives as Models for Peace Journalism*. In *Expanding Peace Journalism: Comparative and Critical Approaches*, edited by J. Lynch, S. Ibrahim, and R. Hackett, 317–344. Sydney: Sydney University Press.
- Van Gorp, B. (2005). Where Is the Frame? Victims and intruders in the Belgian press coverage of the asylum issue. *European Journal of Communication* 20(4), 484–507. doi:10.1177/0267323105058253.
- Watson, S. (2011). The ‘human’ as referent object? Humanitarianism as securitization. *Security dialogue*, 42(1), 3-20. doi:10.1177/0967010610393549.
- Youngblood, S. (2017). *Peace Journalism Principles and Practices: Responsibly Reporting Conflicts, Reconciliation and Solutions*. New York: Routledge.

Zerback, T., Reinemann, C., Van Aelst, P. & Masini, A. (2020). Was Lampedusa a key Event for Immigration News? An Analysis of the Effects of the Lampedusa Disaster on Immigration Coverage in Germany, Belgium, and Italy, *Journalism Studies*, 21(6), 748-765, <https://doi.org/10.1080/1461670X.2020.1722730>.

# The Institutional Image of Femininities in an International Scandal: Analyzing the image of MEP Eva Kaili, in Francophone Press

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## Abstract

This study is grounded in the proposition that the organization of news, such as an international scandal, is based on criteria designed to make the content as attractive as possible to the reader. In the case of “Qatargate”, MEP Eva Kaili played a central role in the scandal narration by the Press. The study explores whether MEP Eva Kaili became the face synonymous with the “Qatargate” scandal and how her gender characteristics made her the key figure for the attractiveness of the topic. To this end, quantitative content analysis is applied to Francophone newspapers from December 2022 to February 2023. The subsequent analysis involves both quantitative findings and qualitative characteristics of selected rhetorical narratives concerning the portrayal of gender stereotypes in an issue of extended international interest. To sum up, this research ponders whether and how MEP Eva Kaili's characteristics as a "44-year-old woman, former TV presenter" are presented to enhance the attractiveness of the issue of “Qatargate”.

**Keywords:** femininities, representation, scandal, Eva Kaili, Qatargate.

## Introduction

The contemporary media landscape, particularly in the context of international scandals, is often shaped by a deliberate structuring of news content aimed at maximizing reader engagement. This study explores how news portrays the "Qatargate" scandal in terms of news appeal.

“Qatargate” revolves around allegations of corruption and money laundering involving members of the European Parliament, EU institution employees, and government officials for the sake of the governments of Qatar and Morocco, who influenced the political decisions adopted by the European Parliament by bribing third parties who have important positions in EU institutions (Lefief, 2022). Authorities from Belgium, Italy, and Greece confiscated electronic devices and seized €1.5 million in cash.

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The culprits are numerous, with MEP Eva Kaili emerging as a central figure in this scandal. As one of Parliament's 14 vice presidents, Kaili is a prominent member of Parliament (Wheaton, 2022). Belonging to the center-left Socialist & Democrat (S&D) party, she has specific duties concerning the Middle East as part of her portfolio. She has become one of Qatar's most outspoken supporters, despite serious worldwide concerns regarding the working conditions for stadium construction of the World Cup 2022.

Francesco Giorgi, Kaili's co-parent and partner, has also been taken into custody. He serves as an adviser to the European Parliament regarding matters concerning the Middle East and North Africa in addition to being the founder of the non-governmental organization "Fight Impunity". Importantly, Pier Antonio Panzeri, the president of "Fight Impunity" and ex-MEP also from the S&D, was among those arrested by the Italian police alongside his wife and daughter.

Despite all the evidence, the official way to refer to this case is as an alleged case of corruption and money laundering as its verdict is still pending.

The primary objective of this research is to investigate whether MEP Eva Kaili became the face synonymous with the "Qatargate" scandal, and, furthermore, to examine how her gender characteristics played a pivotal role in making her the focal point of public attention. To achieve this, a comprehensive approach is employed, integrating quantitative content analysis of Francophone newspapers. Beyond statistical findings, the study delves into qualitative characteristics, exploring rhetorical narratives that contribute to the portrayal of gender stereotypes in a news topic of extended international interest.

The theoretical framework of this study is grounded mainly in framing theory from communication and media studies, but also draws analytical tools from gender studies, with a particular emphasis on theories related to the depiction of femininities involved in scandalous contexts.

As the analysis unfolds, the study aims to contribute valuable insights into the nuanced interplay between media representation and gender dynamics in the context of constructing public narratives surrounding high-profile scandals with international ramifications. Through a multidimensional exploration, this research wishes to enrich the broader discourse about gender roles surrounding scandals of international significance.

## **Framework via theory**

To begin with, we should define the term "scandal". Scandal refers to "actions or events involving certain kinds of transgressions which become known to others and are sufficiently serious to elicit a public response" (Thompson, 2000: 13). They occupy the newspapers on an almost daily basis and have always dominated the political sphere. (Cucchi & Cavazza, 2021, Curran, 2011, Curran & Seaton, 2018). In the political sphere, scandals continue to increase to the point where they are

now considered as the "new normal" in Western democracies (Cucchi, et al, 2021). Digital media play a crucial role in covering and reporting events that present political scandals as real 'dramas' destined to an indignant and curious public. This has consequences not only for the politician, but also for the party and its political institutions.

The importance of addressing corruption holds significant relevance within democratic theory. One procedural dimension of democratic quality, namely the rule of law, signifies that corruption should be minimized, detected, and penalized by the political, administrative, and judicial branches of the government (Diamond & Morino, 2004: 8).

From a political standpoint, empirical evidence suggests that individuals exposed to corruption are less likely to believe in the legitimacy of their political system and exhibit lower levels of interpersonal trust (Seligson, 2002). In the effort to prevent this, Staphenurst (2002) asserts that the media play a crucial role in promoting good governance and controlling corruption. Quoting Luengo and Mesquita (2016: 159):

“Political scandals exposed by the media can often force the political system to respond, either starting legal processes, through the dismissal or resignation of public officials involved in wrongdoings, or simply by statements of political leaders who are forced to give explanations to the population.”

The media's scrutiny of corruption is considered a catalyst for social and political change, with the potential to shape the evolution of political culture towards increased transparency and accountability within the system (Arnold & Lal, 2012). This can manifest either as political leader statements or as the dismissal or resignation of public officials deemed responsible (Luengo & Mesquita, 2016). The traditional Press, being one of these forces of scrutiny, continues to be involved in event coverage. One of the ways through which the scandalous event is mediated by the press is described by the theory of framing.

Framing means selecting certain dimensions of a perceived reality and making them more noticeable in communicating text, aiming to highlight a specific aspect of the issue discussed (Iyengar,1991, Goffman,1974). Framing is based on selection and salience (Entman,1993; 2012). Based on this particular interpretation, frames determine how a problem should be defined, which are the factors and actors that cause the problem and how they should be judged for the repercussions of their actions (Scheufele, 1999)

Furthermore, frames, by accentuating some aspects of information about a subject, use salience. Salience refers to information and data that audiences will find to be more recognizable, significant, and easily remembered. Raising the salience increases the likelihood that recipients will become aware of this issue, analyze it, and preserve it in their memory (Fiske & Taylor, 1991).

Texts can make a piece of information more salient, by repeating it or by connecting it to symbols that are widely recognized in the culture.

Kahneman and Tversky (1984) note that frames concurrently divert attention from other elements of the reality portrayed by illuminating specific features of this reality. This occurs, as frames are defined by what they include and what they exclude in their interpretation of the issue analyzed, in the problem definition explanation and assessment.

Therefore, framing affects how and when most people see, comprehend, and recall a situation, as well as how they approach it and decide how to respond to it. The idea of framing suggests that, while it may not influence everyone, the frame has a common effect on a sizable section of the receiving audience.

The question that arises here, guiding the reasoning of the research, is whether the gender element can be applied as an interpretive framework.

Gender is defined as a fundamental and primary cultural context that contributes to the understanding of the self in relation to others - in order for individuals to interact and organise relationships. Individuals identify both themselves and others on the basis of gender, through cultural systems of categorization (Fisk & Ridgeway, 2018). More specifically, gender categorizes people according to cultural norms developed by society that classify people as male or female. This categorization is done unconsciously. People categorize others based on their gender, unconsciously, in an instant, without realizing it (Fisk & Ridgeway, 2018).

In this research, we use the term “femininities”, that according to European Institute for Gender Equality (n.d.a), describes:

“The different notions of what it means to be a woman, including patterns of conduct linked to a woman’s assumed place in a given set of gender roles and relations. It involves questioning the values and norms that traditionally apply to women’s behavior in a given society, identifying and addressing issues connected to women’s and girls’ subordination as well as related discriminatory gender stereotypes that sustain gender inequality.”

The reason we choose the term “femininities”, instead of the term “women” is because we argue that it encompasses better the social and cultural aspects we wish to highlight. Accordingly, we use the term “masculinities”, that is defined as:

“the different notions of what it means to be a man, including ideals about men’s characteristics, roles and identities, which are constructed based on cultural, social and biological factors and change over time” (European Institute for Gender Equality, n.d.b)



The question that arises here is the following: In which way do people unconsciously categorize others based on gender? This happens using the common knowledge that actors possess. This knowledge is not only shared between actors, but it is also common for everyone in the society. It is a concept, a knowledge, and an attitude that everyone is familiar with, so the actor knows how to act based on it. Common knowledge is shared between individuals and is taken for granted.

Therefore, when individuals identify the other on the grounds of gender, this categorization emerges by common knowledge and from this categorization, cultural beliefs about 'who' masculinities and femininities are and how the two genders behave and should behave also emerge. We are essentially talking about cultural gender stereotypes (Budgeon, 2014, Fisk & Ridgeway, 2018).

There is a stereotypical belief that women possess communal characteristics in their personality (relational, caring and receptive skills), while men possess agentic characteristics (self-confidence, dynamism) (Budgeon, 2014, Cucchi & Cavazza, 2021). Based on this differentiation, femininities in the position of leadership are perceived as more compassionate, calm, understanding and honest, while masculinities are perceived as more assertive, authoritarian and confident (Cucchi & Cavazza, 2021). Essentially, these are the expectations that are developed about femininities, and therefore, the perceptions we have when we read a news story about a woman.

Expectation violation theory predicts that negative behaviors are judged more harshly when the offense goes against the public's expectations of women and men (Cucchi & Cavazza, 2021). Individuals who act contrary to these expectations are often isolated from the group and evaluated negatively. As Lorber (1994:26) points:

“In the social construction of gender, it does not matter what men and women do; it does not even matter if they do exactly the same thing. The social institution of gender insists only that what they do is perceived as different.”

A politician involved in a scandal, then, should be punished more severely when the scandal violates a homogeneous gender stereotypical expectation than an opposite gender stereotypical expectation (Cucchi & Cavazza, 2021).

A female politician is evaluated more negatively than her male counterpart in a scandal when her actions are inconsistent with expectations about her social role, e.g., when she claims self-promotion in the workplace, behavior contrary to the trait of modesty attributed to her (Courtemanche & Green, 2020).

Furthermore, she is evaluated more harshly than the man in a scandal, because in being implicated in a scandal, she violated honesty, a stereotypical attribute of femininities. Society, based on stereotypes, expects a femininity to act with honesty or else morality is lost. Taking into

consideration that scandals represent a form of interference with moral behavior and can affect credibility, individuals involved in scandals are evaluated negatively in terms of their character (Courtemanche & Green, 2020). If femininities are automatically considered more trustworthy than masculinities, they should face a greater reaction when accused of breaking these rules (Cucchi & Cavazza, 2021).

In a scandal, there is, on the one hand, the internal attribution of causality (i.e., the perpetrator has deliberately violated and is responsible for the scandal) that harms the image of the political person. On the other hand, there is the external attribution of causality (causality is attributed to external factors) and implies greater leniency from citizens, because responsibility lies on other factors, instead of the personal one. In the external attribution, masculinities and femininities are evaluated the same. However, when causality attribution is directed to the person involved, people are more lenient with a masculinity rather than with a femininity who commits the same misbehavior, due to the high expectation of maintaining moral integrity on the part of femininities (Cucchi & Cavazza, 2021).

A supplementary, yet significant, concept in the context of the present research is the distinction between soft and hard news. This distinction differentiates news related to issues of high politics (such as politics, foreign policy, and major economic matters) from issues of social interest (such as personal aspects of politicians and melodramatic life stories behind critical events). These concepts were normalized in academic discourse by the widely cited work of Tuchman (1973) on the nature of news. More contemporary terms for this distinction include ‘infotainment’ and ‘tabloidization,’ which encapsulate this differentiation between, we might say, critical and less critical issues, but primarily describe the merging of critical issues with social and melodramatic framing (Uribe & Gunter, 2004). According to Baum (2002), this distinction is significant for democracy because the selective political coverage provided by entertainment-oriented, soft news media inadvertently exposes individuals, who might otherwise remain politically uninformed, to information about prominent political issues. In the present study, this distinction is noteworthy since we are discussing the personal dimension of an international political issue, specifically the dimension of gender.

Delving more into the gender dimension of the “Qatargate”, this effort focused on typologies that were applied when examining differential media representations on the basis of gender. The categories are based on the study of the following scientific texts: Ross (2000), Devitt (2002), Peng et al. (2022), D’Heer et al. (2022), but also on empirical osmosis with the material.

As regards the conceptualisation of femininities in the field of politics, the gender of the journalist has been identified as a relevant parameter in uncovering gender stereotyping in the media (Devitt, 2002). More specifically masculine reporters have been found to be more likely to highlight a female politician’s personal characteristics. Peng et al. (2022) delve deeper by proposing that the

mention of a politician's gender is mainly done for women. This would mean that politician is a word traditionally assigned masculine characteristics and special explanation is required in the case of a femininity having that role. From these two contributions of the literature already the gender of the reporter, mentions of personal characteristics and of the gender of the politician emerge as helpful variables measuring the underlying concept of gender stereotyping.

