



INTERNATIONAL
HELLENIC
UNIVERSITY

Digital Transformation in tourism sector

Chatzisavva Panagiota

SID: 3305150007

SCHOOL OF SCIENCE & TECHNOLOGY

A thesis submitted for the degree of

Master of Science (MSc) in E-Business & Digital Marketing

DECEMBER
THESSALONIKI – GREECE

2017

Abstract

The aim of this research is to examine the impact of technology upon tourism sector. More precisely, the technologies that are examined are the online booking systems along with the global distribution systems, the social media usage and the online reviews. For the purposes of this research a mixed method approach was used, with questionnaires and interviews to hotel guests and hotel managers respectively. The results of the study have indicated that indeed technology has changed the tourist sector, and especially the hospitality industry, since the research was conducted to hotel managers and guests. More precisely, the findings of this research revealed that booking systems, social media and online reviews allow a better interaction between tourist businesses and consumers, facilitate the marketing and the greater exposure on behalf of the business, improve service quality and the provision of customized services to customers through customer insight offered by the feedback, increase the negotiate power of hotels due to the online reviews, and overall lead to increased customer engagement, brand recognition, customer satisfaction and loyalty, and hotel profitability. Thus, it is expected that the tourism sector, and especially the hospitality industry, will rely heavily upon technology in the following years. However, further research is needed to other tourist businesses and their guests, in order to assess the impact of technology and digitization to the whole tourism sector.

Keywords: technology, social media, online reviews, online booking systems, global distribution systems, tourism

Acknowledgments

First of all, I would like to thank my supervisor professor Dr. Fouskas Konstantinos who offered me guidance and significant help through my thesis.

Also, I am extremely grateful to the administration of the university Mr. Berberidis, Gatzisanas, Koidis Christos and the other members for their advice and help during my studies inside I.H.U.

My sincerest thanks to Mr. Rasoulis Alexis who gave me crucial information regarding the digital transformation in the tourism industry.

I am also grateful to Theodoros Oikonomidis (PhD candidate) for an excellent cooperation during my thesis writing.

Finally, allow me to express my deepest gratitude to my family which kept supporting me all these years and who helped to not lose focus on my studies and on my target.

Table of contents

1	Introduction.....	5
2	Booking systems and Global Distribution Systems.....	8
2.1	From computerized reservation systems to Global Distribution Systems.....	8
2.2	Reservation systems.....	9
2.3	Global Distribution Systems.....	11
2.4	Benefits of Global Distribution Systems.....	13
2.4.1	Benefits of GDS to tourist business.....	14
2.4.2	Benefits of GDS to customers.....	15
3	Social Media in Tourism.....	16
3.1	Transformation of tourism sector due to social media.....	16
4	Online Reviews.....	19
4.1	Impact of online reviews in purchase decision-making.....	19
4.2	The phenomenon of fake online reviews.....	21
5	Method.....	23
5.1	Methodology.....	23
5.2	Methodological instruments.....	24
5.3	Sample.....	25
5.4	Procedure.....	25
6	Results.....	27
6.1	Quantitative analysis.....	27
6.2	Qualitative analysis.....	52

7 Conclusions.....	63
7.1 Conclusions of the study.....	63
7.2 Limitations and suggestions for further research.....	65
References.....	67
Appendix.....	71

List of Figures

Figure 1: Architecture of a reservation system.....	11
Figure 2: Operation of global distribution systems in the tourism sector.....	12
Figure 3: Evolutionary development of GDS.....	12
Figure 5: Percentage of US tour operators holding a GDS terminal, 1990-2013.....	13
Figure 6. Gender of the participants.....	27
Figure 7. Age of the participants.....	28
Figure 8. Educational background of the participants.....	29
Figure 9. Participants’ opinions about booking channels used.....	30
Figure 10. Participants’ opinions about the benefits of online booking systems.....	31
Figure 11. Participants’ opinions about the benefits for a tourist business from a social media presence.....	32
Figure 12. Extent to which the presence of a tourist business in social media affect participants’ decision-making process.....	33
Figure 13. Percentage of participants who participate in social communities in order to make reviews and comments about a tourist business after their tourist experience	34
Figure 14. Extent to which participants trust reviews, rankings and ratings concerning a tourist business in a social media platform.....	34
Figure 15. Extent to which reviews of other customers in various social media platforms affect enough participants’ decision-making process.....	35
Figure 16. Extent to which the participants are aware that perhaps fake online reviews may influence their decision making.....	36
Figure 17. Extent to which participants are in favour of using so much technology in the sector of tourism.....	37

List of Tables

Table 1. Social media used from the participants in order to be in touch with tourism businesses.....	31
Table 2. Technologies in which participants would be interested.....	36
Table 3. Differences in consumers' opinions based on gender.....	38
Table 4. Differences in consumers' opinions based on the age.....	42
Table 5. Differences in consumers' opinions based on their educational background	47

1 Introduction

The tourism sector can be categorized into five areas: accommodation, dining, entertainment, transport, and travel services. All of these areas offer services to tourists. Overall, the tourism and travel sector is the one with the largest number of

employees worldwide. More specifically, this sector employs over 100 million people and supports 1 in 11 jobs worldwide. Over the next decade, it is expected that this sector will provide 74.5 million new jobs. The continued growth of this sector worldwide depends on the availability of individuals to meet the demands for additional human capital in terms of knowledge and skills (World Travel and Tourism Council, 2016a).

The hotel industry had mixed results among the various countries according to the latest World Travel and Tourism Council (2016b) figures. More specifically, while the hotel industry was particularly weak in the Middle East and North Africa, in Europe and Sub-Saharan Africa the indicators were clearly better. In Europe, the hotel industry is the fastest growing in terms of employment. Between the years 2003-2008, the number of employees increased by 1.9 million, from 7.4 to 9.3. Between 2003 and 2007, employment growth was 21%, compared with just 6% across Europe's economy, and during the crisis, in the three years 2008-2010, the hotel industry in Europe offered 200,000 new job positions. In total, around 9.5 million people were employed in this sector at European level in 2011, representing 4.4% of total employment in Europe (Hotrec Hospitality Europe, 2011). Overall, tourism can be described as a complex system whose development depends on the constant changes in the tourist market, which is particularly acute, due to recent changes in the technological environment that led to the introduction of global distribution systems and electronic reservation systems, which provide a swift and adequate exchange of full, meaningful and timely information for the tourism sector (Radulović, 2013).

The development of technology has facilitated the process of providing quality services to customers at reduced costs for tourism businesses through the creation and development of booking systems as well as global distribution systems. Reservation systems enabled tour operators to offer their services to 24/7/365 tourists, contributing to the provision of direct services to touring customers in less time and at almost no cost, if not zero (Molchanova, 2014). It should also be stressed that customer satisfaction is the key success factor for a service provider. For this reason, any service provider should maintain a high level of customer satisfaction through the provision of high quality services (Adesina and Chinoso, 2015). There is an increasing demand for high quality products and services. As a result, tourism businesses should focus on providing higher quality services.

Within this framework, in order for a tourist organisation to be a successful, it should make decisions based on consumer needs, taking also into account the changes in society and the technological developments. This not only satisfies consumers but also strengthens the relationship with customers to ensure that they continue to be customers (customer retention). In addition, it is argued that consumer communication helps to create a positive impression of a hotel image and also build confidence and enhance the relationship with new customers, leading them to loyalty. However, it should be noted that a simple conversation with consumers using standard advertisements will not help in this direction. Conversely, the discussion needs to be credible so that consumers can be persuaded and interested in the organisation's brand and services (Yazdanifard and Yee, 2014). Identifying consumers with the brand is an important determinant of consumer loyalty towards this organisation. Nevertheless, consumer loyalty to a tourist organisation depends heavily on their positive assessment of its products / services (Fung So et al., 2013).

