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# **The sociological approach to the digital divide in Greek tourism and social choice theory:**

## **The case studies of Rhodes and Volos**

**Achilleas - Michael Kanellis<sup>\*</sup>, Eirini Papadaki<sup>†</sup>, Margarita Kefalaki<sup>‡</sup>**

### **Abstract**

A destination image is shaped to a great extent through the synthesis of the information promoted by mass and digital media about the specific destination, regardless of the origin of these messages. The present study highlights the significance of business accounts in social media, particularly in the context of destinations' digital communication strategy, albeit in a quasi-localized manner. This is because the posts of every account, regardless of the number of followers, add to the destination's image puzzle. The final outcome, being digital and dynamic in nature, transcends local boundaries and adds to the destination's marketing strategy. Nonetheless, the choppy selection model, which dominates destinations with varying digital capabilities, may result in inconsistent digital communication messages, posing a challenge to prospective tourists. The presence of the digital divide in the tourism sector in Greece is examined in this paper, through the case studies of Rhodes and Volos. The aim is to identify inequalities in access and the use of digital content and technologies in the country, between different geographical areas and tourism destinations. The main methodological tools used for data collection and analysis are the transcribing and content analysis of 861 posts on Instagram from businesses in these two areas. This paper contributes to tourism management studies by highlighting the need to develop integrated digital strategies, focusing not only on the promotion of specific destinations by official government bodies, but also on taking into account the destinations' tourism stakeholders' messages and the general digital environment at a national level.

**JEL classifications:** M20, M21, M38

**Keywords:** Digital divide, digital inequalities, digital communication strategy, social choice, noisy choice

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## 1. Introduction

This paper tests hypotheses supporting a theory linking the competitiveness of tourism destinations to the digital divide. Local businesses in the tourism sector are nowadays firstly evaluated for the quality of their services through their social media accounts, without even visiting them. In order to attract significant digital activity with tourists, businesses in low digital activity destinations must enhance their page content diversity, ease of navigation, and marketing factors (Maurer2015). It is likely that high-tech tourists originate from countries with high digital connectivity, concentrated in the Europe region. In Europe, disparities in the pace of digital advancement and regional digital inequities persist across various destinations, presenting a significant challenge within the digital realm (Minghetti & Buhalis, 2010). Our hypothesis suggests that the coexistence of divergent pace models within a nation acclaimed as a premier destination may engender discord, potentially shifting focus from regional vocational preferences towards broader national selection criteria. Even within the same country, such as Greece, an island regional system may possess superior digital literacy in terms of tourism and communication utilization, compared to a mainland region. Tourism is an important source of wealth at both global and local levels. Many citizens and organizations in developed and developing countries can benefit from an appropriate diffusion of information and communication technologies (ICTs) in this sector (Herdin & Egger 2018; Reverte & Luque, 2021).

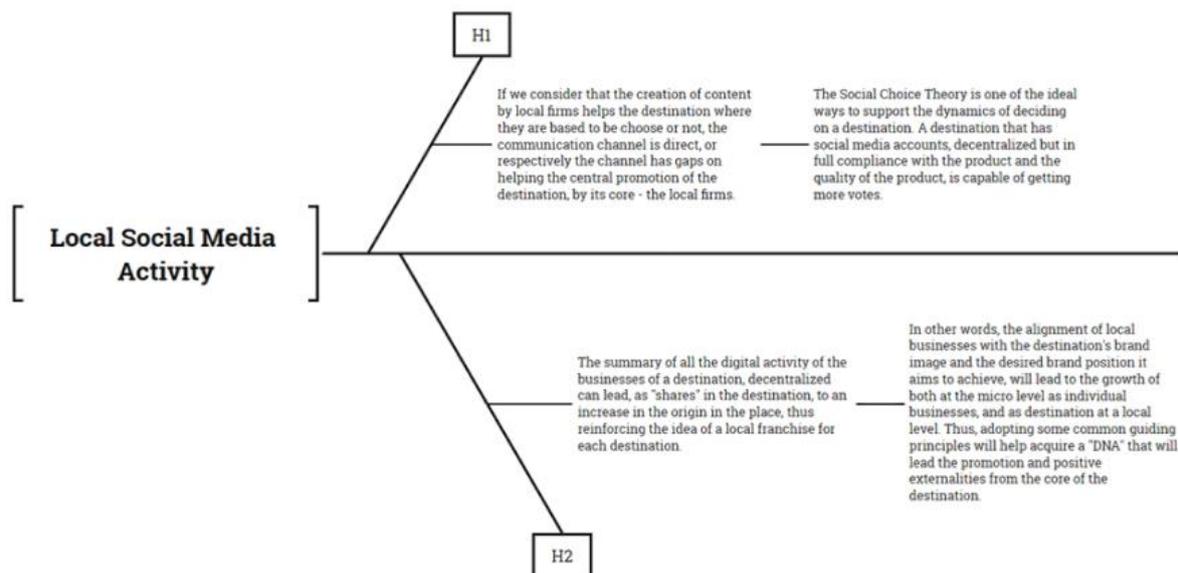
This paper discusses the digital divide and positions an integrated theoretical framework for social choice theory from Arrow (1963)<sup>1</sup>. That approach, going through the exploration from the potential of the local or regional social media pages can operate at in individual level, but indirectly manage to operate as a franchise organization for the local brand, in the eyes of future visitors. Research is faced with a significant limitation due to a lack of literature within the field. Despite concerted efforts to scrutinize the existing scholarship, the absence of empirical studies, theoretical frameworks, and methodological approaches poses a challenge to the advancement of a comprehensive comprehension of the phenomenon under investigation, not only within the sociology of technology in digital humanities but also in digital and cloud economy. This limitation emphasizes the importance of caution when interpreting findings and emphasizes the importance of further research endeavors aimed at filling this significant gap in the literature. Despite acknowledging this constraint, the study attempts to address it by adopting rigorous methodology and by proposing avenues for future research to expand upon the existing knowledge base. The relevant factors that result in disparate pace and

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<sup>1</sup>Arrow's theorem elucidates a paradox within social choice theory, positing that in scenarios where voters are presented with multiple distinct alternatives, no ranked voting electoral system can seamlessly translate the individual ranked preferences into a comprehensive community-wide ranking while adhering to a predetermined set of criteria. This seminal theorem, articulated by Arrow in 1950, underscores the inherent complexities and limitations entailed in devising a universally satisfactory mechanism for aggregating societal preferences (Arrow, 1950).

utilization of ICTs for tourists and destinations are incorporated through sociotechnical aspects such as education, stakeholders, actor-networking, resource allocation and other related factors. Different approaches to the digital divide demonstrate how these factors affect the capacity of the potential of markets and destinations through the interaction activity in a global tourism environment. Tourists need information about destinations for travel decision making, which the mainland province is sometimes unable to provide, and thus does not make it accessible to both the digital world and the conventional world, losing valuable revenue with this way. However, there are still disparities in access, skills, use and attitudes towards ICTs (Maurer & Lutz, 2011).