Furthermore, news prominence represents an additional measure of the image of femininities. D'Heer et al. (2022) who studied media representation of politicians point out that news prominence is defined by how important and engaging a story is for the public. It refers to the number of times politicians are presented and mentioned in the media, for example, whether femininity is named first in a story, named several times, or named in a headline. It has been found that female politicians are portrayed in a gendered manner that emphasizes how different they are from masculine ones, while there is a more explicit reference of the female gender in the media coverage (D'Heer et al, 2022). Thus, news prominence is not only dependent on a number of political factors (including political party, electoral prefecture, position in the electoral ballot etc.), but it is also influenced by the gender of the politician.

The last parameter of importance at the intersection of gender and politics is the existence or not of "sensational" vocabulary for the description of femininities in media. Ross (2000) pinpoints that femininities are portrayed in an emotional and tabloid manner compared to masculinities. Media sensationalize femininities and have as a goal to impress the public by writing "spicy" comments, promoting provocative stories and adding photos related to public figures.

All the above body of theory could serve as a foundation for formulating research hypotheses, which would predict the relationship between two or more variables of the research. Examples of such working hypotheses could be, for instance, "we expect that the masculinities in the "Qatargate" scandal are framed less in terms of gender than the femininities" or "we expect that we will find sensational vocabulary used for the description of Ms. Kaili." Such research hypotheses are naturally interpretively useful and methodologically interesting and are to form part of an extended study involving a deeper qualitative analysis. In selecting research questions over hypotheses, we aim to explore the complexity of our topic more comprehensively, while we plan to expand the research in the methodological framework of research hypothesis in the future.

Taking all the aforementioned into consideration, this study is based on the following research questions, that were developed from the theoretical background, by giving attention to various dimensions of the gender factor.

R.Q.1. What are the predominant elements in the framing of Ms. Kaili?

R.Q.2. When does Ms. Kaili receive a more negative evaluation?

R.Q.3. Which variables constitute the negative evaluation of Ms. Kaili in general and her specific negative evaluation regarding the "Qatargate" scandal?

### **Methodology and research protocol**

The research method employed was quantitative content analysis, a technique that involves quantifying characteristics found in texts to answer the formulated research questions (Glaser & Strauss, 1967; Krippendorff, 2018). Through statistical processing of data, associations are derived, allowing for the examination of theoretical assumptions, answering research questions, and even generating new theories (Hayashi, 1950). Quantitative research maintains a stable and inflexible structure, with minimal alterations once initiated, enabling the connection of multiple characteristics across many cases to reveal general trends (Kyriazi, 2001:47, Riffe et al., 2019).

Categorization serves as the core process in content analysis, transforming text into categories that express a specific coding system. This categorization process crystallizes the content into measurable variables for drawing conclusions. A prerequisite for quantitative content analysis is the existence of a codebook that allows for valid measurement (Krippendorff, 2018, Samaras et al., 2015:59-60).

The unit of analysis employed is the reference of MEP Eva Kaili in a news item about the "Qatargate" scandal. In order to quantify the institutional representations of femininities in an international scandal a codebook was developed. Most of its variables were dichotomous, measuring existence or absence. They were divided into those pertaining to the characteristics of the articles and those related to the framings of Eva Kaili in terms of role attributions, in terms of gender stereotypes and in terms of evaluation. The variables relating to the identification of mentions, article characteristics and valence are adapted from studies of national images in the press (Samaras et al., 2017). The variable of the importance of a mention is grounded in the idea that quantity of mentions is an indicator for the importance of a mention at the level of the article. This notion is the translation of the concept of "visibility" that is a measure of the importance of a mention in national images (Samaras et al., 2016) into the individual level of analysis of specific politicians. Finally, the categories relating to framings of politicians and gender are based on the operationalization of the works of Devitt (2002), Peng, et al. (2019), D'Heer, et al. (2022) which has been already presented in the theoretical part of this study.

As regards the procedure of the analysis a corpus of articles from the Francophone newspapers "Le Monde", "Le Figaro", "La Libération" and "Le Soir", mentioning MEP Eva Kaili and the scandal was constructed. French was chosen as a working language as the scandal occurred in a French speaking country and by making this choice the potential alteration of meaning occurring when reporting in different languages could be avoided. Flemish speaking newspapers were not a

part of the corpus as the coders are not fluent in this language. The Belgian “Le Soir” was chosen for its role as the newspaper that first reported on the scandal as it unfolded. The other three French newspapers were selected based on their high circulation coupled with their divergent political positions, with “Le Monde” being classified as a “centre-left”, “Le Figaro” as “centre-right” and “La Liberation as “left wing”. The timeframe of the corpus was from December 2022, the month when the scandal became public knowledge, to February 2023, from which point the “Qatargate” scandal was no longer a topic of the newspapers. From an initial total of 412 articles related to the “Qatargate” scandal only 250 were found to mention MEP Eva Kaili. The present study conducted a census consisting of all of them. The registration unit was the mention of MEP Eva Kaili and the context unit the sentence or paragraph (in the case there were not more than one mention per paragraph) in which she was mentioned.

Before expanding on the findings of the present study it is necessary to address the reliability of the coding process. In the process of conducting this study the researchers opted to create a codebook from scratch, but not run a pre-test. This decision was based on the argument that the coders had worked together on the same material in previous projects and as such they had developed a common understanding of it. What is more since they were only two in the few cases when one was not certain of which code to assign, they could always discuss it and in this way train each other. Nevertheless, concerns arose within the research team regarding the reliability of the findings, as Riffe et al. (2019) underline that intercoder reliability should be the result of statistical testing. To that end a post-analysis intercoder reliability test was conducted. In this, most variables performed very well, with a Krippendorff’s alpha well over .60. However, some variables pertaining to gender representations such as “sensationalism” and “gender” as well as others regarding evaluation performed poorly (Table 5, see data availability statement). This could be attributed to insufficient variation in the sample that was used for the test as well as the fact that quite some time had passed since the initial coding process and the coders were no longer as familiar with the content. This creates doubts about the reproducibility of the findings but not their validity as the coders had worked on the same corpus before albeit with a different objective and had worked on constructing the codebook together leading to their familiarisation with each of the constructs that were included in it.

### **Findings via numbers**

The purpose of this study was to investigate whether and how MEP Eva Kaili’s characteristics as a “44-year-old woman and former TV presenter” are presented to enhance the attractiveness of the issue of “Qatargate”. The findings indicate a selected rhetorical narrative by Francophone Press concerning the portrayal of gender stereotypes upon the image of MEP Eva Kaili in an issue of extended international interest. This section discusses these findings in detail, exploring the role

of gender, its associations with MEP Eva Kaili's characteristics, and how it played a key role in the narration of the scandal.

To begin with, in a total of 412 articles concerning the "Qatargate" scandal, it was found that 250 of them contained a reference to Ms. Kaili (see Table 1).

**Table 1.**

*Mentions of "Qatargate" and "Eva Kaili"*

Newspapers	Articles about "Qatargate"	Articles about "Qatargate" that mention
		MEP Eva Kaili
"Le Soir"	260	142
"La Libération"	33	27
"Le Monde"	61	39
"Le Figaro"	58	42
TOTAL	412	250

*Note:* Percentages have been rounded up to discrete numbers.

Starting the analysis with the general first picture offered by the quantitative content analysis, 61% of the articles that have a reference to "Qatargate" in all 4 newspapers, have a reference to Ms. Kaili. This is a finding that can be interpreted in terms of personalization of the news, since the main protagonists are expected to have a specific reference to the news. Therefore, this is a relatively expected finding, essentially it is a confirmation of the implicit working hypothesis that permeates this study, namely that there are references to Ms. Kaili where there is a reference to "Qatargate". In particular, "Le Soir" contributes 63% to the total number of articles on "Qatargate", and 55% of those articles refer to Ms. Kaili. This is a finding that can be interpreted in terms of localism: "Le Soir" is the only Belgian newspaper and the scandal is taking place in Belgium. The other newspapers ("La Libération", "Le Monde", "Le Figaro") contain references to Ms. Kaili to the extent of the general average (see Table 2).

**Table 2.**

*Frequencies of Mentions of "Qatargate" and "Eva Kaili"*

Newspapers	Articles about "Qatar gate"	Articles about "Qatar gate" that mention MEP Eva Kaili in each of the newspapers
"Le Soir"	63%	55%
"La Libération"	8%	82%
"Le Monde"	15%	64%
"Le Figaro"	14%	72%
TOTAL	100%	61%

*Note: The percentages from "Articles about 'Qatargate' that mention MEP Eva Kaili in each of the newspapers are derived from the comparison of the total number of articles for each of the newspapers and the number of articles mentioning Eva Kaili (see Table 1.). As regards the total of the same category it is the product of the division of the total number of articles about "Qatargate" in all the newspapers by the total number of articles about "Qatargate" that mention Eva Kaili.*

Moving on, and approaching R.Q.1., it is noted that the institutional role and nationality of Ms. Kaili are the dominant frames through which Ms. Kaili is presented in the Francophone Press. Her institutional role in the EU is mentioned by 91%, while her national identity is mentioned by 66% (see Table 3).

**Table 3.**

*Framings of Eva Kaili*

Type of frame	Frequencies	
	n	%
Institutional	227	91
National	166	66
Spousal	115	46
Partisan	87	35
Filial	50	20
Gender	33	13
TV Presenter	30	12
Sensational	26	10
Femme fatale	10	4
Maternal	8	3

*Note: N=250, total number of "Qatargate" articles mentioning Eva Kaili. Frequencies have been ordered by their prominence.*

Therefore, the answer to R.Q.1. is that the predominant frame of Ms. Kaili, is not her gender. At a first level, and without studying the other associations, it would be said that the EU parliamentarian is presented within a frame that focuses on her institutional and ethnic identity.

This observation, however, applies when Ms. Kaili is presented without an evaluative sign, i.e. without receiving any evaluation from the journalist or from the sources of the news, within the text. This observation leads us to the second research question, which stems from the general question: when is Ms. Kaili evaluated negatively?

Approaching R.Q.2., regarding when Ms. Kaili's presentation receives a negative evaluation, it is observed that when Ms. Kaili is not mentioned as a former TV presenter, there is no evaluation of her broader course, at 97%. However, 17 out of 30 times when there is a reference to her former career, there tends to be a negative evaluation of her broader career (57%) (Table 4, see data availability statement). This leads to the conclusion that the reference to an earlier career, stereotypically "lower level" and "feminine" - for an EU institutional representative - is positively associated with a negative evaluation of femininities (see Table 4).

**Table 4.**

<i>Cross tabulation: Mention of Eva Kaili as a TV Presenter* General Evaluation of Eva Kaili's career</i>						
Mention of Eva Kaili as a TV presenter		General Evaluation of Eva Kaili's career				
		Doesn't Exist	Negative	Neutral	Positive	Total
Doesn't exist	n	213	6	1	0	220
	%	96.8	2.7	0.5	0	100
Exists	n	7	17	1	5	30
	%	23.3	56.7	3.3	16.7	100
Total	n	220	23	3	5	250
	%	88	9.2	0.8	2	100

*Note: Percentages have been rounded up to the second decimal.*

By delving more into R.Q.2 and answering R.Q.3. regarding which variables constitute the negative evaluation of Ms. Kaili in general and her specific negative evaluation regarding the "Qatargate" scandal, it is noted that, although there is a negative evaluation of Ms. Kaili for her general course of action, her specific negative evaluation for the scandal has a significant moderate positive association only to her nationality, Chi-squared(1, N=250)=32.1,  $p < .001$ ,  $\Phi = .36$ , and her



institutional role in the EU, Chi-squared(1, N=250)=22.67,  $p < .001$ ,  $\Phi = .30$ . In other words, it can be extrapolated that Francophone newspapers present a narrative in which Ms. Kaili is negatively evaluated overall with a specific feature to be her status as a former TV presenter, while - on the other hand - she is negatively evaluated for the scandal as a Greek European socialist. Therefore, the negative burden for this particular scandal is shifted more to her Greek and institutional status:

*“Suspected of being involved in a vast corruption scheme involving current and former members of parliament (...) the Vice-President (S&D) of the European Parliament - there are a total of 14 Vice-Presidents in the European Parliament - Eva Kaili, of Greek nationality, was arrested on Friday at her home in Brussels.” (Le Soir, 11/12/2022)*

while the negative burden for her existence as a whole relates to her "light" professional choices of the past. Several other possible associations were explored however they either beyond the scope of the present study or lacked significance.

## **Discussion and reflection**

The findings of the research provide valuable insights into the representation of MEP Eva Kaili in the context of the "Qatargate" scandal, particularly focusing on the role of her gender, institutional identity, and previous career as a TV presenter. The study reveals a nuanced narrative constructed by Francophone Press, where various frames intersect to shape perceptions of MEP Eva Kaili within the scandal.

Firstly, the analysis highlights the prominence of Kaili's presence in the media coverage related to "Qatargate." With 61% of articles mentioning her out of the total coverage, it's evident that she becomes a central figure in the narrative surrounding the scandal. This personalization of the news underscores the significance of individual characters in shaping public discourse, particularly in cases of political controversy.

Moreover, the study identifies dominant frames through which Kaili is presented, with her institutional role in the EU and her Greek nationality being the most frequently mentioned. This institutional and ethnic identity framing suggests that her portrayal often revolves around her professional and national affiliations rather than her gender or previous career. However, it's crucial to note that gender does play a role, albeit less prominent, with Kaili being mentioned as a former TV presenter in some instances.

The intersectionality of gender and professional background becomes apparent when examining the evaluation of Kaili's career trajectory. The research indicates an association between references to her former career as a TV presenter and negative evaluations of her overall professional journey. This association suggests that her past occupation, stereotypically linked with femininity and

perceived as "lower level" for an EU institutional representative, influences how her broader career is evaluated.

Furthermore, the study delves into the specific negative evaluations of Kaili in the context of the "Qatargate" scandal. Interestingly, while negative assessments of her general actions are associated with her past as a TV presenter, her negative evaluation in relation to the scandal is more strongly linked to her nationality and institutional role in the EU. This distinction suggests a strategic narrative by Francophone newspapers, where different aspects of Kaili's identity are emphasized depending on the context, perhaps to sensationalize or contextualize the scandal.