Further, a person's perception that a brand has a good reputation from other tourists (e.g. former clients) leads to an increase in the confidence of that person towards the organization. Therefore, communication through social media can lead to increased reputation and therefore higher consumer confidence (Christou, 2015). By using social media tools, tourists and consumers can express their views on the services provided, the tangible elements and the behavior of the staff in an organisation, hence consumers have the opportunity to share their experience. The dynamics of social media virtually strengthens and encourages consumers to express their positive or negative experiences about interacting with a tourist organization, even rating those hotels, thereby influencing purchasing decisions of future customers (Alalwan et al., 2017).

Based on the above, it can be argued that there are three main transformations in the tourism sector: booking systems, social media usage and online reviews. Each one of these changes has impact upon the players in the tourist sector. The aim of this research is to examine these three major digital changes and discuss their impact upon the tourist organisations. In general, the relation between technology and tourism and their interdependence can be viewed from two perspectives. The first is the aspect of tourism in the development of modern information technology, where it should be mentioned that tourism is today one of the most important economic sectors in the

growing tourist economy over the last 50 years. The second is the aspect of modern information technology in the field of tourism, which support the promotion, distribution and diversification of the product through rapid, open and unrestricted access to all information around the world. This has led to a change in the relations between tourist business and traditional service providers and has triggered the emergence of new tourist destinations, thus increasing the competitiveness of the tourist market.

2 Booking systems and Global Distribution Systems

Developments in technology, along with supply and demand pressures, have led to the creation of computerized reservation systems, as well as global distribution systems. Nowadays, tourist business (e.g. airline companies and tour operators) are able to meet customers' requirements and needs in a shorter time and at a lower cost, while facilitating their own business model. This is the subject of this chapter.

2.1 From computerized reservation systems to Global Distribution Systems

Prior to the application of computerized reservation systems, booking on behalf of tourists from tour operators was a complex process. For example, an airline announced the schedule of flights and ticket prices, which were then distributed to travel agencies. If a customer wanted a ticket, the tour operator had to determine the specific airline company that had the specific flight. This process was facilitated by the introduction of the Official Airline Guide (OAG), which collected prices from several airlines in one platform. If the tour operator identified the appropriate flight, he / she contacted with the airline booking department to find out if there was a seat available. Then the client had to give his consent before the tour operator made the final reservation (Sion et al., 2013).

The same complex procedure was followed by tour operators and tour agencies for ferry and hotel bookings. This, however, did not satisfy the tourist business as it was extremely time-consuming and complicated. It is estimated that 80% of the time of tourist offices was dedicated for bookings, with only 20% of them being finally made. Clients were also characterized by a low level of satisfaction with this process, as there were several delays. At the same time, the client had to show confidence in the tour operator that they would find cheap tickets and tickets, but because of the fees that tourist operators and agencies had to pay to the

companies (e.g. hotels, airline companies) this was not always achieved (Sion et al., 2013).

The above, along with the development of telecommunications and technology, has led to the creation of computerized reservation systems, which have enabled travel operators / agencies to have direct access to the main system of tourism businesses, such as airline companies and hotels. The first computerized booking system was developed by leading airlines in the 1960s, while during the next decade technology advances allowed travel agencies to access airline systems when the first booking system was created (Radulović, 2013). These systems have facilitated both tourist businesses and tourists, as they were less costly and time consuming. These systems provided internal solutions for inventory control and demand management. At the same time, both in terms of supply and demand side, there have been pressures that have led to the development of global distribution systems (Sion et al., 2013).

These systems have the ability to store information about all available service providers and have the necessary infrastructure to transfer these data. In fact, these systems have allowed tour operators to better control and promote their products and services, reduce the problem of seasonality, while at the same time have lower costs than other distribution means, particularly in the communications sector, allowing for flexibility in the price and thus leading to higher levels of customer satisfaction (Sion et al., 2013; Felicen and Ylagan, 2016). Today, all travel information is provided by Global Distribution Systems (GDSs). These systems enable users to control the availability and price of travel products. In addition, GDSs offer peripherals and software, as well as technical support to their customers, including printers for ticket printing by offices and agents (Dogac et al., 2004).

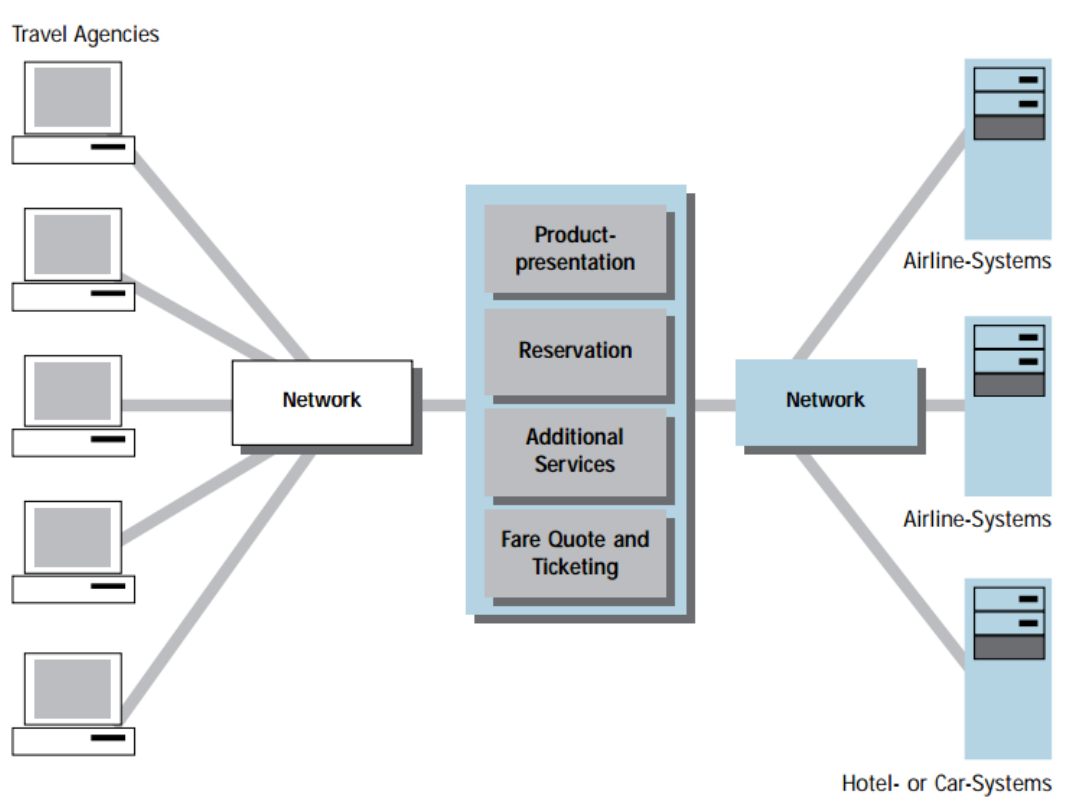
2.2 Reservation systems

Since the 1980s, computerized booking systems have shown a rapid expansion, affecting all tourist businesses. Initially, they emerged in the early 1960s as part of providing an efficient stock management tool. The rapid growth in demand and

supply in the tourism sector over the past decades has shown that industry could be kept under control by a single powerful computer system. Airlines were the pioneers in introducing this technology because they replaced hand-written reservation systems with electronic databases. Soon, international hotel chains and tour operators became aware of the benefits of these systems and followed this trend. Reservation systems are often used as a general term to include a wide range of systems. Overall, booking systems can provide important strategic tools for tourist businesses and destinations, and allow for the creation of autonomous business strategies (Sion et al., 2013).

Reservation systems are used by the tourism industry as a whole. Their use and continuous development improves the quantity and quality of the services offered to the customers, while at the same time offers measurable advantages to the tourism companies (Theoharis, 2006). Continuous updating of information and the ability to provide specific information, as well as booking support, confirmation and purchase of a wide variety of tourist products are the great advantages of these systems (Sion et al., 2013). For this reason, reservation systems are the most important distribution channel in tourism. Through these, tourist businesses, such as hotels, can offer their products / services 24/7/365, to a large number of customers irrelevant of their geographical disparity, at a very low cost, can improve the quantity and quality of services offered to tourists, while they can also obtain measurable benefits, such as making profits by skipping intermediaries and the high commission they were required to pay (Schulz, 1996; Sion et al., 2013).