**Figure 1: Hypothesis of the research**



Although, the phenomenon of the digital divide has been addressed in several studies, especially with regard to small and medium sized tourism enterprises, research on the adoption and implementation of ICTs in cultural and heritage tourism is still limited. This paper aims to raise awareness for the destination digital competitiveness, communication noises at the digital world, communication gaps, distribution of information and the influence and effect of the digital divide on the tourism industry in general and cultural and tourism institutions in particular for different territorial areas (Herdin & Egger 2018). Finally, the paper explores new research avenues concerning the digital divide, particularly focusing on the intricate interplay between digital technology, tourism dynamics, regional disparities, and the sociology of technology with regard to social norms. This distinctive linkage signifies a pioneering advancement within the research domain, defining previously unexplored intersections. Our research attempts to clarify this multifaceted relationship through a methodologically pilot approach, employing a comparative analysis between two destinations with distinct profiles within the same country. By examining Rhodes and Volos, our study not only proposes a new novel research framework but also provides a pragmatic lens through which to comprehend the intricate nuances of the digital divide in the context of Greek tourism, encompassing

both sides, from those who promote local tourism individually, to those who search for specific tourism destinations. This approach emphasizes and provides valuable insights into the sociotechnical-economic dynamics that are at play within the digital landscape of tourism, in the era of globalization, where the field of tourism is encountering increasing challenges. These conclusions underscore the need for targeted interventions and policies aimed at bridging the digital divide in digital skills at the rural areas, within destination promotion from individual to regional level marketing, to differentiate themselves from other destinations, with the considerations for the unique challenges and opportunities faced by rural communities (Maurer & Lutz, 2011; Sifiso, 2014). The second part of the paper will explore the digital divide in Greece, with a general framework. The third part will connect the digital place branding, social media and the invisible competition and address the social choice theory linked with destination selection. The fourth and fifth parts will discuss the methodology and the limitations of the study respectively, before the analysis of the results and the conclusions.

## **2. Literature review**

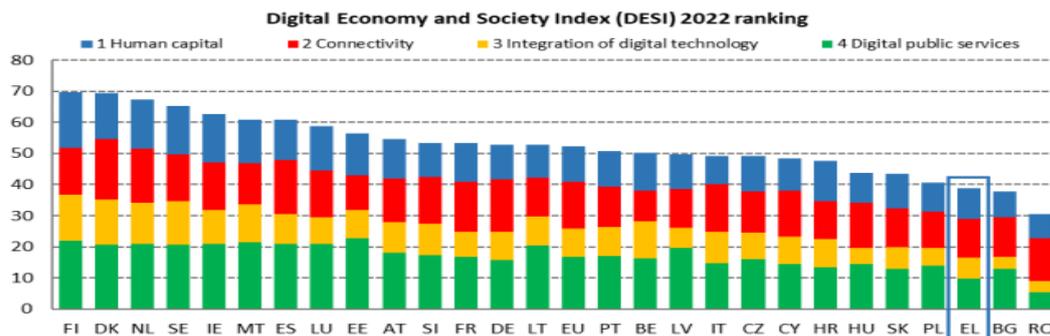
### **2.1 The digital divide in Greece**

The digital divide refers to the disparate distribution of access to information and communication technology among diverse groups of individuals, based on factors such as income, geography, age, gender, education and ethnicity. Nonetheless, it can also be found in businesses depending on their size, type or staff. The term denotes the disparity between individuals who have access to technology and those who have not, along with the ensuing disparities in opportunities, resources and benefits. The digital divide pertains to both consumers and employees within a business. This is why, it can manifest in a number of ways, including the access divide, which refers to the lack of physical access to technology, particularly in rural and remote areas or in low-income neighborhoods. The digital usage divide also pertains to the incapability or reluctance to effectively utilize technology effectively due to a deficiency of skills, knowledge or confidence, cultural and language barriers or technophobia. Furthermore, two additional categories, namely the quality gap and the content segregation gap, are derived from these two categories (Vlachopoulou, 2019; Kamberidou, 2020; INSETE, 2022). It is important to provide perspective from the Greek competence and examine how much digital transformation is implemented in Greece, as well as its social implications. The data we used are mainly from Eurostat and indicate that Greece has made progress in developing digital skills in the tourism sector, but there is still room for improvement.

In order to better understand the research presented in this paper, it would be helpful to begin by examining how Greek people interact with the digital world. According to Eurostat (2023) and the DESI (The Digital Economy and Society Index), Greece was 27th out of the 28 countries in the European Union up to 2020 from the beginning of the index. Depending on the degree of its score,

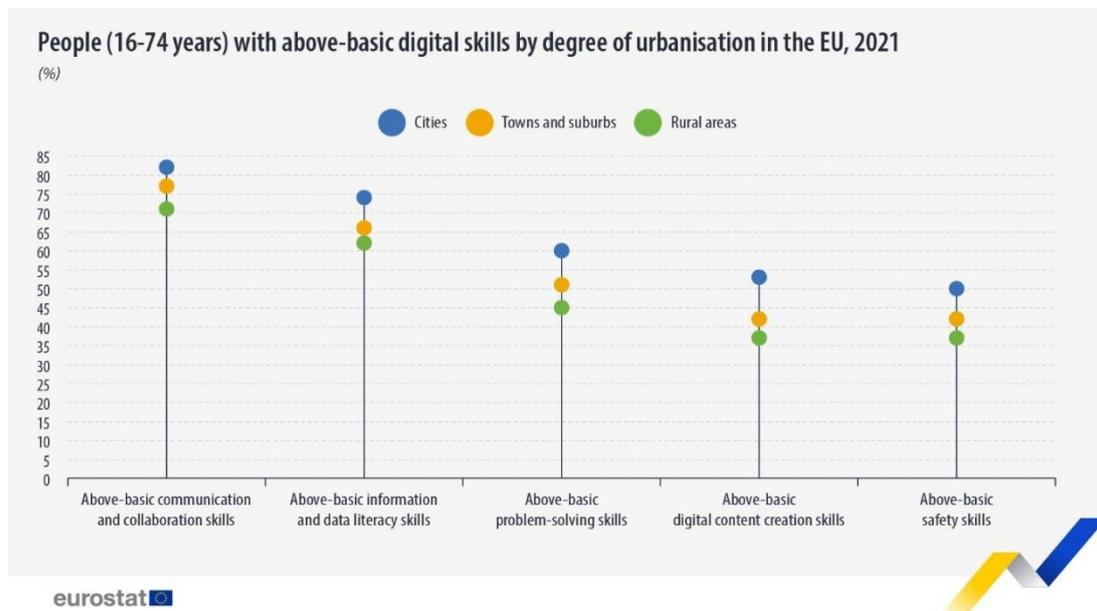
there exist four primary digital categories, namely a) human capital, b) connectivity, c) digital technology integration and d) digital public services. Recently, Greece appears to have stabilized in the 25th position of the list, with small significant advances compared to the other countries (score of 38.9 compared to 52.3 of the EU’s average). In the individual categories, Greece was in the 22nd place in 3 out of 4 categories, but in the digital public services, a category of great importance, Greece was 3rd from the bottom (25th).

**Figure 2: DESI 2022 ranking. Greece is ranked 26<sup>th</sup>**



Source: Eurostat (2023).

**Figure 3: EU digital skills divide: cities outpace rural areas**



Source: Eurostat (2021).