The link between the negative assessment of Eva Kaili around the scandal and the reference to her nationality is an interesting element given the country of origin of this MEP. Eva Kaili, as an MEP, comes from Greece, the EU member state that was in Europe's spotlight in the 2010's due to its numerous scandals, leading to the country's financial crisis in 2009 that threatened the Eurozone and EU. This time, once again, a representative of this country in the European Parliament - the only EU institution whose members are elected by each member-state concerned - in this case, by Greek citizens - is involved in a major EU scandal, challenging the Parliament's political stature. As a result, the integrity of the European Union have been compromised once again by an official actor from Greece. Therefore, the element of Greekness that is highlighted in the image of Kaili in the specific reference to the Qatargate scandal is not only not a coincidental connection, but constitutes a reminder on behalf of the French Press to the reading public about the causal relationship between the scandal, the MEP and the country of origin of this particular MEP.

Overall, the research sheds light on the complex interplay of gender, nationality, and professional background in shaping media representations of political figures like MEP Eva Kaili. It underscores the importance of examining multiple dimensions of identity when analyzing media narratives and their impact on public perceptions of individuals involved in high-profile controversies.

Additionally, it captures in general the role of media in the way they presented and highlighted facts to make the content of this particular scandal more attractive. Highlighting Kaili as a woman, emphasizing her beauty through photographs, presenting her journey from television to the European Parliament, and underlining her role as a link between the male politicians involved in the scandal in question framed a narrative rather than a news coverage so that the content of the scandal would become more attractive and therefore readable by the public.

### **Data availability statement**

All supplementary materials of this study (including the appendix with the tables, the codebook, the dataset and the syntax) are anonymized and available at: DOI 10.17605/OSF.IO/KY57M  
Disclaimer: some of the labels of the variables are in Greek.

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## References

- Arnold, A. K., & Lal, S. (2012). Using Media to Fight Corruption. Partnership for Transparency Fund Working Paper Series, (1). Retrieved February 15, 2024 from <https://ptfund.org/wp-content/uploads/2018/07/WP01-Media-to-Fight-Corruption.pdf>
- Baum, M. A. (2002). Sex, lies, and war: How soft news brings foreign policy to the inattentive public. *American Political Science Review*, 96(1), 91-109.
- Budgeon, S. (2014). The dynamics of gender hegemony: Femininities, masculinities and social change. *Sociology*, 48(2), 317-334.
- Burgoon, J.K. (1978). A communication model of personal space violation: Explication and an initial test. *Human Communication Research*, 4(2), 129-142. <https://doi.org/10.1111/j.1468-2958.1978.tb00603.x>
- Burgoon, J. K. (2015). *Expectancy Violations Theory*. In Berger, M.E., et al. (2016). *The International Encyclopedia of Interpersonal Communication*. John Wiley & Sons, Inc. pp. 1-9
- Cole, H., & Murck, P. (2006). The myth of the localism mandate: A historical survey of how the FCC's actions belie the existence of a governmental obligation to provide local programming. *CommLaw Conspectus*, 15, 339.
- Uribe R and Gunter B (2004) Research note: The tabloidization of British tabloids. *European Journal of Communication* 19(3)
- Cowling, P. (2004). An earthy enigma: The role of localism in the political, cultural and economic dimensions of media ownership regulation. *Hastings Comm. & Ent. LJ*, 27, 257.
- Courtemanche, M., & Green, J. C. (2020). A Fall from Grace: Women, Scandals, and Perceptions of Politicians. *Journal of Women, Politics & Policy*, 41(2), 219-240. <https://doi.org/10.1080/1554477X.2020.1723055>.
- Cucchi, S., & Cavazza, N. (2021). More guilty if woman: The role of gender and causal attribution in political scandals' impact. *The Journal of Social Psychology*, 161(2), 173-181. <https://doi.org/10.1080/00224545.2020.1779641>
- Cucchi, S., Graziani, A., R., Guidetti, M., Cavazza, N. (2021). Men and Women Defending Themselves from Political Scandals: Gender Stereotypes and Proneness to Forgive Scandalous Politicians. *International Review of Social Psychology*, 34(1): 18, 1–11. 10.5334/irsp.463.
- Curran, J. (2011). *Media and Democracy* (1st ed.). Routledge. <https://doi.org/10.4324/9780203406878>.
- Curran, J., & Seaton, J. (2018). *Power Without Responsibility: Press, Broadcasting and the Internet in Britain* (8th ed.). Routledge. <https://doi.org/10.4324/9781351212298>.

- D'Heer, J., De Vuyst, S., & Van Leuven, S. (2022). Gendering in the electoral run: A media monitoring study of women politicians' representation in Belgian news. *Journalism*, 23(11), 2289–2310. <https://doi.org/10.1177/14648849211032427>
- Devitt, J. (2002). Framing Gender on the Campaign Trail: Female Gubernatorial Candidates and the Press. *Journalism & Mass Communication Quarterly*, 79(2), 445–463. <https://doi.org/10.1177/107769900207900212>
- Diamond, L., & Morino, L. (2004). *Understanding the Rule of Law: A Primer on the Foundations and Implications of the Concept*. Stanford University, Center on Democracy, Development, and the Rule of Law.
- Entman, R. M. (1993). Framing: Toward Clarification of A Fractured Paradigm. *Journal of Communication*, 43(4), 51-58. <https://doi.org/10.1111/j.1460-2466.1993.tb01304.x>
- Entman, R. M. (2012). *Scandal and silence: Media responses to presidential misconduct*. John Wiley & Sons.
- European Institute for Gender Equality (n.d.a). Feminities. Glossary and Thesaurus, Publications and Resources. Retrieved February 15, 2024 from <https://eige.europa.eu/publications-resources/thesaurus/terms/1045>
- European Institute for Gender Equality (n.d.b). Masculinities. Glossary and Thesaurus, Publications and Resources. Retrieved February 15, 2024 from <https://eige.europa.eu/publications-resources/thesaurus/terms/1047>
- Fisk, S. R., & Ridgeway, C.L. (2018). 'Framing Gender' in Risman, B.J., et al. (2018.) *Handbook of the Sociology of Gender*. Springer: pp. 157-171
- Fiske, S. T., & Taylor, S. E. (1991). *Social cognition (2nd ed.)*. McGraw-Hill, New York.
- Glaser, B. G. & Strauss, A. (1967). *The Discovery of Grounded Theory: Strategies for Qualitative Research*. London: Aldine Transaction.
- Goffman, E. (1974). *Frame analysis: An essay on the organization of experience*. Harvard University Press.
- Hayashi, C. (1950). On the quantification of qualitative data from the mathematico-statistical point of view, *Annals of the Institute of Statistical Mathematics*, 2, pp. 35-47.
- Iyengar, S. (1991). *Is anyone responsible? How television frames political issues*. University of Chicago Press.
- Kahneman, D., & Tversky, A. (1984). Choices, values, and frames. *American Psychologist*, 39(4), 341–350. <https://doi.org/10.1037/0003-066X.39.4.341>
- Krippendorff, K. (2018). *Content analysis: An introduction to its methodology*. Sage publications.
- Kyriazi, N. (2001). *Sociological Research: A Critical Overview of Methods and Techniques*. Athens: Pedio.
- Lefief, J. P. (2022, December 15). 'Qatargate': What we know about the suspected corruption at the European Parliament. *Le Monde*. Retrieved February 15, 2024 from [https://www.lemonde.fr/en/international/article/2022/12/15/qatargate-what-we-know-about-suspected-corruption-at-the-european-parliament\\_6007916\\_4.html](https://www.lemonde.fr/en/international/article/2022/12/15/qatargate-what-we-know-about-suspected-corruption-at-the-european-parliament_6007916_4.html).

- Lorber, J. (1994) *Paradoxes of Gender*. New Haven, CT: Yale University Press
- Luengo, O., G. & Mesquita, N. M., (2016). The coverage of Corruption in Brazil and Spain, pp. 15-177, in Luengo, O.G. (Ed): *Political Communication in Times of Crisis*. Berlin: Logos Verlag.
- Peng, A. Y., Cummings, J., & Li, Y. (2022). Post-reform gender politics: How do Chinese Internet users portray Theresa May on Zhihu. *Feminist Media Studies*, 22(1), 48–65. <https://doi.org/10.1080/14680777.2020.1788110>
- Riffe, D., Lacy, S., Fico, F., & Watson, B. (2019). *Analyzing media messages: Using quantitative content analysis in research*. Routledge.
- Ross, K. (2000, April 10-13). Women behaving badly? Framing gender in political communication. Political Studies Association-UK 50th Annual Conference, London
- Samaras, A. N., Kolovos, K., & Papagianni, N. (2015). Strategies of Ethos Deconstruction in the Referendum: A Systematic Exploration of Parliamentary Discourse. *Issues of Communication*, Issue 20-21, pp. 57-81.
- Samaras, Ath. N., Iordanidou, S. & Dogani, M. (2016), The Dialectic on International Relations and Political Communication: The Impact of the Financial Crisis Upon the Nation Image of Germany; A Comparative Analysis in Greek and UK Press. In O. G. Luengo, (Ed.), *Political Communication in Times of Crisis*. Berlin: Logos Verlag, 121-144.
- Samaras, Ath. N., Dimitriou, M.-E. & Loukopoulou, E. (2017), Η Συστηματική Καταγραφή των Απεικονίσεων του Συστήματος Κρατών στα Μέσα Ενημέρωσης ως Προϋπόθεση Αποτελεσματικής Διαχείρισης της Κρατικής Εικόνας: Μεθοδολογικές Παρατηρήσεις” στο Σ. Ιορδανίδου (Επιμ.), *Διαχείριση και Συγκρότηση Εικόνας Τόπου: από το Place Branding στην Ταξιδιωτική Δημοσιογραφία*, [Systematic Recording of Representations of the State System in the Media as a Prerequisite for Effective State Image Management: Methodological Observations. In S. Iordanidou (Ed.), *Management and Formation of Place Image: From Place Branding to Travel Journalism*], Athens: Metamesonykties Ekdoseis, 179-209.
- Scheufele, D. A. (1999). Framing as a theory of media effects. *Journal of communication*, 49(1), 103-122.
- Seligson, M. A. (2002). The Impact of Corruption on Regime Legitimacy: A Comparative Study of Four Latin American Countries. *The Journal of Politics*, 64(2), 408-433.
- Stapenhurst, R. (2002). *The Media and Good Governance*. WBI Working Papers. Retrieved February 15, 2024 from [https://documents1.worldbank.org/curated/en/893191468766225068/016824232\\_200210329034146/additional/multi-page.pdf](https://documents1.worldbank.org/curated/en/893191468766225068/016824232_200210329034146/additional/multi-page.pdf)
- Thompson, J. B. (2000). *Political Scandal: Power and Visibility in the Media Age*. (1st ed.). Polity.
- Tuchman G (1973) Making news by doing work: Routinizing the unexpected. *The American Journal of Sociology* 79(1): 110–131.
- Wheaton, S. (2022, December 11). Qatar scandal: What just happened at the European Parliament? POLITICO. Retrieved February 15, 2024, from <https://www.politico.eu/article/eva-kaili-doha-panzeri-qatargate-what-just-happened-at-the-european-parliament/>.

# The effects of the Greek 'Metoo' movement on representations of femicide in the news media and social media

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## Abstract

The 'Metoo' movement constituted a worldwide commencement for the disclosure of sexual harassment and sexual abuse scandals, placing the gender issue in the foreground. The subject of the present effort is to examine the effect of the 'Metoo' movement in Greece in reference to the way femicides are covered by the print and television news media, as well as the impact of the movement on users of social media and especially on Facebook. The research method used in order to provide answers to the main research questions is qualitative content analysis. According to this analysis, despite having made some progress, Mass Media have a wary attitude towards the use of the term femicide and they cover the news of femicide in an incorrect and misleading manner. On the other hand, the effect of the 'MetooGR' movement is clearly visible mainly among the users of social media and especially among women.

**Keywords:** 'Metoo' movement, Gender based violence, Femicide, News Media, Social Media.

## Introduction

Gender-based violence is a global, timeless, social phenomenon, which in recent years, especially after the emergence of the COVID-19 pandemic, has reached alarming proportions both in Europe and Greece. The most extreme form of gender-based violence is femicide, which means the murder of women because of their gender (European Institute for Gender Equality [EIGE], n.d). More specifically, in Greece, eight femicides were committed in 2020, 23 femicides were committed the next year and 24 in 2023 (General Secretariat for Equality and Human Rights, 2023). The term femicide is not a universally accepted term in the legal, political, social and media world.

News media play a key role in the portrayal of gender, since they attract public attention, affect attitudes and public opinion. The use of sexist language and behaviors against women is common in the media (Katsambekis, Kanaouti & Kakepaki, 2024). In addition, women, especially those belonging to marginalized social groups (e.g. refugees etc.), are given little space and time in the media (Ryan & Tonkiss, 2023). When women are given a platform, the image projected of them is far from reality (Haider, Olimy & Al-Abbas, 2021). Their sexist, unrealistic image usually includes the following stereotypes: women are defined in relation to a man, presented as passive,

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submissive, without will and determination, housewives and/or sexual objects (Ward & Grower, 2020). Similar false representations are also observed in cases of domestic violence, as well as femicide (Sela-Shayovitz, 2018). In Greece, the murder of the 21-year-old student Eleni Topaloudi in Rhodes, in November 2018, was a key event for opening the media dialogue on the commission of femicide. However, the way femicide is presented in the media is evidence of the wrong approach to the issue until today.

The aim of the present research is to contribute to the visibility of the issue in the literature regarding the impact of the 'MetooGR' movement on the way in which femicide is presented in the media and the social media. The study of these representations can map the present situation in the media and social media about the issue of femicides and then lead to appropriate improvement interventions. The present research focuses on two femicides. The first is Caroline Crouch's femicide and the second an unknown 55-year-old woman from Komotini. This study examines the way the femicides were represented in national and local newscasts and newspapers. In the second part of this study emphasis is placed on the representation of femicides by the users in social media. The comparison of an institutional and a non institutional media is helpful in drawing conclusions. The research method used to discuss the data and answer the main research questions is thematic content analysis.