According to Schulz (1996), computerized reservation systems are systems for pure logistical functions, namely information exchange. In addition, these systems also perform additional tasks related to the distribution of services, while supporting the transport of goods by eliminating the physical distance between the producer and the intermediaries. Therefore, computerized reservation systems can be described as a distribution support process, as it can be seen from the following figure, which illustrates the architecture of such a system.

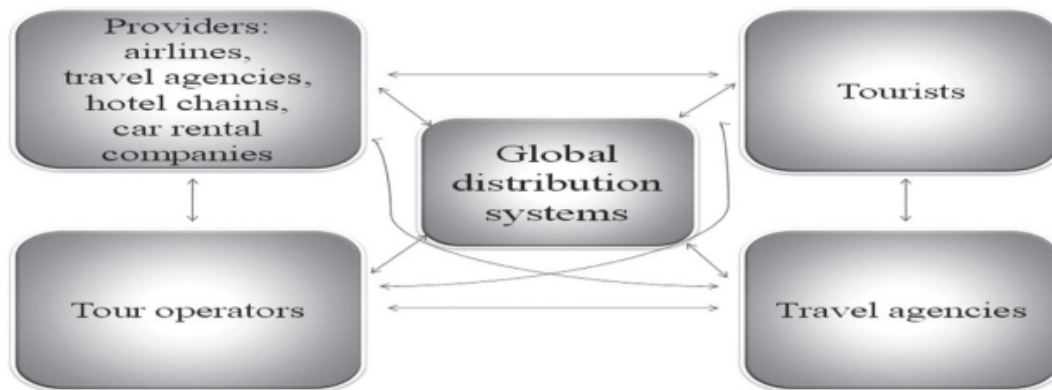


Source: Schulz, 1996, p. 18

Figure 1: Architecture of a reservation system

2.3 Global Distribution Systems

The further development of computerized reservation systems has led to the creation of global distribution systems (GDS). The following figure illustrates the operation of global distribution systems in the tourism sector. GDSs represent a link that further relates the main players of tourism with the intent to recognize the needs of tourists and offer them updated information that will create an integrated tourist product. In this way they further lead to the realization of the common goal, which is not only the pleasure of the tourists, but also the continuing profitability for all the tourism operators.

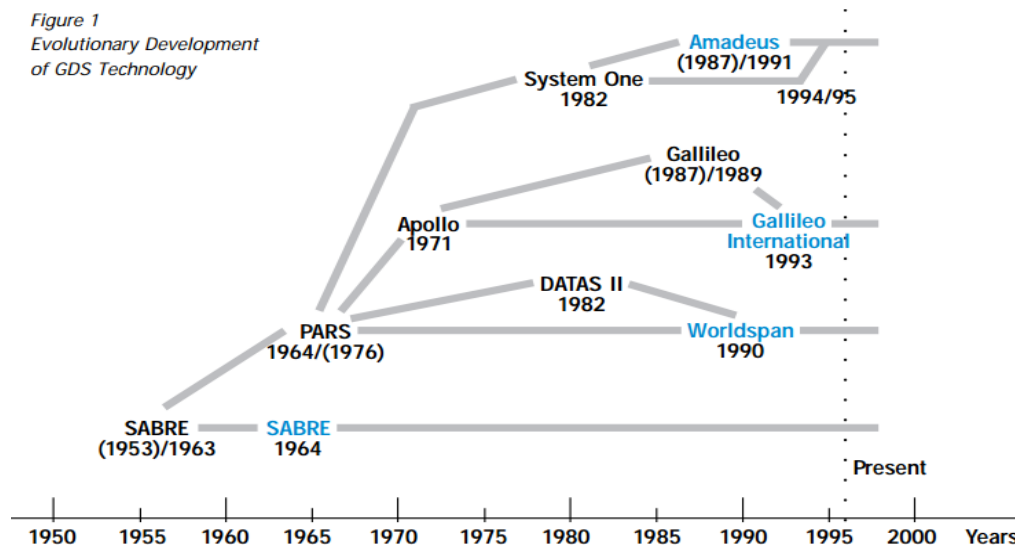


Source: Radulović, 2013, p. 32

Figure 2: Operation of global distribution systems in the tourism sector

The need for these systems appeared both in terms of demand and supply, and from the perspective of the expansion observed in the tourism industry over the last few decades (Sion et al., 2013). These systems are Amadeus, Galileo International, SABER and Worldspan. The evolutionary course of these technologies is illustrated in the following figure, which shows how the technology of a global distribution system was based on the technology of the other.

Figure 1
Evolutionary Development
of GDS Technology



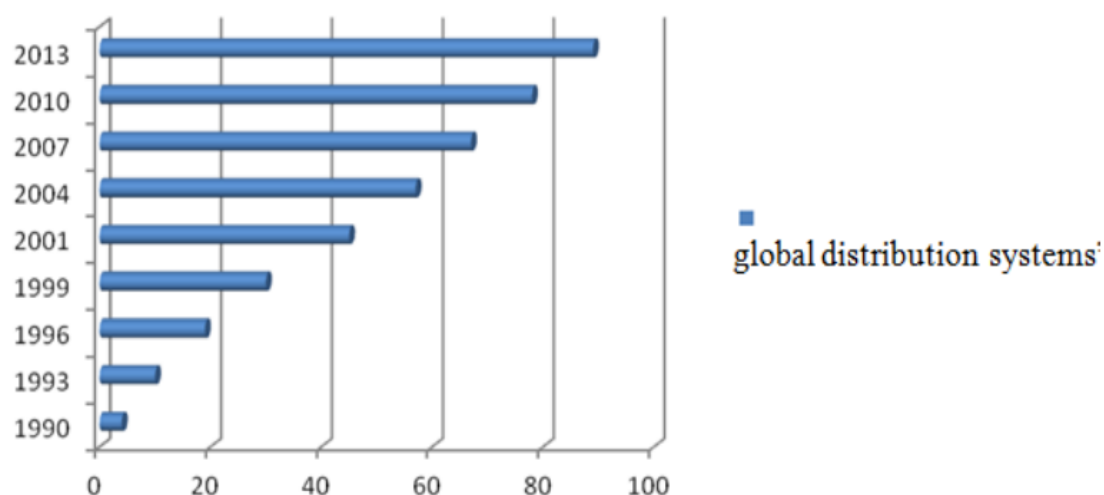
Source: Kärcher, 1996, p. 20

Figure 3: Evolutionary development of GDS

2.4 Benefits of Global Distribution Systems

Global Distribution Systems implement online transactions via a secure server, both between business to business (B2B) and business to customer (B2C). Among the services offered are secure access, dynamic information with automatic renewal, provision and distribution of real-time information, promotion of advertising material, electronic brochures, management and monitoring of reservations, integrated customer management services, etc. The system meets requirements such as: a) distribution and management of tourist products and services with or without intermediaries; b) management of suppliers, wholesalers, service providers and travel agents; c) financial monitoring of sales and supplies; d) management of information files and customer information management. Overall, GDS offer: a) efficient cash management and control; b) increased sales through a detailed description of the offers; c) faster booking process; d) significant reduction in commissioning costs; e) lower communication costs; f) elimination of errors through a user-friendly graphical environment.

Due to the huge benefits they have for tourism businesses, their development is rapid since 1990, as one can see from the figure below, which depicts the percentage of tourist offices in the US that have a GDS terminal.



Source: Sion et al., 2013

Figure 5: Percentage of US tour operators holding a GDS terminal, 1990-2013

2.4.1 Benefits of GDS to tourist business

GDSs undoubtedly improve the operation of tourism businesses, especially hotels, while also contributing to better service provided to tourists. Through distribution systems, hotel operators are able to have access to a global market 24/7/365 at a very low cost, to a wide range of customers. The ability of online booking and the electronic management of the internal operation of each unit are the best way to exploit modern technological applications for the benefit of the customer and the entrepreneur through the efficient sale of the services. Through these systems, hotels entered information about different types of rooms, their description and price according to category in the airline reservation database, and as this information is now available, thousands of agents around the world but also customers can make reservations (Sion et al., 2013). As a result, the tourists - customers are satisfied with the hotel services, which results in an increase in the revenues and the enhancement of corporate image and brand name.