Research into the impact of the “digital divide” on business results examines the differences in access to digital technologies. In the context of business operations, these dimensions may present opportunities or challenges, such as generational or gender disparities. According to Eurostat (2023), in large-sized firms the employees have a higher level of digital competence in comparison to small-

sized institutions. For instance, in the year 2020, a noteworthy disparity was observed between large enterprises and small and medium-sized enterprises in Greece, with regards to the prevalence of employees who possess digital skills. The data revealed that a substantial majority of the workforce were familiar with digital literacy in large-scale businesses (52%). The case, however, was different for small businesses, where the percentage of staff with advanced skills in digital literacy was only 17%. These percentage differences indicate a significant digital gap between the two types of companies. The level of digital skills an employee assesses is critical and has important consequences regarding the competitiveness of businesses productivity in the transformable businesses' environment. Larger firms or even companies with IT-specialist departments have an advantage in tapping into the intricacies of digitization, business optimizations and new opportunities that come along with this process. However, the lack of digital skills within small enterprises can adversely affect the full exploitation of the benefits associated with digitalization leading to poor performance and resilience of the enterprise. Lastly, 41% out of the large corporations used social media for the purpose of communication during 2020, while it was only 14% for the small businesses. Similarly, the disparities in web-based advertising among large and small enterprises are influenced by the magnitude of the enterprise. Furthermore, in Greece, about 67% of large-sized tourism companies had an active working website in 2020; however, this rate was only 22% for small and medium-sized businesses (Eurostat, 2020).

Regarding international tourism companies working within the Greek sector, they mostly prefer to employ professionals with advanced computer knowledge, unlike national organizations. Among the 50 percent of companies in the tourist sector that had non-Greek ownership of share capital, 28% or almost one third were staffed with highly digitized personnel while only 16% of the companies were owned by Greeks. Social media is used by 37% of multinational companies and 15% of Greek companies involved in Greek tourism. According to Eurostat, 51% of foreign-owned businesses had a website in 2020, while the percentage of Greek-owned businesses was 29% (Eurostat, 2020; INSETE, 2021).

There exist numerous instances of the identical situation at the national level. Nonetheless, there exist additional factors that contribute to the digital divide, resulting in certain companies possessing an advantage in digital technology over others (Morris et. al., 2022). These reasons are due to the differences in population levels, the economy and knowledge between large urban areas and smaller urban and rural areas. Despite the efforts made by government agencies in numerous nations to ensure equal access to digital technologies (Cambini & Jiang, 2009; Holt & Galligan, 2013), disadvantaged regions encounter challenges in terms of digital development, particularly during the initial stages of digital transformation (Malecki, 2003; Strover, 2003; Velaga et al., 2012). Most businesses in these areas are small or medium-sized, and have traditionally focused their sales on locals or people from the surrounding areas. Since locals have access to the internet, they can consume products and

services from other areas through e-commerce platforms, resulting in local businesses' losing their customer base (Hite, 1997; Malecki, 2003; Winter & Loble, 2009; McManus et al. 2012).

**Chart 2 Percentage difference in digital literacy (within the country)**



Source: Eurostat (2020).

The loss of the local customers and partners is of outmost significance, as it presents a disadvantage to another business when seeking customers or suppliers to sustain its operations and expand (Townsend et al., 2013). The partial adoption of information and communication technologies (ICT) can cause significant problems in a region, first losing competition within the country, then losing international competition (Salemink et al., 2017). Digital supply and demand are not in balance. This is also the case with the supply in terms of quality of a service or product. For example, if the quality of the hotel's rooms cannot be promoted due to the perish ability of the service or the lack of these skills in-house, revenues might be lost. Technology has the ability to objectively assess the market requirements, the current trends, and the demographics' interests (BEIS, 2019; Morris et. al., 2022). Ultimately, it is imperative that we distinguish between these businesses. This option would provide SMEs with the opportunity to spread risk across different markets (Spowart & Wickramasekera, 2012). Diversification and business strategies rely heavily on the adoption of innovation and technology as ways to exploit market opportunities available by location and digital connectivity across a network of suppliers, customers, and partners (Bowen & Morris, 2019).

## **2.2 Digital place branding, social media and the invisible competition in the digital world**

The fundamental concept of place promotion is that place branding on e-commerce, sites and social media platforms can function as a cycle, with the premise that place branding and the local product are inherently linked to place image. After that, the place image must be positively related to the place's reputation, place's association, and tourists' experience. The cycle begins with place image, continues with tourist experience, then place reputation, and finally, place digital convocation, leading

to place branding (Foroudi et al., 2016). Social media is an essential tool for place branding and communication for a city or a larger region. The utilization of social media and digital communication can enable a place to achieve significant objectives in the communication and marketing domains on a larger scale (Protopapadakis, 2017; Vichou, 2017). Campaigns are conducted across a variety of social media platforms in order to maximize their outcomes. Social media campaigns should use common, optimized digital storytelling techniques that reflect reality (Protopapadakis, 2017; Vichou, 2017). Storytelling is crucial, because if someone doesn't know the story to an equal extent as the others, the story might change at the end. With a more sociological perspective, we can talk about noise (Warnaby & Medway, 2004; Merrilees, et al., 2012; Allagui & Breslow, 2016).

Social media, as communication channels, presents the opportunity for diverse institutions and substantial enterprises to creatively promote their internal operations, products, contributions to social responsibility initiatives, and the attractions of the city and its environs. They have the ability to apprise residents and potential visitors about diverse events and activities in the city-region, based on the offerings available during a specific period, under the umbrella of a common brand name, namely the name of the city-region. In this way, business, culture, local culture and the natural landscape are first seen by their potential visitors as visual messages and then transformed into physical substance (Warnaby & Medway, 2004; Merrilees, et al., 2012; Allagui & Breslow, 2016).

The urban lifestyle in a contemporary setting ought to not solely captivate those who organize local events or festivals, sponsors and residents. Information about a "local" event could—and perhaps should—be shared beyond the surrounding area, to a larger, more public sphere. Businesses can benefit significantly from these communication flows, as this can lead to a growth in capital inflow. Due to this market development, we should also discuss the competition between the cities. Cities compete with other cities as tourist destinations for their natural environment and architecture, as well as for the services they can provide, depending on the concentration of highly intelligent individuals in their population due to urbanization (Polyzos, 2015). Competition between cities brings the need for the creation of a central actor for the promotion of the city, but also the creation of a holistic marketing sample, that every type and size of business has to follow, to contribute to a common information iconography. For a marketing mix of the 7 P's (Product, Promotion, Price, Place, People, Process and Physical Evidence) to succeed, the central target should be shared in micro - level situations to align the entire "production line" of the city (Kotler, et al., 2016; Roido & Kaldis, 2018). Furthermore, the city stakeholders constitute the human element in the marketing mix, being entrusted with a significant portion of the responsibility of generating the visual messages of destination and its businesses, without altering the values and brand identity. These individuals are also responsible for operating or managing businesses within the city. However, when we talk about people, we talk about culture. The created iconography that the central marketing actor has distributed from the beginning in micro level situations aligns with the destination brand and travels through digital communication in different perception frameworks. Of course, the place factor is very important, as it determines,

besides the production and consumption contexts, the communication channels used. If, in one place, every business has websites, social media accounts, booking platforms, etc., guidelines should be given by that place that do not deviate negatively from the average, and it eventually breaks down the communication flow in macro level situations (Cleave, et al., 2016; Kotler, et al., 2016; Vasiliadis, 2019).

The current challenge for monitoring the effects of communication flows from micro-environment to macro-environment is the inclusion of existing target groups through interaction and the level of communication co-creation involved. By message co-creation, we refer to the opportunities given to message receivers—customers and/or potential visitors—to create and distribute their own messages and/or add to the centrally or business led visual strategy (Hospers, 2011; Braun et al., 2013; Eshuis & Edwards, 2013; Zenker & Beckmann, 2013b). The positive effect of co-creation will bring free advertising to the city through e-word-of-mouth, and this is the final part of an ideal linear digital place promotion strategy, This can also help towards the country's bigger-picture digital strategy (Cleave, et al., 2016; Kotler, et al., 2016; Vasiliadis, 2019).