In the following sections, information is provided about the emergence of “Metoo movement”, the role of media in the representation of the events and the standardized coverage of femicides in the media, according to bibliography. The section of methodology and details about the sample is set out below. The results are then presented followed by the section of the discussion. Interpretations of the results, the limitations of the research and some proposals are also indicated.

### **The “Metoo” movement**

The global social movement “Metoo” against sexual harassment and abuse emerged in the United States of America (USA) on 15 October 2017, by the American actress Alyssa Milano, who posted the following on Twitter: "if you have been sexually harassed or abused, write “Metoo” in response to this tweet". The Facebook posts, comments and reactions exceeded 12 million in less than 24 hours (CBS News, 2017). Since then, numerous celebrities have shared their personal experiences of harassment or abuse, especially in the workplace (Pflum, 2018). Their example was followed by many non-celebrity women, publishing their own relevant abusive experiences. Soon, the hashtag “#Metoo” was used in various countries, expanding and giganticizing the movement, eventually giving it global characteristics (Alcande & Villa 2022: 1-18).

In Greece, the “Metoo” movement arrived belatedly in December 2020. It was triggered by the courageous Olympic champion Sophia Bekatorou, who denounced the sexual abuse she had suffered at the hands of a vice-president of the Hellenic Sailing Federation and representative of sailing at the Hellenic Olympic Committee, Aristides Adamopoulos. She revealed her abuse in an interview given to journalist Evita Tsilochristou at the Marie Claire magazine (Tsilohristou, 2020). Her revelation triggered a series of similar allegations. Accusations of harassment and abuse of women in the field of sport were followed by accusations from men and women in the field of entertainment, in particular, theater and television. This was followed by accusations from female students of various university institutions (Newsroom, 2021). The culmination was the accusations for sexual harassment and abuse of adult and underage boys against the former artistic director of the National Theatre, Dimitris Lignadis (“Greek ex-theatre director remanded over rape allegations, 2021”). The media played a catalytic role in the emergence and dissemination of the movement in Greece and worldwide, which was then intertwined with every modern social movement.

### **Shaping reality through the media**

According to the theory of social representations, a prerequisite for communication between people is the existence of a common frame of reference, which is composed of social representations. Social representations refer to “cognitions stamping the collective thinking of society” (Höijer 2011: 6). Often, social representations are structured on an irrational attribution of labels. Essentially, they reflect the general way of evaluating, classifying and thinking about the world (Jodelet, 2008).

The media occupy an important position in the construction of meaning, producing and distributing knowledge - representations and mediating 'reality' to all their recipients. Through the transmission of information and news to the public, they essentially transmit symbolic sets and systems, shaping, to a certain extent, the interpretation of social reality and public opinion (Lampropoulou, 1997). Through agenda setting, the media influence public opinion by determining the importance of the issues on which the receiver is asked to form an opinion. Essentially, the media choose which issues have priority (agenda priming), which issues will be presented (agenda setting) and within which interpretative framework (agenda framing) they will be placed (Scheufele & Tewksbury 2007: 11).

### **Representations of femicide in the media**

Since the media do not simply reproduce a news item, but place it from the outset and by definition within its own interpretative framework, they contribute significantly to the social construction of the concept of gender, the corresponding representations and gender stereotypes. The ways in



which they achieve this are through the language they use, the content of the news they present and the framing of the media. The common ways of framing a femicide, according to Gillespie & al. (2013) are as follows:

- Victim blaming and/or excusing the perpetrator. In this framing, the emphasis is on the victim's behavior, blaming the victim and excusing the perpetrator. Shifting blame from the perpetrator to the victim is done directly, through a negative characterization or by quoting irrelevant information about the crime, making reference to the victim's clothing or the causes of the femicide, which may include the perpetrator's alleged mental illness. In any case, the link between violence against women and the tendency of male perpetrators to assert their power is absent.
- Society in shock. The crime is presented as an isolated incident, a personal problem, while the perpetrator is presented as a normal person and a peaceful family man above suspicion, as confirmed by people in his wider social circle. The absence of any reference to the relationship between the victim and the perpetrator is usual, as is the silencing of the violence suffered by the victim before her death.
- Construction of the 'Other'. Femicide is projected as a crime that does not concern the majority, but some specific people different from us. This category of people includes the refugees, the irreligious, the mentally ill people and people of lower social and economic status. Besides, it is not uncommon for the media to focus on the origin of the perpetrator, reproducing racist and intolerant stereotypes.
- Police frame or “just the facts”. The media present the facts objectively, drawing information from police sources, which are their main source of information. In this case, the news of the femicide is accompanied by a dramatic tone and the gruesome details of the crime. Usually, the corresponding report includes information about the life of the victim, while the same is not true to a similar extent for the life of the perpetrator.

## **Method and Research Questions**

The aim of the research is to highlight the impact of “MetooGR” on the way the news media present femicide and on the users of the social media. In order to achieve the research objectives, the following research questions were formulated:

RQ1. Is the term femicide supported or not by news media and social media users?

RQ2. In what ways is femicide presented in the news media and in social media after the emergence of “MetooGR”?

The research method that was considered appropriate and was chosen is qualitative content analysis and specifically thematic content analysis (Wimmer & Dominick, 2014). Through thematic analysis, cognitive access to collective modes of meaning-making and experiences is gained. More specifically, both on the news media and social media sample repetitive patterns of covering the femicides were sought. Then, a codebook of the content analysis was formulated based on previous research and the collected empirical material. These patterns were grouped and lead to some thematic categories.

The codebook for analyzing news media was designed by examining the language used in articles, headlines, and lead paragraphs in newspapers, as well as the language of TV presenters, reporters, and on-screen text during broadcasts. In both cases, visual content was also analyzed. The study specifically explored how the murder was described and justified, the sources referenced, and the portrayal of both the victim and the perpetrator. Additionally, it looked at the attitudes of family and friends toward both parties. Particular emphasis was placed on the use of the term “femicide”, both in terms of frequency and context. For social media analysis, the codebook focused on the use of the term “femicide”, how the phenomenon was discussed, including its causes, media coverage, the role of law enforcement, and how women connected their own experiences to those of others.

### **Sample of the media research**

This paper will study two cases of femicide, which were committed after the emergence of “MetooGR”. The first femicide concerns the 20-year-old Caroline Crouch, who was murdered by her husband on 11/5/2021 in Glyka Nera, Attiki. Her husband, Babis Anagnostopoulos, claimed that ruthless robbers entered their house and murdered Caroline and their dog. Thirty-seven days later he confessed that he committed the murder. The second femicide involves a 55-year-old disabled woman from Komotini, whose name is not known. Her husband poured petrol on her and set her on fire. The woman succumbed to her burns on 12/9/2022.

In this research, judgemental or purposive Sampling was applied, as the sample was selected after deliberate subjective selection and collection of the material, which is nevertheless considered a representative sample. To investigate the research questions, material was collected from two print and two television media. With regard to the print media, the electronic form was chosen because of the extremely wide use of the internet at present. It was considered useful for the research to include one nationwide and one local media, since one of the femicides was committed in a provincial town and the other one close to the capital, Athens. The media were selected based on their popularity, which was checked using the Similarweb Traffic Analysis tool. More specifically, two articles were selected from the news website of the nationally circulated newspaper Proto

Thema and the local newspaper Xronos, which is located in the city of Komotini. So, the comparison of national and local news media will be helpful for the extraction of some final results.

The articles and newscasts of the sample were selected on the basis of specific dates which are related to the femicides. In the case of Caroline's femicide, the two dates of the search for articles are as follows: 18/6/2021 and 22/6/2021: on the day that her husband confessed his crime after a long interrogation, and on the day he was found to be in custody. Regarding the other case of femicide, the key dates for the research were 10/9/2022 and 12/9/2022. The crime was committed on Thursday evening 8/9/22, but the article which was published on 10/9/22 was chosen because of the detailed report it contained, just two days before the woman passed away.

Related to television media, the nationwide and first in popularity MEGA CHANNEL and the local television station RODOPI TV – RCHANNEL, which is located in Komotini, were selected. For the purposes of the research, two news bulletins were selected for each femicide. The news bulletins which included the news of Caroline's femicide were taken from MEGA CHANNEL and the news of the femicide of the woman who was murdered in Komotini from the local TV station. The subject of study was the way that the two femicides were presented. Emphasis was placed on the language and the interpretative context of the presentation of the news of each femicide.

### **Sample of the social media research**

In order to study the impact of “MetooGR” on the users of the social media, the posts of 20 users of the Facebook (ten women and ten men) were collected, with the criterion of being referred to in the two specific femicides, on specific dates. In more detail, the posts for Caroline's femicide sought between 17/6/21 and 22/6/21. In the first date incriminating evidence against Caroline's husband was revealed and in the second he was taken into custody. In the case of the other femicide, the time limit was set from 8/9/22, when the woman was attacked by her husband, to 12/9/22, the day of the woman's death. The platform of Facebook was chosen for the selection of the participants, as it is the most popular social media worldwide (Dixon, 2024).

The chosen users belong to the researcher's wider social circle. The average age of the total sample of women (10 women) is 37 years and all of them are higher education graduates. Regarding their professional status, six of them are psychologists, two are university professors and two are journalists. The ten men who participated in the survey have an average age of 35.6 years. Seven out of ten are higher education graduates, while the remaining three are secondary school graduates. Regarding their professional status, three are farmers, two are journalists and two are university professors, while the professional status of the others remains unknown. The search is based on the key dates for each femicide.

## Results of the mass media

In total, four news bulletins (two bulletins on each channel) and four news articles (two on each online newspaper) were studied. The word ‘femicide’ was not found in any of the articles and it was only mentioned twice in two television media. The words ‘homicide’, ‘murder’ and ‘crime’ were used instead of the term ‘femicide’. The term femicide was used in the newscast of RODOPI TV on 12/9/22 by the anchorwoman of the newscast, who quoted the following phrase: “Another femicide is recorded in our country...”. Also, in MEGA newscast, the word ‘femicide’ was used by Anna Kandaraki, a clinical psychologist. Kandaraki, as a guest on the broadcast, dissociated herself from the journalist's and the channel's stance regarding Caroline's femicide.

After coding and analyzing the content of the articles and reports, they were classified into frames. The frames of this research are common with them of the existing literature. According to the research data, the predominant way of covering the news was the Police frame or “just the facts”. In combination with this coverage, the other ways of covering the femicides were also identified. More specifically:

### *Police frame or “just the facts”*

Both in headlines and in the main body of reports, femicide is presented as an event, accompanied by details of how the crime was committed (“From that moment on and for ten full minutes, he closed her mouth and nose and she wriggled until she finally passed out.”, Proto Thema, 18/6/21). In this particular way of covering femicide, the information in the reportage is usually drawn from police statements, which are carried in their entirety (“The police bulletin reports:...”, headline of RODOPI TV newscast, 9/9/22). The reports do not lack information regarding Caroline’s identity and life, as well as photos of the couple's life together, taken from the social media. As far as the femicide of the 55-year-old woman is concerned, the only personal information published is the following: “It should be noted that the woman was an amputee on her right leg and was reportedly in her 4th month of pregnancy” Xronos newspaper, 12/9/22).

### *Construction of the “Other”*

In both femicides the media represent the phenomenon of femicide as an isolated incident and which concerns people different from the majority. In Caroline's case, this type of coverage occurred both before and after the crime was solved. The perpetrator, Babis Anagnostopoulos, initially claimed that his wife was murdered by an armed robber who broke into their house. For more than a month, the media reproduced news reports about the indictment of foreigners, referring to the upsurge in crime. According to the media, the main suspect was a Georgian known robber (“GEORGIAN LESTER WHO WAS HELD UNDER SUSPECT FOR CAROLINE’s MURDER ACCUSES POLICE VIOLENCE”, headline in MEGA news bulletin, 22/6/21). After the real perpetrator confessed to the crime, the media focused on his apathetic and unrepentant attitude,

implying that underlying a mental disorder that caused the commission of the crime (“NOT A SINGLE TEAR IN THE INTERROGATION”, MEGA news headline, 18/6/22). Something similar took place in the news of the femicide of the 55-year-old woman from Komotini. The newspaper Xronos implied that the cause of the attack was related to the psychiatric problems of the perpetrator (“From the report, it appears that he was taking medication”, Xronos newspaper, 10/9/22).

#### *Victim blaming and/or excuses the perpetrator*

The media justified the victims' killers in an indirect way, using emotionally charged phrases and focusing their attention on the victim's behavior. The justification of the perpetrator also occurs indirectly through the attribution of responsibility in his mental problem. The media often associate mental illness with crime, which is completely unsubstantiated and dangerous, as it promotes stereotypical and stigmatizing perceptions of the mentally ill (“The pilot may have claimed in his testimony that in the argument he “blurred” and killed his 20-year-old wife and mother of his child...”, Proto Thema, 18/6/21, “The 62-year-old perpetrator appears to have doused his wife with petrol and then regretted it and tried to put out the fire, and called the police”, RODOPI TV News, 12/9/22).

#### *Society in shock*

This type of cover-up is becoming obvious mainly in the case of Caroline's femicide. Both the MEGA news bulletins and the reports of Proto Thema are characterized by the dramatic and emotional tone of the news of Caroline's femicide (“As the analyses show, the chronology of the horror is as follows...”, Proto Thema, 18/6/21). The MEGA journalists, approaching familiar faces of the couple, conveyed the surprise of the interviewees after the proof of the woman-killer's guilt. Even after the guilty party was revealed, the media described the perpetrator as a 33-year-old pilot, a phrase suggesting authority and power. This description, combined with the publication of photographs of him in flight, created the image of a young, handsome and successful man, above any suspicion.

### **Results of the social media**

The material, which was collected from the social media, concerns exclusively the femicide of Caroline, as no post related to the femicide of the 55-year-old woman from Komotini was found. The posts that were collected may not, in their entirety, constitute original material, but may have been drawn from other profiles and then shared by a member of the study sample. Almost all of the Facebook female users, from whose profiles the material of this survey was drawn, mentioned the word ‘femicide’ in their post. In contrast to the female Facebook users, only two men used the word ‘femicide’. The material collected was coded into the following thematic categories:

### *Awareness and response to the phenomenon*

The majority of women express the need to address the phenomenon of femicide. Some women with a stronger and others with a milder tone, directly or indirectly seek to raise awareness about the crime of femicide, while demanding social changes towards the eradication of the phenomenon (“It is our duty not to leave all of them on a bare branch. Not to give them time to catch their breath. For the simplest, for the smallest... We owe it to the murdered, we owe it to the unborn, but most of all we owe it to the women who are (still) alive...” I.K., woman, 28 years old).