With regard to airlines, GDSs allow the measurement and tracking of three of the most important factors in the aviation industry: travel time, ticket price and availability of seats (Grubestic et al., 2005). Because of this, larger airlines are

members of GDSs. In addition, the owners of a booking system had also generated significant revenues from remittance taxes from rival companies to accommodate flight data through their computerized systems. These revenues were complemented by high taxes on travel agencies to ensure a minimum number of bookings, asking agents a fixed annual tax on the use of the system, and a tax on equipment leasing (Sion et al., 2013). The system also provides the airline with valuable management information that allows the identification of market segments, travel agent efficiency, and new marketing programs (Sion et al., 2013).

An interesting research was conducted by Felicen and Ylagan (2016) regarding the benefits of online reservation systems for the travel agencies. The evaluation of these systems in the operation of tourist offices is based three areas: human, technical, as well as economic. With regard to the human resource, the assessment can be based for example on the development and cultivation of increased skills in the tourist office, the lack of human communication due to the emphasis on the capacity of detention systems, the workload, the provision of a work environment with reduced stress, and the reduction of human errors in ticketing and pricing. The technical dimension consists of the following: difficulty in network connections resulting in a transaction that is not generated by its content, establishing proper interfaces with communication companies, establishing interfaces and communication with other companies, limited capabilities because of the increasing dependence on the system. Finally, the economic dimension encompass high registration costs, improvement of the efficiency and productivity of the tourist office, cost of installing the software, increased number of customers, reduced operating costs, improved customer satisfaction by offering value-added services and high investment costs in training new employees.

2.4.2 Benefits of GDS to customers

The existence of these systems reduces the uncertainty in the choice of clients for travel agencies and tour operators. This means that earlier, if the operator or agency could not meet customer requirements, the latter had the alternative of other offices. However, in markets with a relatively high concentration, such as those controlled by

distribution systems, the alternatives are limited, as there is not much variation in the prices of services and products offered.

It is also argued that global distribution systems facilitate the basic needs of consumers for easy and transparent access to a wide range of information on travel, accommodation, luxury services, current prices and the availability of these services. Consumers also ask for immediate confirmation of the reservation, while requiring information on attractions, travel formalities, and ways of cheap standardized communications with potential providers. Customer satisfaction appears to take place due to the accuracy and relevance of the information and the speed at which demand is processed (Sion et al., 2013).

Through the customer's choice in terms of consumption of tourism services, IT systems and new technologies such as GDSs are able to offer the customer the ability to "control" the system by selecting for example between different travel programs, food in the airplane etc. This is partly due to the competition that exists between the benefits of new technology systems. Thus, the tourist product is more tailor-made, based on the demands and needs of tourists.

3 Social Media in Tourism

3.1 Transformation of tourism sector due to social media

Several researches (Yazdanifard and Yee, 2014; Christou, 2015; Kohli et al., 2015; Hew et al., 2016; Zhang et al., 2016) argue that social media are an important marketing tool for tourist businesses, in terms of engagement, communication and consumer relations. Social networking sites were originally used for entertainment purposes, but increased use of communication technologies over the Internet and information has shifted the way people interact with each other, especially in hospitality and tourism industries. For example, social networking sites, such as Facebook, allow registered users to interact globally and freely with people who have

the same interest through uploading photos, sharing posts, communicating with the organization itself, and with other consumers, commenting and taking answers to their questions (Yazdanifard and Yee, 2014).

Overall, therefore, social media tools are adopted in the context of integrated marketing plans to produce a customer-centered message. With the development of platforms such as LinkedIn, Facebook, Twitter and YouTube, hotel units can be accessed by a potential visitor. Since social media is available to anyone with an internet connection, it is a platform that can be used by the hotel industry to increase brand awareness. Social media are indispensable for the development of new businesses and the sustainability of existing ones in the current competitive and on-line market (Al-Msallam and Alhaddad, 2016).

Apart from the above, it is argued that social media facilitate immediate feedback from customers (Al-Msallam and Alhaddad, 2016). The great importance of social media is that it can influence consumer decisions and lead to a change in their behavior, precisely because of their communication with those who have previously visited this organization and who have experience (Anderson, 2012; Yazdanifard and Yee, 2014). In a Market Metrix survey on Trip Advisor in 2010, visitors' experience of customer ratings became the dominant factor in choosing hotels by tourists, while 51% of survey respondents reported that they included the customer experience 'in choosing hotel organizations (Anderson, 2012). In the same survey, a little more than a quarter (26.5%) of TripAdvisor visits took place over the last five days prior to booking, while the remaining three quarters were equally distributed over the remaining 55 days. This may be an indication of how visitor surveys are intensifying shortly before the final purchase decision is taken. The close proximity (to the market) of the consumer's visit to TripAdvisor may be an indication that user ratings are some of the final and potentially key criteria in the hotel selection process by visitors (Anderson, 2012).

In addition, in order for a tourist business to be successful, it should make decisions based on consumer needs, changes in society and technology development. This not only satisfies consumers, but also strengthens the relationship with customers to ensure that they continue to be customers (customer retention). In addition, it is argued that consumer communication helps businesses to create a positive impression

about a business' image (corporate image) and also build confidence and enhance the relationship with new customers, leading them to loyalty. However, it should be noted that a simple conversation with consumers using standard advertisements will not help in this direction. Conversely, the debate needs to be credible so that consumers can be persuaded and interested in the tourist business's brand and services (Yazdanifard and Yee, 2014). Identifying consumers with the brand is an important determinant of consumer confidence and loyalty to a tourist business. Nevertheless, consumer loyalty to a business depends to a large extent on their positive assessment of products and services, which is again based on their identification with the brand (Fung So et al., 2013).

Overall, social media have now become a preferred low cost marketing tool, which encourages two-way communication between tourism businesses and consumers. Customers react and express their views publicly, and so social media have become more than just a simple marketing tool: they have become a channel that allows the interaction and gives tourism businesses the opportunity to deal with problems and concerns of their customers, which, if done effectively, can make a major contribution to building the brand. In the current economic climate, where many businesses cut marketing budgets, the most successful businesses have shifted from traditional marketing to social media as a means of communicating with consumers, building their brand and generating higher return on investment for each unit they spend on marketing. Unlike traditional marketing channels, social media provide up-to-date and valid real-time information about a business (such as the number of Facebook fans, the number of Twitter followers, and comments and registrations subscriptions on Youtube). Tourism businesses can track the number of conversations that take part in a new product or service they offer and can respond directly to reviews and reviews while they can get information on how customers evaluate their services by evaluating them this way the image of their business and their brand (Seth, 2012).

In this context, social networking sites also contribute to the identification of consumer needs and demands (Callarisa et al., 2012). For example, hospitality companies and tour operators are aware of what consumers want, what their needs are, but also which elements of the hotel did not satisfied them when staying at the hotel or the behavior of staff. This also results in word-of-mouth communication,

which leads to the acquisition of new clients at relatively low cost, but also to the recognition and creation of a good image and brand (Yazdanifard and Yee, 2014). In addition, it is argued that integrated marketing communication, which is greatly enhanced by the development of IT and technology, contributes greatly to the creation and reinforcement of the brand (Seric et al., 2014). In the context of integrated marketing communication, the brand of the tourism business consists of image, perceived quality and consumer belief in the hotel (Seric et al., 2014).

4 Online Reviews

4.1 Impact of online reviews in purchase decision-making

The purchasing behavior of tourists has changed with the development of new technologies and the introduction of various booking websites. These websites, in order to attract the interest and dedication of hotel customers, in general, offer evaluations to help consumers to find services that meet their needs (European Commission, 2014). Online ratings play a key role in consumers' purchasing

decisions. Benefits for the customer include the ability to easily compare tourist businesses, but also to gather more information (Minazzi, 2010).