### **2.3 Social choice theory and the connection with tourism destinations**

Prospective buyers often arrive at collectively influenced decisions, without expressing their individual ideology or considering other potential influences on their final choice. Rather, they frequently consider the preferences of individuals who share similar viewpoints, yet actively participate in facilitating the influence, persuasion and dissemination of information among those who share common views among themselves (Grandi, 2017). However, often members of a group may have partial knowledge of the preferences of other members, and even before deciding, they may have already made scenarios about the most likely future decision. When talking about interpersonal decisions rather than consumer or business decisions, there are important variables that the people who make up a group—an ensemble of different people—take into account, such as: a) knowing the other members of the group to a certain extent, b) knowing who they can rely on, c) knowing who has the power of the expert regarding influencing the others towards their decision, and d) assessing whether their opinion will have an influence and on whom.

The most common decision taken in these situations is to collect data from the choices/votes of the public in order to determine strategies in order to achieve the goals and influence the outcome of the collective decision (Grandi, 2017). Based on what we have already said, the following correspondence could be made for the business world.

**Table 1: Correspondence of theory and hypothesis according to the topic of the thesis**

Variables for interpersonal social choice	Variables for inter-firm social selection
a) know the other members of the group to a certain extent.	a) know their audience and their competition.
b) know who they can rely on.	b) know their staff and partners.
c) know who has the power of the expert as far as influencing one's own decision on others is concerned.	c) know the market leader and what they need to do to become market leaders themselves (important to use modern marketing trends such as viral marketing and influencer marketing in order to gain trust from potential audiences).
d) they also appreciate whether their opinion will have influence and on whom.	d) try to build a stable customer base.

Social choice theory is of interest to economic and political scientists, as well as sociologists. But it is important to point out that in this paper the consideration of the digital divide in tourism is examined as a social problem rather than a business problem. The philosophy behind the choice of using or not using digital media and to what extent, comes from teachings and stimuli from people in management positions. In order to comprehend this correlation more effectively, it is imperative to conduct an analysis of the theory through the lens of tourism and a market context. Initially, we represent all consumers by utilizing the symbol  $N$ , which corresponds to 1, 2, 3 etc.  $N = \{1, \dots, n\}$  and the symbol  $A$ , which corresponds to a, b, c, etc.  $A = \{a, b, c, \dots\}$ , representing the set of alternative solutions (encompassing the entire group of companies). It is assumed that consumers in set  $N$  are connected to a social network, which is represented as a directed graph defined by the set of edges of  $E \subseteq N \times N$ . The set ( $N$ ) of a consumer ( $i$ ) is then symbolized as  $N(i) = \{j \in N \mid (j, i) \in E\}$ , utilizing a definition that can be applied to both externally directed and non-externally directed networks. The structure of a social network  $E$  can be influenced by its composition, such as whether it is a chain, a tree, or a more complex hierarchical structure. In the set, of course, there can be influence or trust networks and opinion diffusion networks, which are considered directed as far as the final choice is concerned, while general social networks representing social acquaintances or information are theoretically undirected.

Consumers of a common set express their preferences in varying forms and with varying degrees of power, depending on the circumstances (Zhu et al., 2005). The classic approach from voting theory is that of the consumer profile  $P = (1, \dots, n)$ , where  $i$  is a non-reflective and complete binary relation over the alternatives in  $A$ , that is, a linear series resulting from each individual decision of one of the sets on an alternative through matching (Zhu et al., 2005; Grandi, 2017).

Another well-known framework is that of binary voting, where we will assume that  $A = \{0 \text{ or } 1\}$ , meaning that there are only two alternative options. According to this framework, a consumer or voter must choose between two options, which they must accept or reject. In this particular instance, a consumer profile refers to any P value equal to  $(p_1, \dots, p_n)$  where  $p_i$  is the value of an individual ballot paper that selects one of two alternatives. Additional alternatives may ultimately yield outcomes that initially appeared to have a low probability of being selected. General scenarios such as the two aforementioned can be utilized for various purposes, including national elections and movie selection among a group. The most widely recognized result is Arrow's theorem, which pertains to binary voting (Arrow, 1963; Zhu et al., 2005; Grandi, 2017).

In addition to the aforementioned, it is worth considering the digital divide and digital communication and information in general as a concern in the final decision-making process, whether it be for a company from the customer's perspective or for a market segment from the company's perspective. Furthermore, it can pose a challenge in the company's internal operations. Arrow's theory of social choice, which refers to democratic problems and elections, can be applied, through a certain reduction and adjustment, to the reality of tourism. Given that each business has a distinct area of visibility and a distinct size and influence, consumers consistently make decisions regarding the tourism products and services that are presented to them as facts, and are then prompted to select the ones that best represent their needs. As mentioned in the diagrams above, consumers go through a process of information gathering, evaluation and decision making, before they choose a particular product or service. Hence, the customers are provided with a diverse range of sample information (i.e. businesses) to select from (Fodness 1994; Kozak & Rimmington, 2000; Ewen, 2001; Seddighiv & Theocharous, 2002; Sigala, et al, 2012).

Certainly, a variety of factors influence the decision-making process, especially in the digital world, including personal preferences, budget, and perceived value. However, when a business is not digitally active, some challenges arise, such as: a) it is not in compliance with the EU and INSETE for digital transformation, b) it loses potential customers, c) it loses the opportunity to collaborate with another company and grow, d) it does not give information about its mission and actions to a wide audience (the digital audience), e) it does not develop interactive communication with customers and non-customers, and f) it ultimately does not promote its business in the distribution channels used in the industry (Hosseini, et. al. 2015; Potoglou, et al., 2015; Filatova & Baratgin, 2018; Pochenchuk, et al., 2018). Furthermore, the critical factors that influence the customers' decision-making process could be presented and/or justified in the contemporary popular digital channels. These factors encompass variables such as price, which fluctuates on various booking platforms, location, reputation, corporate social responsibility initiatives, staff and internal factors, as well as any other factors that distinguish a particular company from others in the same location. Overall, the theory provides a useful framework for understanding the way consumers make decisions in the tourism industry and can find use in a variety of products and services (Ewen, 2001; Seddighiv &

Theocharous, 2002), including the digital market.

The theory discussed in this chapter is a theoretical mathematical model designed to facilitate an analysis of how collective decisions are made according to individual preferences. The digital divide can affect efforts to reach prospective customers through the stimuli they receive from digital channels to research and book travel and offered experiences. In many cases, individual preferences are not shaped when we refer to the context of tourism in Greece, as large international players, such as large hotel chains, monopolize the aggregate discourse. The potential customer does not have the time or desire to try and stay as a customer in a smaller company in order to make any comparison before his/her final decision. When it pertains to tourism enterprises and the preferences of customers, the digital divide has the potential to play a significant role, consistent with established business and customer protocols. For example, individuals with limited access to digital technologies may not be able to provide feedback, which may limit the ability of tourism businesses and others to collect customer's comments/messages (Kavoura, 2021). Even if all customers have equal access to digital technologies, it may not be possible to construct a fair algorithmic system that will satisfy everyone's preferences.

The digital divide and the sound that is generated according to this theory can also be used to undermine the reputation of the tourism business and the tourism destination within the framework of the tourism industry. Furthermore, there are many communication codes that are not used properly in the digital world to address people's expectations and desires. In general, the goal is to design an equitable and accurate information and communication platform for businesses and travelers. Collaboration among the operators, businesses, and platforms in the digital space can help to bridge such gaps (Fodness 1994; Kozak & Rimmington, 2000; Ewen, 2001; Seddighiv & Theocharous, 2002; Sigala, et al, 2012).