### *Patriarchy as a cause of femicide*

Half of the female users mentioned the word patriarchy in their publication. In particular, they point to the patriarchal system as one that breeds and feeds on gender discrimination and gender violence (“We are not all here. The murdered women are missing. Those murdered by the patriarchy.” K.K. woman, 30 years old)

### *Emphasis on the term ‘femicide’*

Some women place particular emphasis (grammatically and syntactically) on the term ‘femicide’. In this way they express their anger at the contestation and non-recognition of the term, while trying to convince of its correctness and usefulness (“FEMICIDE IS.” D.C., woman, 40 years old).

### *The collective experience of gender violence*

After centuries of oppression, women say they are used to being oppressed and devalued at every level of their public and private lives. This is a collective experience of women, whereby the majority of women feel insecure and under constant threat to their physical and psychological integrity (“We are used to your apathy. Just as we are used to patriarchy, misogyny, sexism, hegemonic and toxic masculinity, homophobic and transphobic comments, attempts to control our bodies and our choices, statistics that reflect domestic violence. We are used to it all.” M.S., woman, 35 years old).

### *Criticism of the media coverage of femicide*

A thematic category which is common both to women and men is the criticism toward the media. They are expressing their disgust and indignation at the way the media reported the news of Caroline's femicide. Overall, their publications convey the message that the media are missing the point of the issue and the source of the problem, reinforcing the already deeply entrenched gender stereotypes of public opinion (“Let us not hear again from the media about the “unfortunate woman”, about “crimes of passion”, “family tragedies”, “bad moments”, cases where “jealousy armed the perpetrator's hand / or erotic amok clouded his mind.” D.C., woman 39 years old, “The labels the media assigns to victims and defendants are not just indicative of society. They are

indicative of how necessary the daily and organized battle with the misanthropes of this world is.” A.L., man, 31 years old).

*Criticism of the Hellenic Police for its attitude towards Caroline's femicide*

Both men and women referred to Stavros Balaskas, a trade unionist of the Greek Police. They express their anger and disgust at the particular individual who through statements to a television medium, justified Caroline's femicide. Balaska's only objection concerned the manner in which the perpetrator chose to proceed from the commission of the crime onward, since if he had acted differently he could have secured a more favorable sentence (“Shame on Balaskas, we said today? Shall we say.” I.K., woman 28 years old “Chief Balaska's instructions to killers to get off cheap..”, P.A., man 34 years old).

*Instructions to abused victims*

Some male users republished a text, authored by the journalist, sociologist and Health Program Manager at the Onassis Foundation, Alexandros Morellas. This text, which is addressed to women, is both imperative and instructive. In essence, the author seeks to inform women about when and how to leave an abusive relationship, through what is known as mansplaining (“Don't wait for him to take out his anger on you for the 100th time before you leave...So if you need to, go to the police first...” G.K., man 25 years old, G.K., man, 34 years old S.L., 39 years old (straight.gr).

*Separation of the terms of femicide and androicide*

A man explains the meaning of the term androicide, which is usually contrasted with the term of femicide. He tries to defend the term ‘femicide’ and its utility (“For those who don't understand the term ‘femicide’, and suggest male infanticide, perhaps some explanation is indeed needed...” A.C., man 45 years old).

## **Discussion**

The phenomenon of femicide in Greece has reached alarming levels, with research by the Mediterranean Institute of Investigative Journalism revealing a significant increase. Between 2020 and 2021, Greece experienced the highest annual rise in femicides among 20 European countries, with a staggering 187.5% increase in just one year (Louloudi et al., 2023). Despite this surge and the emergence of the “MetooGR” movement, media coverage remains highly resistant to embracing the term "femicide." This reluctance is evident in the way news outlets continue to handle these cases, reflecting outdated reporting styles that often obscure the gendered nature of the crime.

One of the clearest signs of this resistance is the near-complete absence of the word "femicide" in media reports. In the research sample, no news articles used the term, and it appeared only twice

in television coverage—both times spoken by a mental health expert rather than a journalist. Instead, more generic terms like "homicide," "murder," and "crime" dominate coverage, stripping the crimes of their specific context as gender-based violence. This linguistic choice not only fails to highlight the gendered aspect of the killings but also perpetuates harmful narratives.

Media representations of femicide often subtly shift blame onto the female victims, while portraying the male perpetrators as mentally unstable. This portrayal creates a sympathetic image of the perpetrator and obscures the systemic misogyny and gender inequality that often underlie these crimes. Additionally, the media frequently idealizes the couple involved, suggesting that no one could have anticipated the crime, further distancing it from societal patterns of violence against women. Overall, femicide is treated as a routine crime, devoid of gendered implications.

Despite the rise of “MetooGR,” media depictions of femicide remain largely unchanged. However, there has been some progress: outdated phrases like "crime of passion," "hate crime," and "family tragedy," which previously dominated coverage, are used less frequently today. Nevertheless, this shift is superficial, as the core framing of femicide continues to be distorted and misleading, reinforcing misogynistic attitudes and gender stereotypes rather than challenging them.

The disparity in media coverage of different femicides is another troubling aspect of the current landscape. The femicide of Caroline Crouch, for example, dominated Greek news for months, while the brutal killing of a 55-year-old woman in Komotini received little attention. This suggests that media coverage is driven more by public interest and the potential to boost ratings than by the severity or context of the crime. Caroline Crouch’s case, which garnered significant attention, naturally led to more social media discussions, while the case from Komotini remained largely absent from public discourse.

Interestingly, provincial media tend to handle femicide coverage differently from national outlets. The "society in shock" narrative, which sensationalizes the crime, is less prevalent in local media. One possible reason is the desire to avoid a strong negative reaction from the local population toward the perpetrator and his family. Local journalists may also have greater freedom of expression compared to their national counterparts, who are often constrained by the interests of media owners and financiers. Provincial media are also more open to using the term "femicide" in their reporting.

In contrast to traditional media, social media—especially platforms used by women—has embraced the term "femicide" more readily. Social media users are critical of the way mass media reports on these crimes, often condemning the lack of nuance and sensitivity in the coverage. While both men and women critique media portrayals, men tend to approach the issue in a more simplistic and superficial manner. The “MetooGR” movement has thus had a more positive impact on social media discussions of femicide than on mainstream media.



To address the shortcomings in media coverage of femicide, several steps are necessary. First, journalism students and professionals should receive training on how to report on gender issues accurately and sensitively. The creation of a comprehensive guide on media coverage of gender-based violence would also be beneficial for those working in newsrooms. Additionally, enforcing ethical guidelines and imposing penalties for irresponsible reporting could help reduce the persistence of gender stereotypes in the media.

The research also highlights the need for further investigation. Future studies should involve larger and more diverse samples, moving beyond friends, family, and specific professional groups that are already sensitized to gender issues. Expanding research to other social media platforms, investigative journalism outlets, and exploring the role of experts in shaping public discourse on femicide and “MetooGR” would provide valuable insights.

In conclusion, while there have been minor improvements in how femicide is covered, particularly on social media, the Greek media as a whole continues to inadequately address the issue. The reluctance to use appropriate terminology and the perpetuation of harmful stereotypes prevent a more accurate understanding of gender-based violence and hinder societal progress in addressing this critical issue.

## References

- Alcande, M. C., & Villa, P.-I. (2022). #MeToo and Beyond: Perspectives on a Global Movement. University Press of Kentucky. <https://doi.org/10.2307/j.ctv2mm210k>
- Braun V. & Clarke V. (2012). Thematic Analysis in H. Cooper P.M. Camic, D.L. Long, A.T. Panter, D. Rindscopf, & K. J. Sher (Eds.), APA Handbook of research methods in Psychology, Vol. 2: Research Designs: Qualitative, quantitative, neuropsychological and biological (p.p. 57-71). Washington, DC: American Psychological Association. [https://www.researchgate.net/publication/269930410\\_Thematic\\_analysis](https://www.researchgate.net/publication/269930410_Thematic_analysis)
- CBS News. (2017, October 17). More than 12M “Me Too” Facebook posts, comments, reactions in 24 hours. <https://www.cbsnews.com/news/metoo-more-than-12-million-facebook-posts-comments-reactions-24-hours/>
- Dixon, S. J. (2024, January 10). Facebook - Statistics & Facts. Statista. <https://www.statista.com/topics/751/facebook/#topicOverview>
- European Institute for Gender Equality [EIGE] (n.d.). έμφυλα στερεότυπα. Ευρωπαϊκό Ινστιτούτο για την Ισότητα των Φύλων. Retrieved 2022, February 13. <https://eige.europa.eu/el/taxonomy/term/1222>
- General Secretariat for Equality and Human Rights (2023). 4th Annual Report on Violence against Women <https://isotita.gr/wp-content/uploads/2023/11/4h-ethsia-ekthesi-gia-ti-Via-kata-twn-gynaikwn.pdf>

- Gillespie, L. K., Richards, T. N., Givens, E. M., & Smith, M. D. (2013). Framing deadly domestic violence. *Violence Against Women*, 19(2), 222–245. <https://doi.org/10.1177/1077801213476457>
- Greek ex-theatre director remanded over rape allegations. (2021, February 26). Al Jazeera. <https://www.aljazeera.com/news/2021/2/26/greek-ex-theatre-director-remanded-over-rape-allegations>
- Jodelet, D. (2008). Social representations: The beautiful invention. *Journal for the Theory of Social Behaviour*, 38(4), 411–430. <http://doi.org/10.1111/j.1468-5914.2008.00383.x>
- Haider, A. S., Olimy, S.S., & Al-Abbas, L. S. (2021). Media Coverage of Syrian Female Refugees in Jordan and Lebanon. *SAGE Open* 11 (1): 215824402199481–21. <https://doi.org/10.1177/2158244021994811>
- Höijer, B. (2011). Social Representations theory. *Nordicom Review*, 32(2), 3–16. <https://doi.org/10.1515/nor-2017-0109>
- Katsambekis, G., Kanaouti, S. & Kakepaki, M. (2024). Women’s representation in Greek media in the run up to the 2024 European Parliament elections. Heinrich Böll Foundation. <https://gr.boell.org/en/2024/06/05/womens-representation-greek-media-run-2024-european-parliament-elections>
- Krippendorff K. (2004). *Content analysis: An introduction to its methodology*, Sage Publications. [file:///C:/Users/aggel/Downloads/intro\\_to\\_content\\_analysis.pdf](file:///C:/Users/aggel/Downloads/intro_to_content_analysis.pdf)
- Lampropoulou, E.P. (1997). *The construction of social reality and the mass media: The case of violence and crime*. Hellenic Literature.
- Louloudi, J., Morfonios, N., & Zafeiropoulos, K. (2023, February 24). The undeclared war on women in Europe: Femicide and the rise of violence against women in Europe during the pandemic. A cross-border data investigation by MIIR conducted for the first time on the subject in Europe. Mediterranean Institution of Investigative Journalism. <https://miir.gr/en/the-undeclared-war-on-women-in-europe-part-1/>
- Newsroom. (2021, January 18). Καταγγελίες: Καθηγητής του ΑΠΘ παρενοχλούσε σεξουαλικά φοιτήτριες, Athens Voice. [https://www.athensvoice.gr/greece/698573\\_kataggelies-kathigitis-toy-aph-parenohloyse-sexoyalika-foititries](https://www.athensvoice.gr/greece/698573_kataggelies-kathigitis-toy-aph-parenohloyse-sexoyalika-foititries)
- Pflum, M. (2018, October 16). A year ago, Alyssa Milano started a conversation about #MeToo. These women replied. NBC News. <https://www.nbcnews.com/news/us-news/year-ago-alyssa-milano-started-conversation-about-metoo-these-women-n920246>
- Ryan, H., & Tonkiss, K. (2023). Loners, Criminals, Mothers: The Gendered Misrecognition of Refugees in the British Tabloid News Media. *Sociological Research Online* 28(4): 995–1013. <https://doi.org/10.1177/13607804221100555>
- Scheufele, D. A. & Tewksbury, D. (2007). Framing, Agenda Setting, and Priming: The Evolution of Three Media Effects Models. *Journal of communication* 57, 9-20. <https://doi.org/10.1111/j.0021-9916.2007.00326.x>
- Sela – Shayovitz R. (2018). ‘She knew he would murder her’. *Journal of Comparative Social Work* 13(1), 11-34. <https://doi.org/10.31265/jcsw.v13i1.157>

- Tsilochristou, E. (2020, December 22). Olympic champion Sophia Bekatorou, speaks to Marie Claire for the first time about the sexual abuse she received in sports - Video. Marie Claire. [https://www.marieclaire.gr/celebrities/news-celebrities/i-olimpionikis-sofia-bekatorou-mila-sto-marie-claire-ke-gia-proti-fora-gia-ti-sexoualiki-parenochlisi-ston-choro-tou-athlismou-vinteo/?fbclid=IwAR3crxcYpcqtHW5ThCaHYNbWaf5fRIPb3bE\\_e07MrkboStr8sNFVOfFWuO](https://www.marieclaire.gr/celebrities/news-celebrities/i-olimpionikis-sofia-bekatorou-mila-sto-marie-claire-ke-gia-proti-fora-gia-ti-sexoualiki-parenochlisi-ston-choro-tou-athlismou-vinteo/?fbclid=IwAR3crxcYpcqtHW5ThCaHYNbWaf5fRIPb3bE_e07MrkboStr8sNFVOfFWuO)
- Ward, L.M. & Grower, P. (2020). Media and the Development of Gender Role Stereotypes. *Annual Review of Developmental Psychology* 2, 177–99. <https://doi.org/10.1146/annurev-devpsych-051120-010630>
- Wimmer R.D. & Dominick J.R. (2014). *Έρευνα στα Μ.Μ.Ε.: Εισαγωγή. Γαρδικιώτης Α.* (Επιμ.). Εκδόσεις Πεδίο.