In addition, the ability of customers to assess the quality of services provided by hotel units is also part of the general discussion of the importance of customer involvement in the improvement of service delivery. In this way, consumers also contribute to the further upgrading and development of quality assurance standards. Standards based on the consensus of all stakeholders, including consumers and addressing their basic needs, will be more relevant to the hotel market. This will enhance consumer confidence in the services provided (ISO, 2011).

In order to provide further assessment information to prospective customers, websites often include quantitative assessments of consumers of a service. Faced with a lot of information about numerous tourist businesses and the need to make a quick and effective decision, customers can use ratings as a way to make estimates without having to search for more information. This can be particularly appealing because people use readily available information to make decisions. Consequently, consumers can turn to ratings as a quick and easy way to evaluate the quality of a hotel's services, especially when confronted with limited or ambiguous information. Therefore, it can be concluded that customers will rely on evaluations at an online site as a means of assessing and evaluating the service provided in the tourist industry (Browning and Sparks, 2013).

An individual's perception that a hotel brand has a good reputation from other tourists (eg ex-clients) leads to an increase in that person's confidence in the organization. Consequently, communication from social media can lead to increased reputation and, therefore, higher consumer confidence (Christou, 2015). Using social media, tourists can express their views on the services provided, the elements and the behavior of the staff in a hotel, meaning that consumers can share their experience. The dynamics of social media virtually strengthens and encourages consumers to express their positive or negative experiences about interacting with a hotel organization, even rating these hotels, thus influencing the purchasing decisions of prospective and potential customers (Alalwan et al., 2017).

It is claimed that tourists show confidence in websites such as Booking.com and TripAdvisor (Verma et al., 2012). In particular, customers who have fulfilled their

initial expectations and who tend to be more satisfied from the services offered them can positively influence the views of future consumers, contributing through their positive experience to the increase of the tourism business' reputation and brand (Hew et al., 2016). Most of the tourists seek information and comments on social media (Verma et al., 2012). In addition, it is argued that consumer confidence in the reviews and advice of other travelers overrides the views and advice of travel agents (Ong, 2012).

Developing and maintaining customer brand awareness will enhance the knowledge of the brand, resulting in a more intimate and positive response to this brand (Xu and Chan, 2010). Apart from the above, brand understanding is defined both by the company's branding and external brand communication, such as advertising, promotions, publicity and word of mouth, which is facilitated and enhanced by various means of social networking (Fung So and King, 2010). Additionally, the meaning of a particular brand is influenced by the customer's immediate experience, while at the same time it depends on internally focused promotions such as employee behavior, overall design and service structure, and the ability to deliver brand's commitments (Xu and Chan, 2010).

However, the subjectivity of the hotel quality assessment affects customer feedback. One question raised in this regard concerns the criteria for consumer assessments. Each website has its own classification system based on different requirements that do not necessarily coincide with the official requirements of the national governments of the countries where the hotel is located. As a result, web site evaluation sometimes comes in contradiction with nationally-based rating systems, but also to other web sites. Therefore, these ratings, coupled with customer feedback, are confusing, as the necessary information on rating standards may not provided. In addition, sometimes the situation is further complicated by the use of a symbol used by other official rating systems (Minazzi, 2010).

4.2 The phenomenon of fake online reviews

Various travel sites such as TripAdvisor.com or Booking.com allow users to filter the information they are looking for, based on the features they are interested in. The

popularity of these platforms is largely based on the availability of a large amount of customer reporting, which is considered more reliable than discriminatory advertising campaigns. The relevant literature highlights the positive impact of ratings on consumer purchasing decisions and hence on sales and revenue of a business, as discussed in previous sections. Nevertheless, ratings are also susceptible to a breach by entrepreneurs who attempt to manipulate the information available by publishing either false positive reviews of themselves or false negative criticisms about their competitors (Lappas et al., 2016).

Therefore, an important issue referring to customer reviews is the issue of fake reviews. The reason is that these assessments have significant negative impacts on both consumers and businesses themselves (Valant, 2015; Lappas et al., 2016). Misleading or false ratings undermine consumer confidence in the integrity of ratings on the internet and in the brand. A fake assessment can be defined as a positive, neutral or negative critique that is not honest and does not involve the unbiased opinion of the actual consumer or does not reflect a consumer's actual experience of a product, service or business. False ratings affect not only individual consumers but also eliminate consumer confidence in the online marketplace. Reducing the overall quality of ratings and losing consumer confidence can lead to reduced competition on the market if consumers only trust vendors with significant presence and established reputation. Another danger is the development of the so-called 'lemons market': when buyers are unable to distinguish between quality products or services and possibly defective or inferior (i.e. 'lemons'), competition may suffer. It is argued that this asymmetry of information between buyers and sellers can lead to a decline in prices and quality in general, leading to a "lemon market", and therefore to adverse conditions in the tourism sector (Valant, 2015).

According to the UK Competition and Markets Authority, there are two types of fake ratings: a) those who make false, negative claims about an experience with a product, service or business; and b) make false, positive evaluations. In its review, the European Commission distinguishes between: (1) objectively inaccurate evaluations; (2) evaluations that are not genuine but have been drawn up by consumers or other parties for the purpose of deception; and (3) misleading advertising and unfair marketing practices by supervisors or others. It also clarifies that, in principle, false criticisms can be traced to four sources: (a) consumers (deliberately, self-employed or

misinterpreted because they have unrealistic expectations for products and services they evaluate); (through online advertising agencies) or indirectly (through e-commerce organizations or through the coupling of motivational critics such as discounts, gifts, gifts, etc.), c) web site administrators (with systematic deletion of negative evaluations or other partisan manipulation of critics) and d) e-reputation services to help companies manage their reputation online (Valant, 2015).

According to different estimates, fake reviews account for between 1% and 16% of all consumer ratings, but attempting to accurately analyze them is problematic because of their illegal nature and the absence of a common standard for their classification as counterfeit. A 2015 Yelp fraud survey identified up to 16% of all ratings as suspicious, ie potentially counterfeit (Valant, 2015), while Lappas et al. (2016) report that fake ratings range from 15% to 30%. According to estimates by the French Directorate-General for Competition, Consumer Affairs and Repression of Fraud, false online evaluations in all areas in 2013 may have accounted for up to 45% of all online reviews. With 150 million consumer ratings and opinions covering over 3.7 million tourist businesses found in 2013 only on TripAdvisor, it is difficult to test and detect counterfeit online ratings (Valant, 2015).

5 Method

This chapter provides the details for the methodology that has been used in order to conduct the present study. More precisely, the contents of this chapter are the following: the methodology used, the methodological instruments, the sample recruited, the ethical guidelines followed and the methods for data analysis.

5.1 Methodology

Methodology is defined as “the philosophy or the general principle: which is used to guide the whole research (Dawson, 2009, p. 14). According to another definition, “Research methodology consists of the assumptions, postulates, rules, and methods - the blueprint or roadmap - that researchers employ to render their work open to analysis, critique, replication, repetition, and/or adaptation and to choose research methods” (Given, 2008, p. 516). Consequently, methodology is the approach of studying the topic under research, the ethical guidelines, as well as the limitations of the research.

There are two research methodologies: qualitative and quantitative. Qualitative research methodology aims at exploring behaviors, attitudes and experiences, through their in-depth opinions (Dawson, 2009). Quantitative analysis is related to positivism, since the latter regard the phenomena as simple and homogeneous, compared to the qualitative research, which is based on the different experiences, behaviors and attitudes that shape participants’ points of view (Given, 2008). Qualitative research focuses on a specific issue and aims to generate theory from the research conducted to various participants (Greener, 2008). On the other hand, quantitative methodology aims at generating statistics, through the opinions of a large number of participants (Dawson, 2009). Quantitative research tries to test the hypothesis stated as they derive from the theory (Greener, 2008).

Based on the characteristics of each research methodology and the aim of the present research, both qualitative and quantitative methodologies will be used. More precisely, through the use of both of them, the researcher will be able to capture in

more details how social media, online reviews and reservation systems have affected the tourism industry, not only based on the view of consumers, but also based on the opinions of tourism managers and especially hotel managers. The use of a mixed method approach exploits the advantages of both methodologies, decrease the risk that exist from the disadvantages of each methodology, while at the same time it allows the production of more reliable and robust outcomes, based on the characteristic of data triangulation (Dawson, 2009).