### **3. Data and method**

In order to answer the hypothesis stated in chapter 1, a number of steps need to be taken, such as the selection of the research tool, case study, research questions and data collection. This research was conducted employing the methodology of qualitative research. This methodology was chosen to provide a deeper understanding of the digital gap within the tourism industry in these locations. An easy way to extract important data on the digital footprint and image of a business, or an amount of businesses, or even the digital entity of a destination, is through their social media accounts, and in particular the most popular ones. The authors followed the social media accounts of selected businesses and recorded the promotion strategies used. The businesses chosen were located in two different areas of Greece: Rhodes, one of the most famous Greek islands and a popular tourist destination, and Volos, a seaside town on mainland Greece. The purpose for this selection was to better understand the digital gap between the size of tourism activity, but with a clear limitation on the size of the market of these two destinations and the degree of the characterization of the place as a

tourist destination. The purpose of this research is to demonstrate the digital divide in the selected destinations within the same country, with an emphasis on the tourism industry as an activity. This was accomplished through digital data collection and content analysis methodological tools, such as categorizing and coding inputs of posts' patterns, which offer flexibility in the research approaches applied, supporting a deeper understanding of the study's concerns (Berg, 2007; Creswell, 2009). Additionally, it can be possible to understand specific strategies or measures taken to address potential biases or limitations in the data collection and analysis process.

By incorporating these elements into your methodology analysis, you provide a more comprehensive overview of the research process and bolster the credibility of your study findings. In this paper, qualitative research, specifically the method of content analysis, is used, focusing on the secondary analysis of digital material on tourism enterprises' Instagram accounts in the two aforementioned tourist destinations. We studied the Instagram posts of 8 businesses in Rhodes and 4 businesses in Volos. During the period of our study, 384 messages were posted from the selected businesses in Rhodes, and 477 messages from the businesses in Volos. The properties-accounts were selected on the basis of their ranking in TripAdvisor list. The timeframe during which these messages were published is from the 2021 Low Season to the 2022 Off Season (following the summer season), although the precise dates may vary depending on the businesses and destinations involved. These two years are considered by the authors to be critical for the promotion and tourists' engagement, in both levels, businesses and destinations, as these two years are the following years after pandemic and big quarantine of Covid-19. The research questions concern a) the frequency of posts during off season – low season – high season, b) the visualization of staff in order to create the customer's sense of appropriation to the business, c) value creation through content marketing d) promotion of the place / destination to create positive external economies of scale, e) posts with depicted customers, f) posts with a seasonal message and h) number of posts reposted by customers. The above questions were chosen in order to decode the patterns and digital behavior of the accounts where they choose, and reach the central conclusions and answer our hypothesis in a safe and logical way.

This data selection methodology employed in this study encompassed a diverse range of factors from previous studies, which involved the process of highlighting the findings that have been previously conducted and are related to our primary theme. Firms in Rhodes, and also in Volos were selected to make it possible to isolate sites with different international tourist visibility. Data collection was limited to the active Instagram posts of businesses operating in these local areas until the point at which the social media platforms were deactivated or removed if this occurred. The content analysis was carried out on various elements of Instagram posts over the two different seasons, covering the rate of posting, staff visualization meant for better customer interaction, content marketing techniques again the value creation, brand promotion to get positive external economies, customer presence in the posts, and the incorporation of the seasonal mottos. Moreover, the issue was discussed regarding customers' reposts of businesses' posts. High rankings on TripAdvisor and Google were used as

selection criteria. The barriers to data collecting, such as, being able to collect posts within a given time period and having consistency among the businesses, did not stop the entire process. This research approach will guide the study to understand how exactly the business utilized the new digital strategies of different tourism markets. So following the authors' logic, if we search at the personal accounts of businesses operating in two tourist destinations with such a different pace and identity, through the key categorizations, it can be possible to see the approach and investment in the digital image of the businesses. Also, their visions and imaginaries of identification with the need to promote the destination, will be lead the results to the assumption that a destination can be reconfigured by the digital world, without infostructure investment and event planning. Ultimately, the research contributes to advancing scholarly understanding by shedding light on the digital divide within tourism and providing nuanced insights into the evolving landscape of destination marketing strategies.

The data consists of messages posted to the Instagram accounts of the firms listed below (Table 2), for a duration of more than one year, with the aim of visualizing data for the close of the 2021 tourism season, the preparation for the 2022 season, as well as its close. For each post, in addition to obtaining data for the timely utilization of social media (Off Season, Low Season, and High Season), an effort was made to obtain data on the following parameters: a) the representation of the company's staff in the posts, b) the creation of posts with content value / content marketing, c) the promotion of the general location of the destination, d) the representation of customers and visitors in the posts, e) the reposting of customer photos (to enhance e-wom), and f) the number of seasonal messages. Our sample consists of businesses from the Greek island of Rhodes and from the mainland town of Volos. For Rhodes, our sample consists of 3 hotels, 1 Airbnb type accommodation and 4 food businesses, while for Volos, all 4 businesses studied are hotels. This was deemed necessary due to the fact that Rhodes and the Dodecanese in general are primarily concerned with the three-year period from 2019 to 2021 (until the year the survey commences) in terms of the number of incoming tourists. The average number of tourists incoming per region is 3.695.000 million, with Thessaly occupying the 10th place with 418.000 visitors per year. Furthermore, the Dodecanese islands, and consequently Rhodes, possess greater variety of tourism enterprises, as the GDP of this region is largely dependent on tourism.

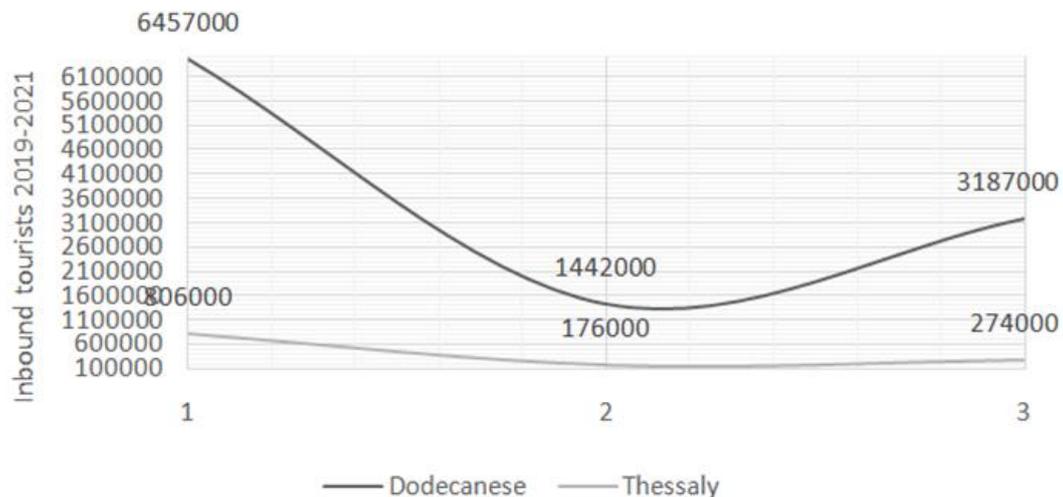
In this research, the sample selection attempts to represent a holistic integration of various research approaches, incorporating insights gleaned from pertinent existing literature. The selection of study locations, specifically Rhodes and Volos, was guided by their distinct characteristics. Each post was thoroughly examined in order to produce beneficial information based on social media and customer interaction. These were sorted into off-season, low-season, and high-season periods. This assertion is grounded on the divergent dynamics of tourism observed in Rhodes, as contrasted with Volos, where Rhodes and the wider Dodecanese Archipelago consistently occupy the first position on a scale of visitors' attractiveness, with a total of 3,695,000 visitors recorded in three consecutive years prior to

the present survey. However, Volos’ position in Thessaly is significantly lower, with only 418,000 visitors per year. Furthermore, the Dodecanese Islands, particularly Rhodes, are one of the preferred tourism enterprises, which indicates the heavy dependence of the region's economy on tourism.