## Commandos, frigates, and other media imaginations: Aspects of media discourse in the 2023 Greek political leaders' debate

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### Abstract

Political communication research on televised political debates has focused primarily on the roles and performances of politicians, subsequent news coverage or party statements (“the debate about the debate”) and public discussions of social media users. Following a different perspective, this study analyses journalistic discourses during the televised debate among Greek political leaders ahead of the 2023 general election. It examines through Critical Discourse Analysis (CDA) whether and how journalistic questions reflect the Polarized Pluralist Model of media systems in an age of increased mediatization. Guided by four research questions, this study: a) investigated whether news values were prioritised over the political agenda, b) analysed journalists’ evaluative comments (adjectives and metaphors), c) examined types of journalistic criticism towards political leaders and d) explored whether follow-up questions were actually predetermined by the journalists. The findings highlighted the dominance of a particular media logic which encompasses ideological orientations, power displays and corporate status in line with the Polarized Pluralist Model.

**Keywords:** media discourse, critical discourse analysis, media systems, televised debates, mediatization, political campaigns.

### Introduction

This research examines the journalistic discourse in the televised debate of Greek political leaders in 2023, ahead of the general elections. In this debate, we consider journalistic discourse to lie at the very core of media discourse, insofar as each of the journalists/anchorpersons works for a private television station. The Polarized Pluralist Model, to which the Greek media system belongs (Hallin & Mancini 2004: 89-96), is characterised by weak commercial practices, while media owners, who are typically among the wealthiest individuals in Greece, seek to promote their own interests through their privileged position in the political debate in an attempt to transfer their power from the economic to the political sphere. As a result, Critical Discourse Analysis is

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employed here, because of its appropriateness for exploring and revealing power relations (Fairclough 1989: 46). With power relations in mind, we attempt to draw a conclusion about the media discourse in the debate: *does it contribute to the political logic of the elections, or does it advance a so-called media logic?*

This research explores four research questions, which reflect our main objectives. The first one asks if news values are prioritised over the political agenda. This study adopts Van Dijk's view (1988: 119) that news values are “values about the newsworthiness of events or discourse, shared by professionals, and indirectly by the public of the news media”. We examine whether journalists' questions reflect well-established news values or are utilised in order to maintain a political agenda. In our view, news values seem more suited to a market-driven media model and to self-referential content that reflects media logic at the expense of the political one. On the other hand, the political agenda, while ostensibly tends to satisfy the interests of political elites in a higher degree, frequently entails hard news and more complicated and hard-to-solve social issues and problems (Dearing & Rogers 2005).

The second research question asks whether journalists use evaluative discourse when they formulate their own questions. To investigate their evaluative discourse, the research focuses on the adjectives and the metaphors used by each journalist and whether these discursive elements tend to signify either positive or negative conditions of social reality.

In a similar way, the research also examines the opinions of the journalists as expressed in the 72 questions. Each question ends with a question mark. Nevertheless, we attempt to investigate the purpose of affirmations in journalistic discourse.

Finally, we seek to investigate the discursive relationship between the initial and the follow-up questions. We assume that a seemingly predetermined supplementary question promotes media logic, while unprompted occasions serve the interests of political logic, insofar as independent journalism is supposed to hold accountable those in power.

## **The Polarized Pluralist model**

The Polarized Pluralist model (also known as the Mediterranean model), introduced by Hallin and Mancini (2004), describes the way that the media system operates in the countries of southern Europe, including Cyprus, France, Greece, Italy, Malta, Portugal, Spain and Turkey. However, this is not a homogeneous group of countries, as their media systems vary (Papathanassopoulos, Giannouli & Archontaki 2023: 134). The term “model” describes a set of common characteristics of these countries' media systems that distinguishes them from countries belonging to other models, such as liberal and democratic corporatist.

In the Mediterranean countries, including Greece, television still dominates the media market. Concurrently, while Greeks tend to be heavy viewers, related surveys have indicated that their trust in television is either minimal or non-existent (Papathanassopoulos, Giannouli & Archontaki 2023: 140). The Greek media system is also characterised, if not determined, by political parallelism (Hallin & Mancini 2004: 98, Papanagnou 2015). Following the deregulation of 1989, the Greek media owners were found to act in parallel and symbiosis (Papathanassopoulos 2007: 193) with the two political powerhouses, New Democracy and PASOK, which have governed Greece since the restoration of democracy in 1974, with a four-year exception of SYRIZA (2015-2019). Political parallelism is defined as “the degree and nature of the links between the media and political parties or the main ideological tendencies of society” (Fernández-Viso & Fernández-Alonso 2024). Consequently, media instrumentalisation is more prevalent in Greece, particularly when issues of conflict are at stake. Given that powerful magnates, whose business groups are active in sectors such as shipping, the oil industry, media and sports, are the proprietors of all Greek private national television channels (Papathanassopoulos et al. 2021: 180-181) one might expect that the journalists representing these TV channels would express congruent opinions in debates or, at the very least, that their questions would reflect a shared media logic.

### **Mediation and mediatisation**

The existing literature on mediatisation tends to conceive it either as a subfield of mediation (Altheide 2016) or as a distinctive, more dynamic concept compared to the latter (Couldry 2008: 376, Hjarvard 2004: 114, Strömbäck 2008: 229). However, mediation and mediatisation do not belong to the same spectrum (Nie, Kee & Ahmad 2014: 365). Mediation has to do with communicating via a medium. It is rather a matter of intervention, which cannot produce any transformation to “politics as a social institution” (Hjarvard 2004: 114), despite being both technological and social (Silverstone, 2002). According to Silverstone (2002: 762), mediation explains “the fundamentally, but unevenly, dialectical process in which institutionalised media of communication are involved in the general circulation of symbols in social life”.

On the other hand, mediatisation denotes “the transformation of many disparate social and cultural processes into forms or formats suitable for media representation” (Couldry 2008: 377). Hjarvard (2004: 115) highlights a significant point of difference that serves to distinguish mediatisation as a transformative concept. The media do not only play a role of their own determination. They also enjoy a great level of institutional independence, which allows them “to provide the means by which other social institutions and actors communicate”. Kepplinger (2002: 973) puts it more simply: mediatisation signifies “the adaptation of politics to the needs of the mass media”. In this essay, mediatisation is of particular interest because it signifies the dominance of media logic across a multitude of social and political institutions.

The best-known definition of media logic is provided by the work of Altheide & Snow (1979: 10). Media logic refers to “a form of communication, the process through which media present and transmit information” and indicates that a variety of political and social institutions tend to adopt media formats as a “framework or a perspective that is used to present as well as interpret phenomena”. Media logic characterises a process where events, action, and actors’ performances follow the media grammar of specific technologies and formats (Altheide 2016). Accordingly, a constructionist approach to communication sees media logic as a key element in the understanding of the construction of social reality.

However, the domain of political communication is subject to the influence of both political and media logic. Here we argue that this is the intersection point between media systems theory and mediatisation. Assuming that the logic variable is a crucial indicator of a media system, we attempt to explore the degree and the aspects of media logic in the journalistic discourse of the debate.

Strömbäck (2008: 234) conceptualises mediatisation as a four-phase process. The first step occurs when the media become the most important source of information in a society. The second one refers to the degree of independence of the media from political institutions. In this phase, the media logic becomes dominant. The third phase concerns the degree to which media content is governed by media logic especially in comparison with political logic. Finally, in the last phase, political actors tend to adopt the media logic and adapt their actions to media technologies and formats.

To discuss what media logic is, Haßler, Maurer and Oschatz (2014) highlight five main aspects of media logic: absence of policy issues, personalisation, negativity, topicality, and absence of ambiguity. These five factors mark the dominance of the media logic over political logic, in political media coverage.

This study employs Critical Discourse Analysis for two principal reasons. First, because CDA seeks to empirically prove what people may already know and dig deeper into it (Fairclough 2015: 106). In this case, our critical stance focuses on how media content intertwines with politics and how the power relations deriving from the political economy of the media refract the political debate. Second, because CDA is indicated when the manipulative character of discourse needs to be revealed, according to the socio-diagnostic critique proposed by Reisigl & Wodak (2015: 25). From this perspective, CDA utilises “social theories and other theoretical model from various disciplines”. In this approach, media theories such as mediatisation and media logic are treated as discursive tools.

## **The 2023 political leaders' debate**

Most research on Greek televised debates has focused primarily on the role and language of the politicians involved (Matsaganis & Weingarten 2000, Samaras & Papathanassopoulos 2011), the polemics surrounding the assessment of political leaders' performance (Vamvakas 2006) and the discussions held by social media users (Bourchas & Gioltzidou 2024). In order to examine the manifestations of mediatisation, this study adopts a distinctive approach, focusing on the journalistic discourse expressed during the debate.

The televised debate between the leaders of the Greek parliamentary parties took place on 10 May 2023, ahead of the general elections on May 21st. It was held at the premises of the Greek public broadcaster (ERT) with the participation of six party leaders, six anchorpersons and ERT's main anchorman who acted as moderator.

Party leaders attending were New Democracy president and Prime Minister, Kyriakos Mitsotakis, SYRIZA-Progressive Alliance president, Alexis Tsipras, PASOK-Movement for Change president Nikos Androulakis, Communist Party of Greece secretary general, Dimitris Koutsoumpas, Greek Solution president Kyriakos Velopoulos, and DiEM 25 secretary general, Yanis Varoufakis. The format was agreed by a cross-party committee chaired by the caretaker Minister of the Interior. Each anchorperson was a “representative” of one of the major national television channels (Alpha, Ant1, Mega, Open, Skai, Star) and the moderator was appointed by the public broadcaster (ERT).

The live programme lasted more than two hours and consisted of 36 pairs of questions. In particular, each journalist took turns to pose a 30 second question to a different political leader each time, with the opportunity to ask a short follow-up question lasting 15 seconds. The questions were divided into six issue areas or “rounds” in journalistic jargon: a) the economy, growth and employment, b) foreign policy and national defence, c) the state, institutions and transparency, d) health, education, and the social state, e) the environment and energy and f) youth. At the end, all political leaders were allowed to make additional comments and brief closing remarks.

The 2023 debate was the first televised Greek general election leaders' debate in eight years. The first televised debate in Greece took place in March 1990 ahead of the June general election that year and a few months after the deregulation of television at the end of 1989 (Papathanassopoulos 2017: 80). It should be noted that the first debate did not take place in a television studio, but in an auditorium of a Greek university (Panteion University). Moreover, it focused exclusively on diplomacy and foreign affairs and was moderated by a former deputy foreign minister and journalist (Yannis Kapsis). The questions to the politicians were posed by the professor and founder of the Institute of International Relations, Dimitri Conostas. This is mentioned to highlight the differences in the degree of mediatisation compared to the 2023 televised debate in terms of venue, format, issues discussed and media participants.



**Table 1:** Journalists and party leaders that participated in the 2023 Greek political leaders’ televised debate.

<b>Presenter/Host</b>	<b>TV channel</b>		
Giorgos Kouvaras	ERT		
<b>Journalist</b>	<b>TV channel</b>	<b>Political leader</b>	<b>Party</b>
Sia Kosioni	Skai	Kyriakos Mitsotakis	New Democracy
Giorgos Papadakis	Ant1	Alexis Tsipras	SYRIZA- PA
Antonis Sroiter	Alpha	Nikos Androulakis	PASOK-MfC
Panagiotis Stathis	Open	Dimitris Koutsoumpas	Communist Party
Rania Tzima	Mega	Kyriakos Velopoulos	Greek Solution
Mara Zacharea	Star	Yanis Varoufakis	DiEM 25

### Research questions and operationalisation

Critical Discourse Analysis refers to a school of discourse analysis that strives for revealing power relations constituting a discourse (Fairclough 1995). This study attempts to negotiate the power of media logic and to investigate discursive elements in order to demystify its eventual dominance over political logic. It is therefore particularly important to highlight aspects of journalistic discourse that imply that the 2023 political leaders’ debate tends to reproduce the media logic—something that is almost expected, given that the Greek media system is at the core of the Mediterranean model—, even though it concerns national elections. CDA is implemented here in two steps. The first step concerns the formulation of the research questions. This is followed by the selection of discursive elements to be examined. Each research question to be answered requires a set of secondary questions related to the discursive elements which will be scrutinised during the reading of the text. Each research question aims to expose the kind and characteristics of logic that become dominant in the journalistic discourse.

*RQ1: Do journalists tend to prioritise news values over the political agenda?*

In this case, our research explored two concepts whose relationship is dialectical. It focused on how news values are entextualised in the journalistic discourse, while a political discussion takes place. To answer RQ1, the analysis of two discursive elements was employed. The first one is a matter of agenda-setting theory. Despite the fact that the questions were on predefined issue areas, CDA permitted us to search for the thematic core of each question. Doxiadis (2011) calls this discursive-analytical process strategic integration, while Gee (2011: 61) prefers the term integration tool. The second discursive element is the logic of the question. Here, questions were analysed by focusing on the logic they represent. When the subjects' reasoning is disrupted by breaking down its components, the logic of the query emerges. Therefore, by assuming that each

question was based on a reasoning, we expected that the media or political logic would be reflected in these reasoning components.

*RQ2: Do journalists use evaluations when asking their questions?*

According to Pleios (2001), there are three prominent types of media discourse. Pragmatic discourse describes facts (news reports), evaluative discourse expresses a specific meaning, or a point of view (comments and opinions) and propagandistic discourse is a mixture of the other two. Since the end of the twentieth century, evaluative discourse has tended to displace pragmatic discourse in the news (Kovach & Rosenstiel 2001). This tendency is expected to be more commonly found in the Polarized Pluralist model, where the media tend to be less independent from other power institutions such as religious, financial and political organisations inter alia (Hallin & Mancini 2004: 109). Drawing on these critical aspects of journalism, in order to answer the RQ2 we collect and analyse, firstly, the adjectives and adverbs used by the journalists in formulating their question and, secondly, the metaphors and similes, which are of great discursive importance in revealing how the journalists crystallise their myths in order to construct reality. These discursive elements combine evaluations with myths and pragmatic discourses with evaluative ones. And the comments seem to have been embodied in the news. In the same vein, evaluations are also crucial in tracing the relationship between knowledge and power (Van Dijk 2014: 209).