5.2 Methodological instruments

Within the framework of qualitative methodology, in-depth interviews will be used. Through the interview, the researcher has the opportunity to construct a conceptual concept through the interaction with the participants in the research. In addition, the research can acquire in-depth data concerning the views, attitudes, beliefs and perceptions of participants, based on their personal values, beliefs and experiences. In this way, the research has the possibility of a thorough and comprehensive study and interpretation of the meaning and the importance attached by the respondents to the phenomenon under consideration (Greener, 2008; Given, 2008; Dawson, 2009). In-depth interviews are used “in order to discover and explore the range of variation among individuals and to find patterns of similarity and difference” (Given, 2008, p. 524).

In the context of quantitative research, the selected methodological tool is the questionnaire. The questionnaire contributes to the collection of data from a large sample of individuals at the same time, regardless of its geographical dispersion and regardless of the physical presence of the researcher (Dawson, 2009). Indeed, the questionnaire can be distributed to a large number of people, not necessarily concentrated in the same geographical area, which can be completed by the respondents themselves, without the physical presence of the researcher. In addition, the questionnaire allows the statistical process of data and the clustering of the answers given by the respondents, providing information about the general tendencies.

5.3 Sample

The choice of the sample in a research is crucial, since the opinions expressed by the participants in the research are important in generating conclusions and answering the research questions. During the sampling procedure, the first questions that should be answered by the researcher is which sampling method will be employed: probability or purposive sample. In the probability sample, all people within the research population have the same possibility of being selected. On the contrary, in the purposive sample, the researcher employs only those people who are relevant to the topic under discussion, since the aim is not the generalization of the results, but rather the description (Greener, 2008; Dawson, 2009). For this reason, purposive sample has been chosen for the conduct of this research and more precisely convenient sampling. Convenient sampling is a non-random sample consisting of a sample of individuals meeting specific criteria, such as geographical proximity, their availability in taking part in the research at a given time period, their willingness to participate in the survey, and the ease of access to them on behalf of the researcher (Etikan et al., 2015).

More precisely, the sample of the present research consists of five (5) hotel managers – in the case of qualitative research – and 197 hotel consumers – in the case of quantitative research. The case of hotels was selected since the researcher had easier and immediate access. Through their opinions the researcher could give answer to the general objective of this study, which is the examination of how the digitalization of the tourism sector via online booking systems, social media usage and online reviews has transformed this sector. The opinions of both managers and consumers will allow to draw conclusions about the effect of digital transformation upon tourist business and consumers' purchase decision, enabling the construct of a bigger picture concerning this subject.

5.4 Procedure

In order for the data collected to be reliable, it is quite important to explain to the respondents the aim and the objectives of the research, how their participation will facilitate the conduct of the research, and that no harm will be done to any of them. At

the same time, it is very important for the participants to know the identity of the researcher, and how the data will be used, in order a climate of trust between these two parties be created. Further, an extremely important issue is to ensure the anonymity of the participants and the confidentiality of the data (Simons, 2005; Dawson, 2009). Finally, it is very important to follow the principle of objectivity (Greener, 2008). All the above are part of the informed consent of the participants (Simons, 2005; Dawson, 2009). Thus, the researcher informed the participants about the following issues: a) their anonymity and the fact that no personal information (e.g. address, telephone) will be used; b) the respect of data confidentiality and that the data will be used exclusively for this research; c) how the data will be collected, and how they will contribute to the purpose of the research; d) the estimated time for completing the question and the duration of the interview; e) the fact that the data will be analyzed without any conflict of interest on behalf of the research and without the intent of bias in favor of a particular outcome.

The analysis of the data collected via the questionnaire will be done using the Statistical Package for Social Sciences (SPSS) version 21.0. Descriptive statistics, via percentages/frequencies and means/standard deviation, will be used in order to group and analyze consumers' opinions about online booking systems, social media and online reviews (Blessing and Chakrabarti 2009). The analysis of the data collected via the interview will be based upon the comparison of the opinions expressed by the participants in the research (Dawson, 2009). This means that, for each question, the answers obtained by the subjects of the research will be presented, and analyzed, in comparison to the answers of other participants. Overall, the results of the research will be discussed accordance to the bibliography and what has been stated in the previous chapter, which constitute the secondary background research. As Greener (2008) points out, there is a strong linkage between literature review and research, since the researcher can observe whether there are any differences between the findings of one's research and previous studies in the same field, or what the theory postulates about the specific subject under examination.

6 Results

6.1 Quantitative analysis

The following three graphs depict the demographic profile of the consumers who took part in the research. From the first graph one can see that the majority of consumers are females, since they represent the largest part of the sample (57.4%) compared to males (42.6%).

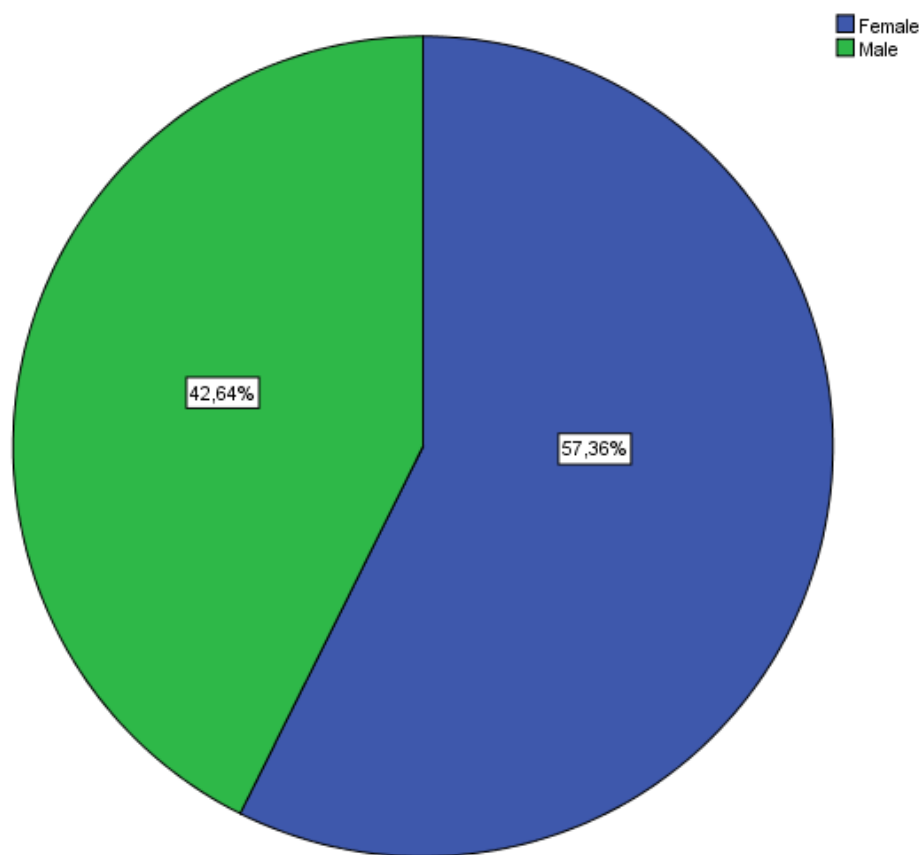


Figure 6. Gender of the participants

From the figure below one can see that most of the participants in the research are up to 30 years (64.5%). A large percentage is 31-40 years old (20.8%), followed

by those who are 41-50 years old (11.7%). Only a small percentage is 51-60 years old (2.5%) and only one person is over 60 years old (0.5%).