**Table 2: Data extraction (social media) accounts and businesses**

Rhodes, Dodecanese	Volos, Thessaly
1. AtriumPalace	1) VolosPalace Hotel
2. LindianVillage	
3. SereneRetreat Eco Villa	2) Aegli Hotel
4. SantaMarina	
5. NorBeach Project	3) XeniaPalace
6. SissitioRhodes	
7. Elysium Resort and Spa	4) Arxontiko Hotel
8. Elli World	

**Chart 2: Incoming tourism 2019-2021, Dodecanese – Thessaly comparison**



#### 4. Results

The research focuses on Instagram posts from businesses from two geographically different destinations, the island of Rhodes and the city of Volos in mainland Greece. The Instagram posts of eight selected businesses in Rhodes were examined to comprehend the nature and extent of their digital marketing strategy initiatives. There were 42 photos or videos identified. Their content encompasses staff members in diverse settings, from work-related seminars to illustrations of awards and more general posts of moments where staff members are engaged in providing services to their customers. On the other hand, only 9 posts with relevant content exist on the business's Instagram

accounts of Volos. In Rhodes, businesses are using content marketing more than Volos, with enterprises posting a total of 25 content marketing type posts on their Instagram accounts. These posts typically serve the purpose of informing and attracting a specific audience, often going beyond the conventional marketing approach. Nonetheless, it appears that businesses situated in Volos follow a more cautious approach in this domain, exhibiting a mere 5 posts of content marketing type.

Another interesting aspect of the quantitative analysis is the category of posts that promote or provide information about the destination. Rhodes businesses take a proactive approach in this regard, posting 32 such destination-related posts on their Instagram accounts. Their counterparts in Volos, however, posted only 17 such destination-oriented posts. The disparity observed between these two destinations in terms of promoting the destination itself may be attributed to a multitude of factors. One possible explanation could be the overwhelming popularity of Rhodes among mass tourists. The promotion of the island as a picturesque and charming destination necessitates a more extensive promotional effort. Hence, enterprises in Rhodes are more inclined to allocate significant portion of their digital communication towards extolling the virtues of the destination, with the intention of gaining indirect benefits. The subsequent aspect of the analysis delves into posts that are indented to elicit interaction and engagement with the audience, such as those featuring competitions, invitations to tour, games, and other similar content. These posts frequently feature customers who are enjoying their vacation at the resort. Businesses in Rhodes are remarkably productive, creating 92 posts that depict customers enjoying their experiences. Volos-based businesses, on the other hand, made only 13 attempts to encourage interaction.

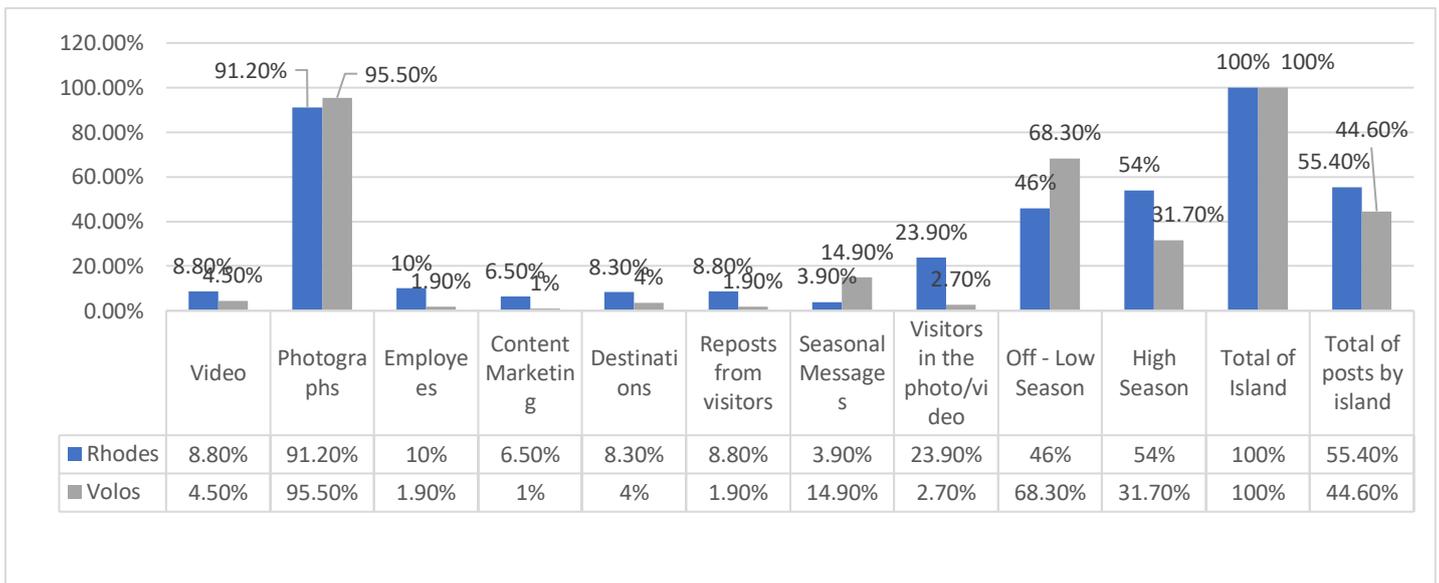
Furthermore, it appears that businesses in Rhodes repost customer content frequently. During the study period, we found that they reposted 31 customer posts. Their counterparts at Volos embraced this strategy much less, reposting only 9 customer posts. It is worth mentioning that businesses in Volos posted a total of 71 seasonal messages compared to only 12 from businesses in Rhodes. It means that Volos' companies post seasonal messages almost 6 times more than Rhodes businesses. The research also examined two additional factors, one being the type of posts (photos or videos) and the other being the timeline of the content posted, regardless of the season's calendar. There were 34 posts in the form of videos on the social media accounts of Rhodes-based companies. That constituted approximately 10% of all posts throughout the duration of the research. There were only 340 posts with photos. Businesses located in Volos published just 21 out of 453 posts as videos, which constituted just over 4% of all posts. This disparity is quite significant when one considers the parameter of the tourist season. During low or off-season periods, the businesses in Volos appear to post more content on social media. There were 302 such posts in the social media accounts, which represent around 67% of all posts. Companies in Rhodes shared 151 pictures and videos regarding the low or off season, which constituted 40% of their posts. Such differences are most probably justified, due to the fact that Volos is open to visitors throughout the year, unlike hotels in Rhodes. Volos is situated between the sea and Mount Pelion, creating varied tourism possibilities all year round. On the

contrary, Rhodes, being a Greek island destination, experiences shorter, yet more concentrated peak season. The quantitative findings provided stimulating perspective on communication approaches employed by tourism firms in Rhodes and Volos. The quantitative findings serve as the foundation for a more comprehensive and informed qualitative analysis of the complexities and interplay that characterize two distinct sites. These strategies are advantageous not only for the aforementioned businesses. The findings also have implications for the tourism industry as a whole, implying that digital marketing ought to be central to the decision-making process that influences travelers' destination selections. In Table 3, it is obvious that that an island region with fewer social media postings may have more content variety in terms of reaching out to its potential audience than a mainland region.