*RQ3: To what extent do journalists' questions contain opinions?*

Following Pleios' categorisation (2001), expressing an opinion belongs to evaluative discourse, as well. As a result, when a journalist expresses it, he/she is showing us his/her own position on an issue. However, a political leaders' debate is supposed to give voters the chance to compare the leaders' positions on specific issues (Benoit et al. 2001: 259). Insofar as this happens, when a journalist expresses an opinion through a question, the balance between pragmatic and evaluative discourse is disturbed. On the other hand, freedom of speech and freedom of the press are fundamental liberties in democracies. A politically functioning public sphere must allow journalists to feel free to ask the questions they want in order to criticise those in power. Our research examines every affirmation contained in the journalists' questions. Questions are followed by a question mark. If a question has a full stop, we assume that it is not that much of a question. Furthermore, when an affirmation is recorded, the subject usually shows us a specific point of view. This facilitates our attempt to unmask the media logic, because it allows us to clearly understand the extent to which these opinions are mediatised and whether they represent the social and political agenda or they reflect the media logic.

*RQ4: Were the follow-up questions predetermined or were they used to reflect on the political leaders' answers to the initial questions?*

This research question is posed on the assumption that predetermined questions represent the media logic, as they are based on schemas and interests that characterise mediated journalistic roles. On the other hand, a follow-up question aimed at reflecting on a leader's initial answer, is more in line with a basic journalistic task: to criticise those in power by asking questions that are difficult to answer. Drawing on the literature on follow-up questions in political interviews we view these supplementary questions as an important journalistic tool for holding politicians accountable (Romaniuk 2013). We argue that this purpose is served when journalists make use of follow-up questions in order to “pursue what appear to be evasive or insufficient answers” (Eriksson 2011: 3332). A necessary condition for this is that the follow-up question actually arises as a reaction to the politician's answer to the initial question. In this case, we claim that the journalist of the televised debate assumes the role of the “political journalist” and acts “as a representative of the institution of political journalism” (De Smedt & Vandenberghe 2011: 86), which is indicative of political logic. On the contrary, when follow-up questions appear to be predetermined, we believe that journalists assume the role of the representatives of their television channel, which is indicative of media logic. In the context of deliberation and political dialogue, we think that the journalists must respond to the initial answers of the politicians in order to criticise them or to put further pressure on them when they do not explicitly answer a question. Thus, the political logic of follow-up questions seems to be more relevant in a debate, especially if we want it to be considered as an essentially political and not a preplanned media event (Dayan & Katz 1994).

### **News values and political agenda**

Our research uses news values as an indicator of how the political agenda is adapted to the media logic. A total of 32 out of 36 pairs of questions were found to focus either on political communication (political programmes costing, references to social media etc.) or on turning a blind eye to the political core of an issue by presenting it as a matter of conflict (NATO vs. Russia, Androulakis or Tsipras vs. Mitsotakis etc.). In fact, the four pairs that were found to be more interested in the political substance of the issues they referred to were presented by women journalists (however, three out of four concerned the foreign policy and national defence section). Conflict frames were dominant, while the journalists tended to emphasise issues of low political importance (parallel currencies proposed by smaller parties, personal way of life etc.). As a result, the media logic was profound in the journalistic discourse.

The journalistic discourse tended to be oriented towards either news values or partisan communication. Regarding news values, two excerpts were found to be indicative. Sia Kosioni (Skai) said at the end of a question to the Prime Minister, Kyriakos Mitsotakis: “...unless you have some news to tell us”. Likewise, Panagiotis Stathis (Open), in his question on foreign affairs,

presented a scenario according to which “there is a strong possibility that Turkey will react, and that two frigates will appear there”. In the first case, the Prime Minister seems to be used as a journalistic source or a content creator, whose words signal news items and not political decisions (the relevant news value here is Novelty). In the second, the journalist attempts to involve the Secretary General of the Greek Communist Party, Dimitris Koutsoumpas, in a war-conflict scenario (the relevant news value here is Negativity, which includes conflict).

At the same time, issues pertaining to partisan communication also constituted a central topic within the journalistic discourse with a tendency to focus on negativity and conflict. More specifically, two questions were aimed at reproducing the public dispute between the ruling party (New Democracy) and the Official Opposition (SYRIZA). Each of them tended to criticise its recipient. The leader of the Official Opposition, Alexis Tsipras, was accused of showing indifference to the fact that the ruling party “would focus on the cost” of his party’s manifesto. On the other hand, the Prime Minister, Kyriakos Mitsotakis, was accused of portraying his “costly” policy of benefits as “relief and support for the citizens”, while he criticised the Official Opposition, for “announcing in its manifesto that benefits in public health and education will be increased” and he foretold recourse to “memorandum (bailout programmes) and bankruptcy”, should they return to government. Also of significant importance were some questions on parallel currencies that were directed at the leaders of smaller parties, such as Greek Solution (Kyriakos Velopoulos) and DiEM 25 (Yanis Varoufakis) in a manner reminiscent of sensationalist tabloid journalism.

### **Evaluative adjectives and media discourse**

As far as evaluative discourse is concerned, 33 out of 36 pairs of questions contained evaluative elements, such as adjectives (“*major armament programme*”, “*clear answer*” etc.), similes (“*Boris Johnson- Sebastian Kurz- Richard Nixon- Willy Brandt*”, “*like telling the kids not to read*”) and metaphors (“*fiscal gap*”, “*public services turning a blind eye*” etc.). In a similar vein our findings revealed that the vast majority of these elements tended to reproduce negative valuations (28 out of 33 pairs). With regard to the cases that did not contain any evaluations, it should be noted that all of them (3 pairs of questions) were uttered by female journalists. Moreover, more than six evaluative elements were found in 28 pairs of questions. We therefore believe that journalists, whenever the time limit didn’t prevent them from doing so, tended to displace pragmatic discourse- in terms of facticity- in favour of an evaluative one<sup>1</sup>. Their evaluations are strengthened even more due to the importance of the debate.

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<sup>1</sup> On numerous occasions the evaluative language did not reflect factual reasoning but rather personal preference or sensationalism. For example Panagiotis Stathis urged the leader of PASOK to take part in a coalition government in order to “resolve” (sic) the issue of a possible by-election. Likewise, in a follow-up question Rania Tzima said to the leader of Greek Solution: “so I maintain

Six excerpts have been selected to support our argument. All of them contained an evaluation that was explicitly manifested in the journalistic discourse. Sia Kosioni (Skai) said to the Prime Minister, Kyriakos Mitsotakis, that food prices “...are still going up”, which was true, but expressed metaphorically for the sake of sensation. Similarly, she stressed that Official Opposition (whose leader is Alexis Tsipras) didn’t support “important elements”<sup>1</sup> of the government’s “large armament programme”<sup>2</sup>, as if approval of highly expensive weapon systems was statutory for all Greek political parties regardless of their ideology or politics. Antonis Sroiter (Alpha) criticised the leader of the Official Opposition, Alexis Tsipras, by asking him “how difficult would it be to produce a really detailed cost breakdown of policies, measure-by-measure, and then present it to us?”, a question that also reflects a political communication issue. Giorgos Papadakis (Ant1) argued that the president of Greek Solution, Kyriakos Velopoulos, is pro-Russian and that his “preference has been expressed in various ways after the recent invasion to Ukraine”<sup>3</sup>. In this instance, the journalist evaluated Velopoulos’ stance by categorising him as pro-Russian, thereby focusing on a particular aspect of his political positions. The same political leader heard Sia Kosioni (Skai) claim that the energy costs in “Greece as is the case in other European countries” are “skyrocketing as a result of Western embargoes on Russia”. Finally, a follow-up question by Rania Tzima (Mega) to the president of PASOK-MfC, Nikos Androulakis, began by insisting that “I didn’t get a clear answer, at least not the way I understood it”. The discourse analysis showed that the journalists tended to conceal various comments in their questions. These comments were manifested either by including their own statements in their questions, or by taking for granted evaluations that are common in public discourse, especially in media discourse. Yet, they are still far from being considered as axioms or unquestioned facts. All journalists tended to challenge political leaders by constructing questions based on their own beliefs and opinions which are strongly linked to the Greek media discourse. A large part of their statements reproduces this media discourse and logic, while it includes simplified and simplistic causal attributions for complicated social phenomena, such as linking Russian invasion with inflation, huge armament programmes with peace and personal indifference with an electoral manifesto that is not costed. Of course, the sheer structure of the televised debates, with the obvious need for short and punchy questions and

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that you do propose dual currency” which was an oversimplified evaluation of his argument in favor of a “Plan B” for Greek economy.

<sup>1</sup> Note the journalistic decision to use an adjective with a positive connotation «important (elements)» rather than a neutral one «e.g. contentious, debated (elements)» or even a negative one «e.g. problematic (elements)».

<sup>2</sup> In this case the journalist chooses to use the euphemistic metaphor «large (armament programmes)» instead of an adjective that might more accurately describe the essence of the debate: «costly, expensive etc. (armament programmes)».

<sup>3</sup> It is noteworthy that the journalist frames these complex issues of foreign policy (political logic) in Manichean terms of Pro-Russian vs Pro-Ukrainian Greek party leaders (media logic).

answers, significantly affects those choices. Thus, the structure of televised debates promotes sound-bite journalism (Rinke 2016) which is governed by media logic.

### **Journalistic opinions**

Despite the time limit, the journalists uttered at least one affirmation in each pair of questions. An affirmation is the opposite of a question, so we assume that affirmations connote the journalists' intention to be both critical and evaluative. The main conclusion regarding the third research question confirms that evaluative discourse tends to displace pragmatic discourse. The role of journalists seems to be expanded through the use of affirmations. This means that they manipulate their questions in order to express their own opinions. Nevertheless, these opinions don't seem inevitable, while they don't bring anything new in the discussion; affirmations are wasted in secondary issues and simplistic rationales that reproduce superficial perceptions that distract from focusing on the core of the contemporary social problems. Journalists seem to be very dependent on media logic. They repeat oversimplified points of view even when they are not supposed to do so.

More specifically, our findings are inferred by a series of journalistic affirmations. Antonis Sroiter (Alpha) accuses the leader of SYRIZA-PA, Alexis Tsipras, of repeating exactly the same promises in his election manifesto, eight years after: "But if you read the 2015 manifesto, eight years later we are saying the same things". This clearly exaggerated claim is largely based on journalistic "cherry picking" and not on an actual 'vis-à-vis' comparison of policy proposals between the 2015 and 2023 manifestos. In our view, it reveals a tendency to reproduce a common propagandistic argument, taken from the field of political communication, that "Party X (i.e. our opponents) is never going to change". It goes without saying that such questions are usually addressed to all political leaders since they are not dictated by party affiliation but by media logic.

Similarly, Sia Kosioni (SKAI) expressed her personal view that there are very few policy alternatives for halting increasing commodity prices in Greece. And she presents this opinion as an undisputable fact. "You (previously) indicated that you would be reviewing VAT (policy) within the next two years. However, budgetary constraints are tight, and I imagine that (market) control mechanisms will remain the same. So what? Do you tell people that they should be patient?" she said in a follow-up question directed to prime minister Kyriakos Mitsotakis.

Panagiotis Stathis (Open), while questioning the leader of PASOK-MfC, Nikos Androulakis, claimed that PASOK, a party that governed Greece from 1981 to 1989, from 1993 to 2004 and from 2009 to 2012 (and it was also a part of the 2012-2015 coalition government), "has always been a stabilising force". This is not a criticism, of course, but a highly subjective position that may seem laudatory at first glance, but in fact attempts to promote the journalists' argument. That is: "PASOK has always been a stabilising force, so it should help at all costs to form a coalition government in order to avoid by-elections" (which are synonymous with instability according to

the journalist). As for the subjective view of PASOK as a stabilising force, it should be noted that the last time PASOK either had won the national elections, or had taken part in the government, Greece almost went bankrupt (Skaperdas 2015). Furthermore, Mara Zacharea (Star) told the president of PASOK-MfC that “perhaps the opinions are right in theory” (affirmation) and she then asked him whether “in practice, the attitudes of the past have not disappeared?”. In this case, the journalist asks for the interviewee’s opinions, but at the same time she manifests her own positions. She expresses both an opinion in the form of an affirmation and a criticism in the form of a question.

The questions addressed to the Secretary General of DiEM 25, Yanis Varoufakis, also produced some vigorous excerpts. On the one hand, Rania Tzima (Mega) asked him to respond to her hypothetical and fictitious scenario: “Excuse me, maybe it's my problem, but I didn't understand what you were doing at the moment when the Turkish commandos are on the Greek island. I heard a theory about how we won't get there and a general outline”. The journalist created a scenario, and accused the interviewee of not answering exactly what he would do if this war-conflict scenario came true. On the other hand, Antonis Sroiter (Alpha) used an affirmation in order to assert that the DiEM 25 general secretary had the highest energy footprint among the political leaders. The journalist placed particular emphasis to this episodic affirmation in order to arbitrarily<sup>1</sup> argue that the general secretary is not so environmentally friendly and to insinuate that he had too many vehicles in his possession.

### **Connections between initial and follow-up questions**

Our analysis found that the majority of the follow-up questions were pre-designed. In particular, 26 out of the 36 follow-up questions were either irrelevant to the produced answers that followed the initial question or topically unrelated. In other words they were “pseudo follow-ups”. In many cases the journalists even explicitly said that they didn’t want to ask a follow-up question and used their turn to ask something else. Panagiotis Stathis (Open) said to the leader of SYRIZA-PA, Alexis Tsipras: “But I go on to another question...”. In fact, his initial question was about the system of admissions to higher education and his “follow-up” about the political leader of the past whom the leader considered a “reference point”. It should be noted here that this question referred to the heated, if politically superficial, debate of the election campaign, as to whether Tsipras was attempting to emulate Greece’s first socialist prime minister and founder of PASOK, Andreas Papandreou.

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<sup>1</sup> This particular assessment was miscalculated because it was based exclusively on ownership of private vehicles (not frequency of car use) and without any consideration of other properties, modes of living, or more significantly the frequency of long-haul air flights.