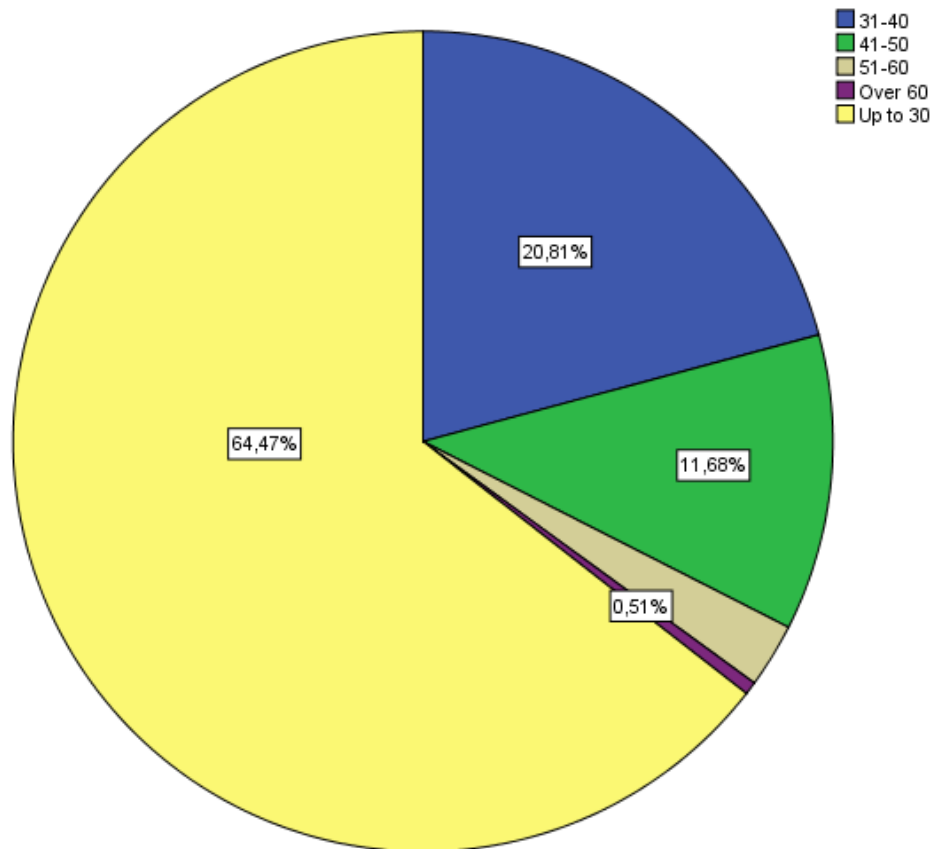


Figure 7. Age of the participants

The last figure indicates that the majority of the participants (67%) have a master degree, followed by those who have a university degree (23.9%). A small percentage (3.6%) have a PhD, an even smaller have completed only vocational education (3%) and even less have completed only secondary education (2.5%).

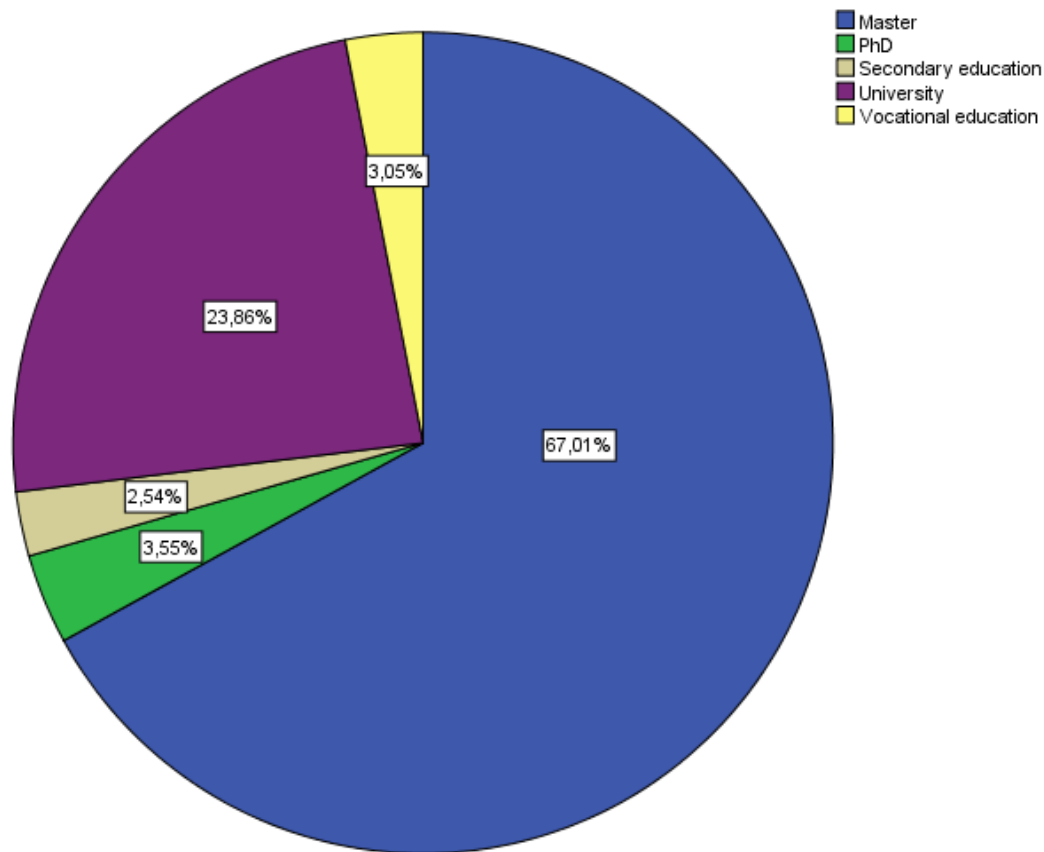


Figure 8. Educational background of the participants

The following two graphs depict the means of participants' opinions about booking systems. From the figure below it can be seen that most of the participants in the research prefer to use online booking systems in third party platforms, such as Booking and Trivago ($M=4.25$, $SD=1.018$). The second choice is again online booking through the official site of the tourist business ($M=3.46$, $SD=1.149$). Tour operators and tour agencies have the lowest preference from the participants, since they are either not used at all or used only a little ($M=1.43$, $SD=0.796$ and $M=1.78$, $SD=1.009$ respectively).

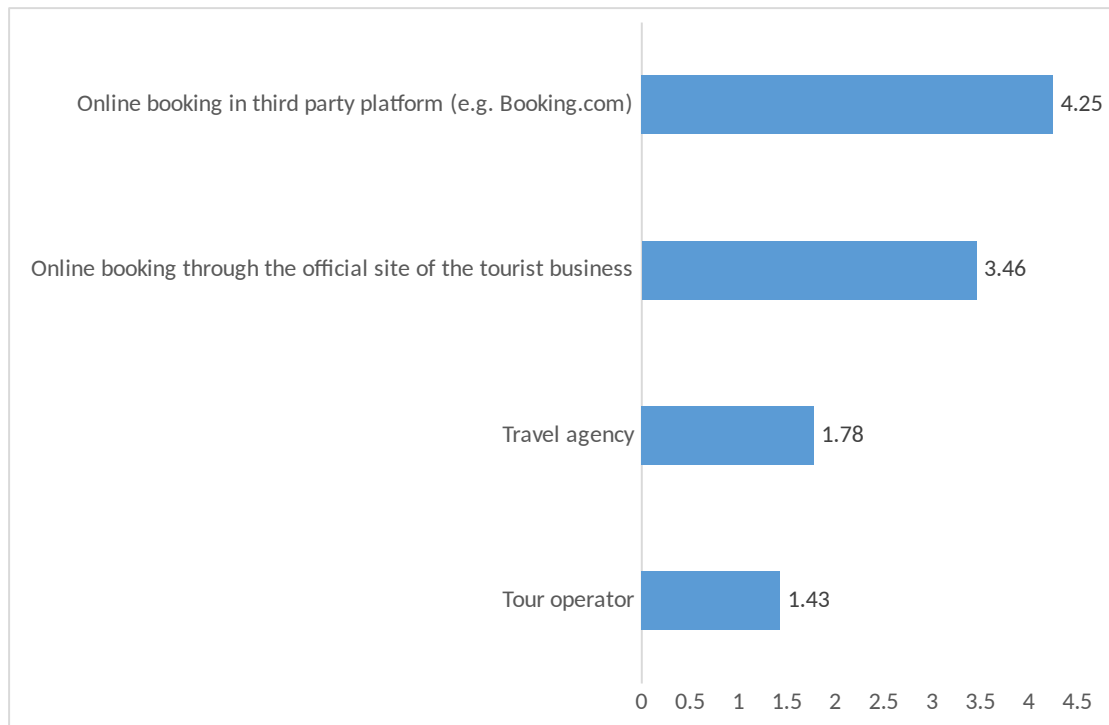


Figure 9. Participants' opinions about booking channels used

The following figure depicts participants' opinions about online booking systems and more precisely their benefits. As it can be seen from the figure, most of the consumers who took part in the research believe that through the use of online booking systems they can compare between various tourist providers ($M=4.31$, $SD=0.852$), they can design their own tailor-made travel ($M=4.09$, $SD=0.946$) and that they have more flexibility ($M=4.12$, $SD=0.904$). At a smaller extent they believe that through online booking systems they can obtain more information ($M=3.92$, $SD=0.936$).