**Table 3: Comparison of quantitative data of Rhodes and Volos**

Rhodes	No. of posts	Volos	No. of posts
Video	21	Video	34
Photographs	456	Photographs	340
Employees	9	Employees	42
Content Marketing	5	Content Marketing	25
Destination	17	Destination	32
Reposts from visitors	9	Reposts from visitors	34
Seasonal Messages	71	Seasonal Messages	15
Visitors in the photo/video	13	Visitors in the photo	92
Off-Low Season	326	Off-Low Season	177
High Season	151	High Season	207
Total of Volos	477	Total of Rhodes	384

**Chart 3: Comparison of quantitative data of Rhodes and Volos in percentages (%)**



#### 4.1 Analysis of results

Following the collection of quantitative data, the authors conducted a content analysis. In order to achieve more, the results were meant to be deepened down to gain an in-depth understanding of both the content and the general culture within the context of this study, as it relates to the objectives and questions. This approach helps to interpret the meaning and significance of the content, revealing hidden themes, patterns and messages that quantitative data may overlook. This is illustrated by the businesses operating in Volos, as we explain below. The qualitative analysis was also considered necessary in order to enhance the validity and reliability of the research by applying a systematic and rigorous method to draw meaningful conclusions. As the outmost aim of the research is to provide a new perspective on the issue of the digital divide, as far as its sociological approach is concerned, on a larger scale, it combines the full micro-environment of the business with the macro-environment at a second glance.

With regards to the utilization of the English language, color codes, emotions and creativity, it is evident that tourism enterprises in Rhodes possess a higher level of creativity and literacy in social media compared to their counterparts in Volos. The reason is that such skills and knowledge are considered necessary in a higher competition environment, such as the one in Rhodes. The manner in which these businesses present themselves on the internet has a significant impact on the perception of potential tourists towards them and ultimately, their decision-making process. The method of republishing already existing and published materials varies greatly between these destinations. Despite the tendency of businesses in Rhodes to refrain from recycling outdated posts holistically, it appears that businesses in Volos are adopting this approach more frequently and even regularly. This may work for one side but it will also have a negative impact on the other. In one aspect, however, it

may aid in the preservation of the business concession while also reinforcing crucial assertions. However, its use may make it appear repetitive, which may make it less interesting to the audience.

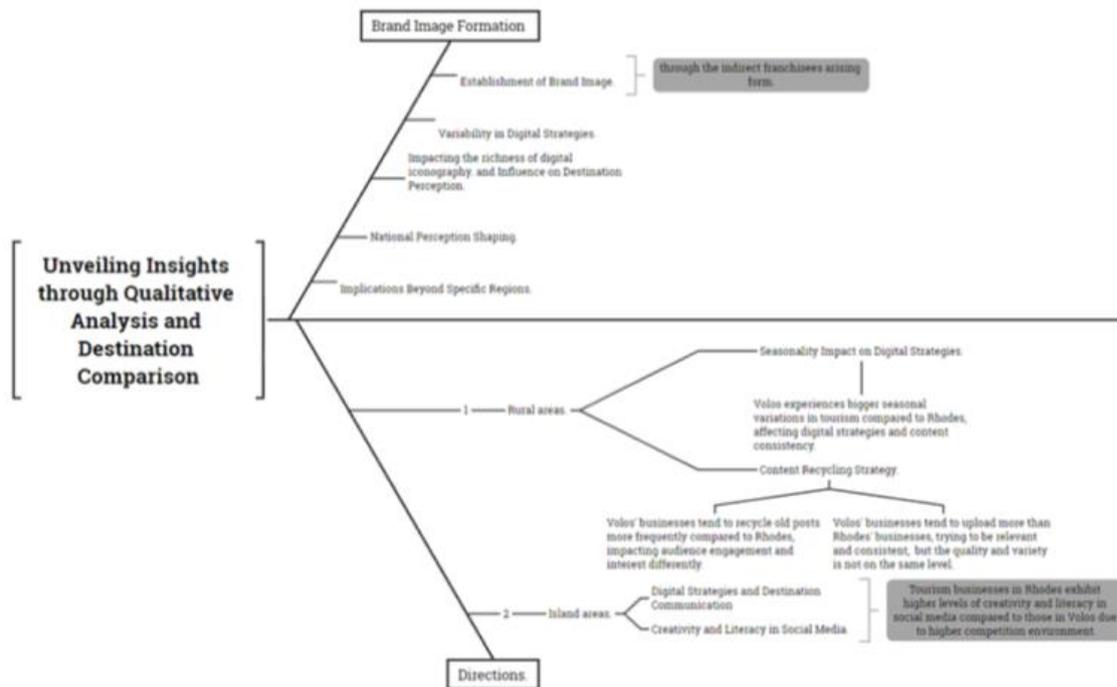
The primary distinction lies in the fact that one destination exhibits more seasonal character in comparison to the other. Volos experiences larger seasonal variations in tourism than Rhodes. This is worth noting, considering that each business operates differently depending on its location. According to the comments of the posts studied, Volos appears to attract mostly Greek tourists, according to the comments of the posts studied. In this aspect, businesses usually recycle material like room shots during the low or off-season. This could mean that there is not enough staff available to keep things in high gear during low seasons. However, Rhodes businesses are relatively consistent throughout the entire year, which allows for different styles to be posted frequently throughout the year. Therefore, even when they post less, the Rhodes businesses are relatively consistent in general and thus, they better manage their digital strategies.

The above-mentioned separation emphasizes the importance of digital strategies for communicating particular features and differentiations of a place. However, such an argument would be stronger for businesses in Volos than in Rhodes, since seasonal variations are more pronounced there than in Rhodes. Rhodes businesses also have a superior advantage when it comes to seasonal messaging. The consistent high volume of tourists in Rhodes has resulted in the businesses maintaining a more innovative and consistent online presence, resulting in a compelling and engaging digital narrative for the destination. There could be some improvements, especially when businesses in Rhodes follow in the footsteps of businesses in Volos regarding the two factors mentioned above. The study has shown that each social media account of a tourism business contributes to creating an effective digital communication strategy for the destination. Such accounts act as an alternative to the official municipal accounts in which visitors may see aspects of the destinations that can be experienced together or even in a more personal manner. Lastly, the travelers' views of what their trip will be like, are compounded by interacting with this additional content through these users, their noise or volume, and frequency of posts. As mentioned in a previous chapter, noise, for potential visitors, is important, as they may even reconsider their choice of location or even country when they cannot be convinced by its "ambassadors" (the businesses) on social media.