An intermediate category with regard to the initial question/answer/follow-up question sequence includes five cases where the journalist responded to the politician's answer but with a view to pose a question that sounded premeditated. We consider these five cases as a hybrid of media and political logic because they tried to hold politicians accountable but at the same time, they served the media logic of self-presentation and TV channel representation. For example, Sia Kosioni (Skai) asked the leader of the Greek Solution, Kyriakos Velopoulos, about Western sanctions against Russia and then reacted to his answer on Greece's exploration of natural gas in the Aegean but without really delving into her original question. "If you believe that our country should be independent, as you rightly say, why have you not supported any renewable energy bills?", she asked without any effort to pursue an answer to her initial question.

Some journalists took on the role of the political reporter and asked a total of five questions that could be described as real follow-ups criticising evasive or insufficient answers. "I didn't get a clear answer, at least as I understand it. If you participate in a (coalition) government the next day, will you ask for the Public Power Corporation to remain as it is today or change it?", Rania Tzima (Mega) asked the President of PASOK-MfC, Nikos Androulakis, when she felt that he had not given her a clear-cut answer on the proposed nationalisation of Greece's largest electricity company. However, as it was described earlier in this text, this question also reflects the media logic by supporting a worst-case scenario built by the journalist.

## **Discussion and conclusion**

This article has examined the power of media logic through the use of CDA which facilitated an understanding of media discourse as a top-down process, directed from news organisations to the public at large. According to Reisigl & Wodak (2015: 24), "critique refers to the examination, assessment and evaluation, from a normative perspective, of persons, objects, actions, social institutions and so forth". It would have been a truism to say that media logic prevail over political logic in a contemporary televised debate. There is not just one "media logic" and the mediatisation of politics can vary considerably (Strömbäck 2008: 234, Strömbäck and Esser 2014: 7). In such a context, the implementation of CDA enabled the emergence of a critique that situates mediatisation and the prevalence of a specific form of media logic in the Polarized Pluralist Model.

Of particular importance is the observation that this specific media logic was dominant in all research questions. Even if we accept the view that a political debate is more than a media event and aims to inform the electorate about policy platforms, while at the same time cultivating a fertile ground for rhetoric competition among the candidates, it still has a mediatizing function. The



debate is almost a demonstration of the power of media over politics<sup>1</sup>. Our findings demonstrate that the major media companies represented in the televised debate were able to impose their own context, preferences, ways of thinking about politics as well as practices for constructing the political spectacle. And journalists seemed to serve this media logic not so much as a result of straightforward commercial considerations, but mainly as a means of maintaining and increasing their “corporate status” in the context of the so-called Mediterranean model.

To illustrate, our analysis regarding the *RQ1: Do journalists tend to prioritise news values over the political agenda?* divulged that the political substance of the issues discussed in the debate was largely obscured as journalists tended to focus more on aspects of political, if not partisan, communication and horse-race coverage rather than on political positions and policies. We claim that there are two reasons for this. First, news values demand an issue to be simplified to be in tune with the audience. Therefore, the debate has become yet another product-to-be-consumed. It appears to have been constructed in accordance with the (perceived) demands of media consumers rather than the principles of a politically functional public sphere. Second, partisan communication is omnipresent during the debate, either in the politicians’ answers or in the journalist questions which were found to be highly reflective of partisan agendas. Partisan communication seems to prevail, and it is ultimately represented in the debate via political parallelism, as well as media instrumentalisation (Hallin & Mancini 2004, Papathanassopoulos et al. 2021) indicating the Polarized Pluralist Model.

With regard to *RQ2: Do journalists use evaluations when asking their questions*, negative evaluations were found to be a common place in the journalistic discourse. However, they were restricted to a simplistic and superficial criticism which is related to the popular form that the media logic usually takes. Indeed, in some cases journalistic discourse seemed to transcend the boundaries of pop culture and tap into populism. As a result, negative evaluations focused on platitudes and reasonable, but not deep and critical, thinking. It is evident that this is not a consequence of unprofessionalism, but rather of a “limited professionalism” (Papathanassopoulos 2007:196) that serves media logic in the Polarized Pluralist Model<sup>2</sup>.

Furthermore, *RQ3: To what extent do journalists’ questions contain opinions?*, builds on the findings of *RQ2*. The anchorpersons were used to integrating affirmations in their questions. These affirmations tended to reproduce simplistic criticisms that were either the result of “common sense” approaches or a reproduction of the dominant ideology. By employing these affirmations, the journalists attempted to present their positions as indisputable and axiomatic.

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<sup>1</sup> Of course this doesn’t imply that we are opposed to any debate or discussion of political programmes in public. Yet, this research advocates that there are significant restrictions to the political function of the debate in its current style and format. Most of them stem from the media logic and its dominance.

A combination of the answers given to *RQ2* and *RQ3* impels us to think that, while journalists exercise their right to criticise those in power, they construct or maintain a reality, that does not address the deeper causes of socio-political problems. In contrast, it is based on a media logic that highlights the interests of both media organisations and partisan communication. It is also noteworthy that several of these positions appeared to be aligned with neo-liberal, nationalist, and militarist ideologies. To illustrate, one may consider the question about “budgetary constraints” or the question with the hypothetical scenario involving Turkish commandos or another supporting a “large armament programme”.

Another finding showed the tendency of journalists to use predetermined questions as a substitute for genuine follow-up questions (*RQ4: Were the follow-up questions predetermined or were they used to reflect on the political leaders’ answers to the initial questions?*). This predetermination met the requirements of media logic and prevented journalists from rigorously and directly criticising the politicians who answered their initial questions. It appears that journalists (and their respective media outlets) had their own priorities through which the media logic manifested itself. To sum up, a particular media logic emerged as a crucial feature of televised debates. The journalistic discourse was highly mediated, and the political logic was clouded by media and partisan interests. As a result, journalists even when their discourse was restricted due to time limits, still managed to promote certain point of views, practices, and ways of thinking.

The crux of our research provides a basis for a critical examination of the intertwined functions of journalists and media political economy in the context of political debates. Did journalists represent themselves or their respective media organisations, and to what extent? Our findings recall the debate about objectivity/impartiality and demonstrate that, even if they exist, power relations between employers (media magnates) and employees (anchorpersons and journalists) are omnipresent in journalistic practice, especially in the Polarized Pluralist Model.

As for the political economy of the media within a Polarized Pluralist Model, it appears as a key factor in the conduct of the debate. It could be argued that media discourse represent the dynamics of the media political economy and is appropriately and apparently subject to the corresponding power relations. Media logic in a Polarized Pluralist Model, can be understood as an amalgam of power relations between (i) media magnates and political parties, (ii) media magnates and journalists, and (iii) journalists and partisan communication.

In conclusion, although it is customary for a televised debate to occur prior to a national election, the primary focus is on media concerns rather than on the political substance of the debate itself. It is clear that this is a normative critique which is particularly evident in the context of the Polarized Pluralist Model. While we concur with the view that a televised debate “should not be judged by the standards of the university seminar” (Coleman 2013: 28), we nevertheless believe that the function of media logic should be judged on the political landscape where it is imposed.

In other words, we propose the hypothesis that the supremacy of media logic may be more detrimental in the Mediterranean model, where the news media are highly instrumentalised “by oligarchs, industrialists, parties or the state” (Papathanassopoulos 2007: 196). But now, in an age of increased mediatisation, it appears that the parties and the state are losing ground to media logic. And this may reshape power relations in favour of other entities.

## References

- Altheide, D. L. (2016). *Media logic*. In G. Mazzoleni, ed., *The international encyclopedia of political communication*. Wiley Blackwell.
- Altheide, D. L. & Snow, R. P. (1979). *Media Logic*. Beverly Hills, CA: Sage.
- Benoit, W. L., McKinney, M. S. & Holbert, R. L. (2001). Beyond learning and persona: extending the scope of presidential debate effects, *Communication Monographs*, 68(3): 259-273.
- Bourchas, P. V. & Gioltzidou, G. (2024). Television Debates as a TV Typology: Continuities and Changes in Televised Political Competition. The Case of the 2023 Pre-Election Debates in Greece. *Journalism and Media 2024*, 5(2): 799-813.
- Coleman, S. (2013). Debate on Television: The Spectacle of Deliberation. *Television & New Media*, 14(1): 20-30.
- Couldry, N. (2008). Mediatization or mediation? Alternative understandings of the emergent space of digital storytelling, *New Media & Society*, 10(3): 373–391.
- Dayan, D. & Katz, E. (1994). *Media events*. Cambridge, MA: Harvard University Press.
- De Smedt, E. & Vandenbrande, K. (2011). Political television formats as strategic resources in achieving journalists’ roles. In M. Ekström, & M. Patrona, eds., *Talking politics in broadcast media: Cross-cultural perspectives on political interviewing, journalism and accountability*. Amsterdam: John Benjamins Publishing.
- Dearing, J. W. & Rogers, E. M. (2005). *Agenda-setting*. Thousand Oaks, CA: Sage.
- Doxiadis, K. (2011). *Discourse analysis: A social-philosophical grounding*. London: Common Ground Publishing.
- Eriksson, G. (2011). Follow-up questions in political press conferences. *Journal of Pragmatics*, 43, 3331-3344.
- Fairclough, N. (1989). *Language and power*. New York: Longman.
- Fairclough, N. (1995). *Critical Discourse Analysis: The critical study of language*. New York: Longman.
- Fairclough, N. (2015). *A dialectical-relation approach to critical discourse analysis in social research*. In R. Wodak & M. Meyer, eds., *Methods of critical discourse studies*. London: SAGE.
- Fernández-Viso, A. & Fernández-Alonso, I. (2024). The evolution of government intervention in the Mediterranean media system: Spain, France, and Portugal, *Media & Communication*, 12. DOI: <https://doi.org/10.17645/mac.7738>

- Gee, J. P. (2011). *How to do Discourse Analysis: A toolkit*. Oxon: Routledge.
- Hallin, D. & Mancini, P. (2004). *Comparing media systems: Three models of media and politics*. Cambridge: Cambridge University Press.
- Haßler, J., Maurer, M. & Oschatz, C. (2014). Media logic and political logic online and offline: The case of climate change communication, *Journalism Practice*, 8(3): 326-341.
- Hjarvard, S. (2004). The Mediatization of society: A theory of the media as agents of social and cultural change, *Nordicom Review*, 29: 105-134.
- Kepplinger, H. M. (2002). Mediatization of politics: Theory and data, *Journal of Communication*, 52(4): 972-986.
- Kovach, B. & Rosenstiel, T. (2001). *The elements of journalism: What newspeople should know and the public should expect*. New York: Crown.
- Matsaganis, M. & Weingarten, C. (2001). The 2000 U.S. presidential debate versus the 2000 Greek prime minister debate, *American Behavioral Scientist*, 44(12): 2398–2409.
- Nie, K. S., Kee, C. P. & Ahmad, A. L. (2014). Mediatization: A grand concept or contemporary approach?, *Procedia - Social and Behavioral Sciences*, 155: 362-367.
- Papanagnou, V. (2015, 22 May). ‘What is wrong with the Greek media?’. London School of Economics. <https://blogs.lse.ac.uk/medialse/2015/05/22/what-is-wrong-with-the-greek-media/> [accessed 21 April 2024].
- Papathanassopoulos, S. (2007). *The Mediterranean or polarized pluralist model countries*. In G. Terzis, ed., *European media governance: National and regional dimensions*. Bristol: Intellect Book.
- Papathanassopoulos, S. (2017). *Greece: A continuous interplay between media and politicians in media*. In P. Bajomi-Lázár, ed., *Third-Wave democracies: Southern and Central/Eastern Europe in a comparative perspective*. Budapest: L'Harmattan.
- Papathanassopoulos, S., Giannouli, I. & Archontaki, I. (2023). *The media in Southern Europe: Continuities, changes and challenges*. In S. Papathanassopoulos & A. Miconi, eds., *The media systems in Europe: Continuities and discontinuities*. Cham: Springer.
- Papathanassopoulos, S., Karadimitriou, A., Kostopoulos, C., & Archontaki, I. (2021). *Greece: Media concentration and independent journalism between austerity and digital disruption*. In J. Trappel & T. Tomaz, eds., *The media for democracy monitor 2021: How leading news media survive digital transformation (vol. 2)*. Gothenburg: Nordicom, University of Gothenburg.
- Pleios, G. (2001). *The discourse of image: Ideology and politics*. Athens: Papazissis.
- Reisigl, M. & Wodak, R. (2015). *The Discourse-Historical Approach (DHA)*. In R. Wodak & M. Meyer, eds., *Methods of critical discourse studies*. London: SAGE.
- Rinke, E. M. (2016). The impact of sound-bite journalism on public argument, *Journal of Communication*, 66(4): 625–645.
- Romaniuk, T. (2013). Pursuing Answers to Questions in Broadcast Journalism, *Research on Language & Social Interaction*, 46(2): 144-164.

- Samaras, A.N. & Papathanassopoulos, S. (2011). *Negativity and Attacks in Party Leader Debates in Greece*. In Papathanassopoulos, S., ed., *Communication and Society in the 21st Century*. Athens: Kastaniotis. (In Greek).
- Silverstone, R. (2002). Complicity and collusion in the mediation of everyday life, *New Literary History*, 33(4): 761–780.
- Skaperdas, S. (2015). Myths and self-deceptions about the Greek debt crisis, *Revue d'économie politique*, 125: 755-785.
- Strömbäck, J. (2008). Four phases of mediatization: An analysis of the mediatization of politics, *The International Journal of Press/Politics*, 13(3): 228-246.
- Strömbäck, J. & Esser, F. (2014). *Mediatization of Politics*. In Esser, F. & Strömbäck, J. (eds.) *Mediatization of Politics: Understanding the Transformation of Western Democracies*. Houndmills: Palgrave Macmillan.
- Vamvakas, V. (2006). *Elections and Communication in the post-dictatorship period: Politicality and Spectacle*. Athens: Savalas. (In Greek).
- Van Dijk, T. A. (1988). *News as discourse*. Hillsdale: Lawrence Erlbaum.
- Van Dijk, T. A. (2014). *Discourse and knowledge: A sociocognitive approach*. Cambridge: Cambridge University Press.



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