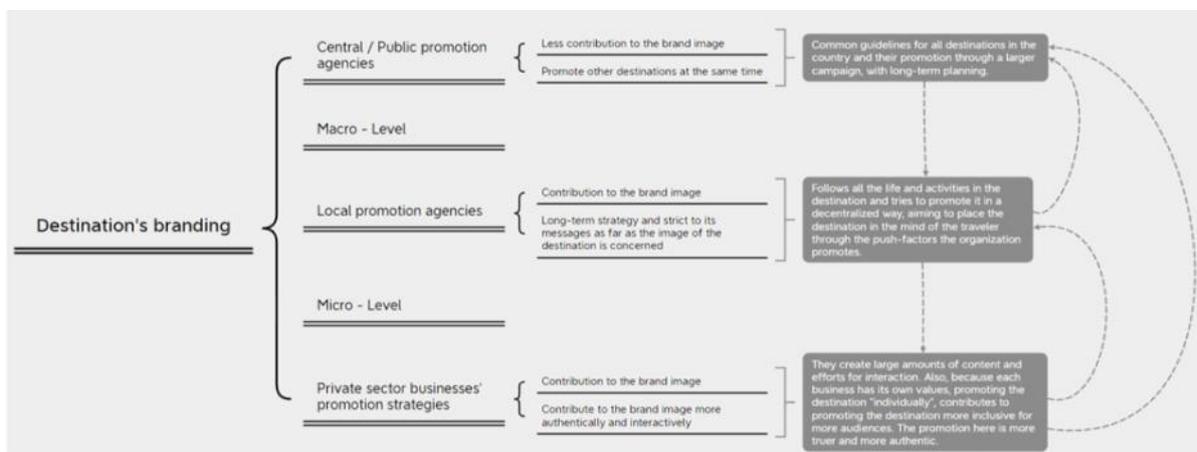
Since there are no simple guidelines for digital communication, places must establish their brand image both in their premises and online, in order to avoid problems with the tourism flow in the long run. Each company's space in the digital sphere may vary greatly, as can the substance of the messages it offers to its customers. It is evident that a tourism-based economy island, such as Rhodes, will have a very rich digital iconography, compared to a new agricultural village or regional place. The reverberation of social media messages are excessively loud in certain tourist destinations, such as the islands of Mykonos and Santorini in Greece, which are overly populated with tourists. Therefore, visitors' ultimate decision may narrow down the options between Rhodes and Volos inside Greece, let alone elsewhere and as such, travelers may look for different destinations at the end. The examination

of this phenomenon underscores the significance of digital communication in the realm of tourism. Despite the limited focus on two distinct regions, the research can be utilized in broader contexts. Businesses' digital strategies may have an impact on how a nation is perceived as a tourism destination. Hence, the gathered data proves advantageous on a national scale, as it has the potential to enhance the tourism appeal of the destination.

**Figure 4: Graph visualization of qualitative analysis on the results of hypothesis**



**Figure 5: The destination under the microscope of its promotion. The benefits from a multi – level perspective. Image created for the research to summarize the process in a dynamic framework. Hypotheses positive answers.**



## **5. Discussion and conclusions**

The survey indicates that there is a digital divide in the tourism industry, highlighting the disparity in the use of the internet and technology. It is imperative to create a user-friendly digital space for the locals, while also appealing to foreign visitors in order to bridge this gap. There are several ways to overcome the issue of digital gaps. To begin, the staff of small hotels and tourism businesses' staff should be trained in digital skills by providing necessary inputs. This should include hosting workshops and training programs, as well as supporting the adoption and implementation of digital tools. Moreover, fostering collaborations between substantial tourism enterprises and small-scale enterprises may serve as a means to bridge the gap. Smaller businesses are not able to compete with larger companies in the digital world, which can narrow down the digital competition. However, B2B partnerships could enable them to overcome these constraints and excel in the virtual world. For social choice theory, each social media account contributes to a destination's effective digital communication strategy. In this respect, we can create a large local franchise mechanism, in the scale of the destination, where each account, regardless of its size and reach, succeeds in adding a small piece of information (via posting and uploading content) to the final destination puzzle/image. Collectively, this makes the cumulative effect of these posts wider than local boundaries and allows for competence with some regions. When viewed on a larger scale, it can also help promote the entire country. Nonetheless, the notion of noisy selection must persist as a concern, particularly in destinations that possess varying digital speeds and capabilities. For example, for some tourists, the different digital messages sent via different information sources can lead to an array of challenges and misconceptions. In the same manner, contradictory digital communication messages in such instances can arouse confusion and frustrate prospective tourists (Protopapadakis, 2017; Vichou, 2017).

The final selection of each visitor may not solely pertain to specific locations such as Volos or Rhodes, but may also encompass any destination that comes to their mind, whether it be within or outside the country. In order to promote individual destinations, integrated digital strategies should be developed, taking into account decentralized development of destination capacities for the general purpose of enlarging the communication and promotion flows, to the micro-level franchises. Consequently, the establishment of a user-friendly digital environment that necessitates bridging the digital divide would hold significant value in the hospitality and tourism industry (Protopapadakis, 2017; Vichou, 2017). Training, providing resources and fostering small business partnerships can help boost digital capabilities at all levels. The concept of "social choice" explains why and in what ways people make choices, including destination choices. The issue of "noisy voting" is a challenge that should be addressed to avoid confusion in communication. Furthermore, such considerations are imperative for successful destination marketing at local and national levels, because all of these free and separate communication flows are combined, creating a multi-dynamic digital environment, thus giving the necessary coherence to the digital world. Ultimately, the conceptualization of promoting

destinations through digital advertising activities of individual local firms represents a dynamic shift in destination marketing paradigms (Warnaby & Medway, 2004; Merrilees et al., 2012; Allagui & Breslow, 2016). By harnessing the collective digital identity of these companies, destinations can craft a cohesive narrative that resonates with target audiences on a global scale. This approach not only fosters collaboration among local businesses but also utilizes the power of social media and digital platforms to showcase the unique offerings and experiences of the destination. By employing strategic branding, storytelling, and engagement, these initiatives aid in the creation of a comprehensive digital identity that positions the place as a must-visit place destination in the eyes of travelers. This approach demonstrates the significance of collaboration, innovation, and digital fluency in contemporary destination marketing strategies.

This scientific work has certain limitations when it comes to transmitting its findings. Due to the limited literature in the field, it is difficult to gain a comprehensive understanding. This demonstrates the significance of exercising caution in interpretation and emphasizes the importance of conducting additional research to address this gap for future prospects. Nonetheless, it has the potential to serve as an introductory chapter for small-scale national studies. Initially, two destinations are evaluated, which, comprehending the complete context or resemblance of the preferences and conduct of the target audience. Similarly, the results may be unique to these two places and could fail to apply in other places. The second limitation pertains to the distinct source markets for the two destinations, which may have existed in the past or are currently in existence. Longitudinal analysis may complicate the perception of analysis and comparison.

A third limitation is the business to business (B2B) relationships in consulting, business partners with hotels and convention centers, promotion and selling teams, where they cannot be seen if they exist and remove how they affect the sample through the following analysis. This approach may potentially narrow down the area under consideration. The final constraint is that there were few posts and businesses considered, making the statistical data weak for the survey due to limited reliability and variance among the target population or the sector within which the destination is located. The last limitation stems from the fact that the data were pulled without taking into account post quality metrics, engagement rate (ER) and engagement. Data have not yet been drawn from the financial data of either companies or destinations. Ultimately, it is imperative that a) the absence of these limitations in the analysis of the results does not render this research subordinate, but rather serves as an introduction to a broader discussion on the subject and on a global scale, and b) that these limitations are acknowledged in the interpretation of research findings and incorporated into future studies or decisions based on research results to mitigate statistical deviation.

Future research should aim to explore digital regional inequality, which stems from the existing inequality, and study it from the perspective of the sociology of technology and digital humanism, so that the scope of business to destination can be extended to the person to country. It would also be interesting to compare two similar destinations from different countries through both economic and

content analysis. This would emphasize the necessity of integrated digital strategies that encompass both official promotional efforts and stakeholders' visions. Our recommendation for public policy implications is for the responsible promotion and marketing body of the destination to develop digital routes within the destination, either through a tourist guide, map or application. This initiative will involve a diverse group of members, including businesses, and will be fully aligned with the suggested material. It will also maintain a personalized approach to business, ensuring that quality is maintained at a high standard for both the destination and the members.

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