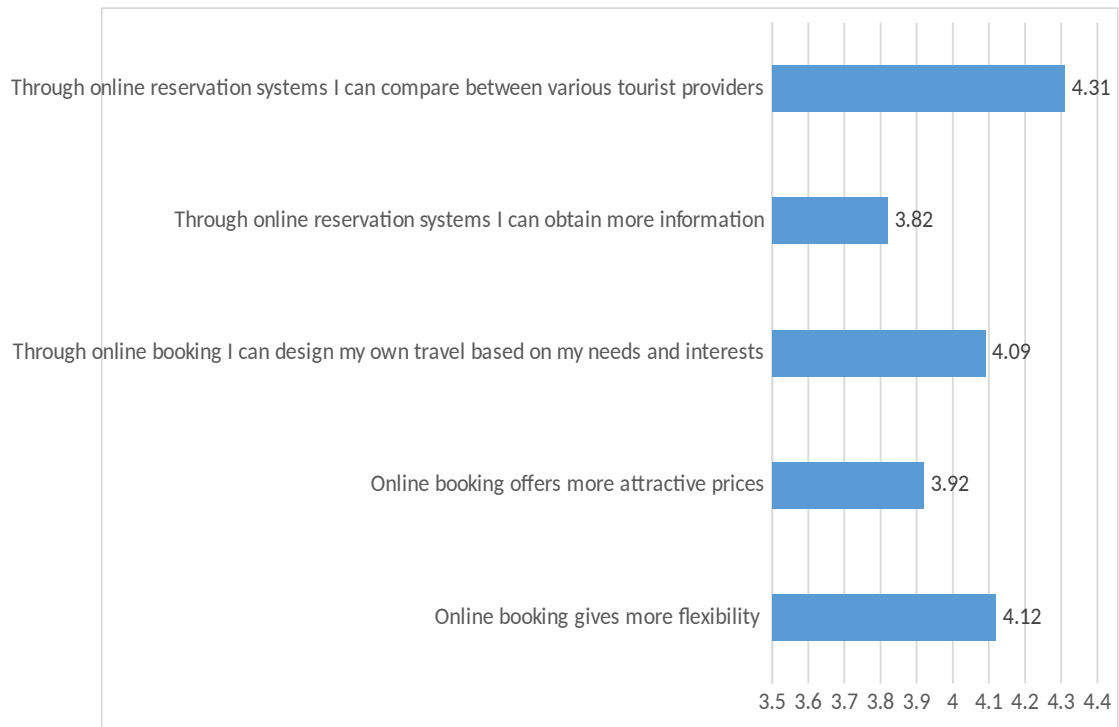


Figure 10. Participants' opinions about the benefits of online booking systems

The following three questions try to examine participants' opinions about social media. In the table below one can see which social media the participants use in order to be in touch with tourism businesses. As it can be seen, none of the social media are used to so great extent from the consumers in order to have contact with businesses operating in the tourism sector. However, from those, Facebook is the primary social media used ($M=3.07$, $SD=1.368$).

Table 1. Social media used from the participants in order to be in touch with tourism businesses

	N	Mean	Std. Deviation
Facebook	197	3,07	1,368
Twitter	197	1,32	0,793
Instagram	197	2,20	1,417
YouTube	197	1,99	1,227
Flickr	197	1,19	0,639
Foursquares	197	1,41	0,902
Pinterest	197	1,44	0,853

LinkedIn	197	1,61	1,057
Blogs	197	2,45	1,401
Other	197	2,39	1,462

Consumers tend to strongly believe that social media presence help tourist businesses to get feedback from reviews and rankings ($M=4.31$, $SD=0.938$), and to create a community ($M=4.05$, $SD=0.944$).



Figure 11. Participants' opinions about the benefits for a tourist business from a social media presence

In addition, 31% and 30.5% of the participants tend to believe that the presence of a tourist business in social media affect enough and much their decision-making process. However, 8.1% pointed out that their decision making process is affected very much, and 6.5% that this process is not affected at all.

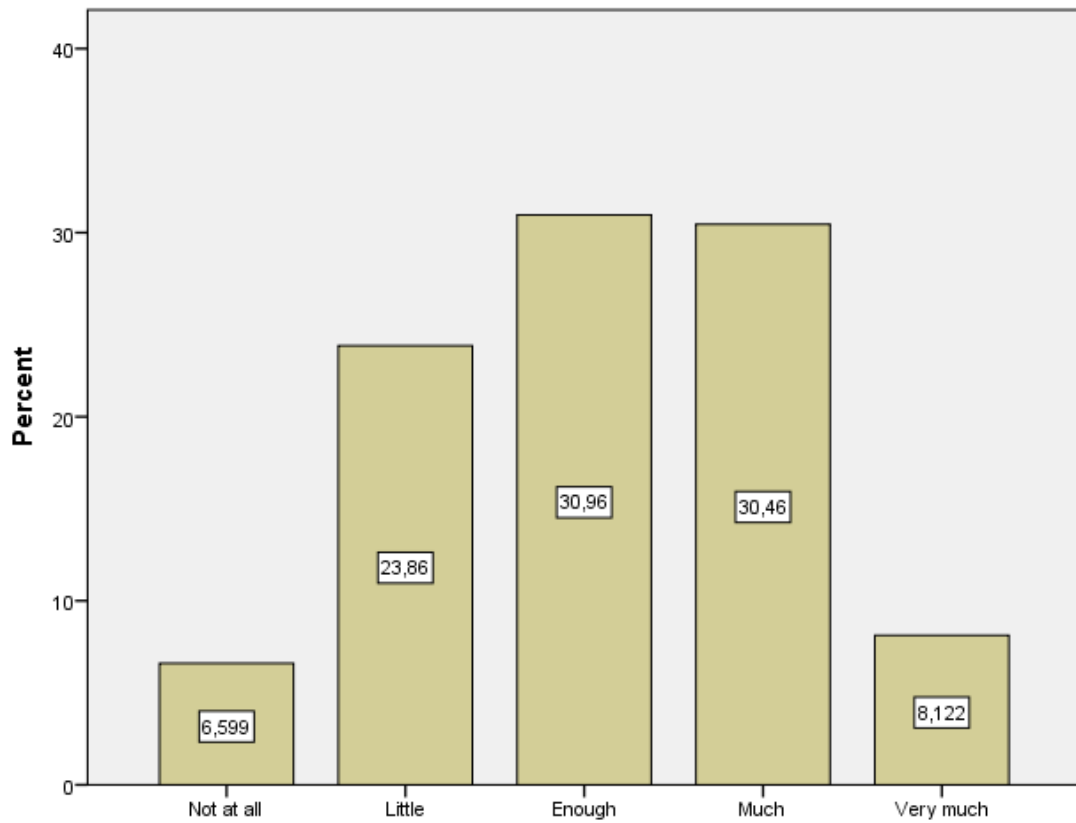


Figure 12. Extent to which the presence of a tourist business in social media affect participants' decision-making process

The fourth section of the questionnaire which is analysed below refers to online reviews. From the figure below it can be seen that most of the participants (33.5%) only a little participate in social communities in order to make reviews and comments about a tourist business after their tourist experience, compared to 14.7% and 7.6% who participate much and very much respectively.

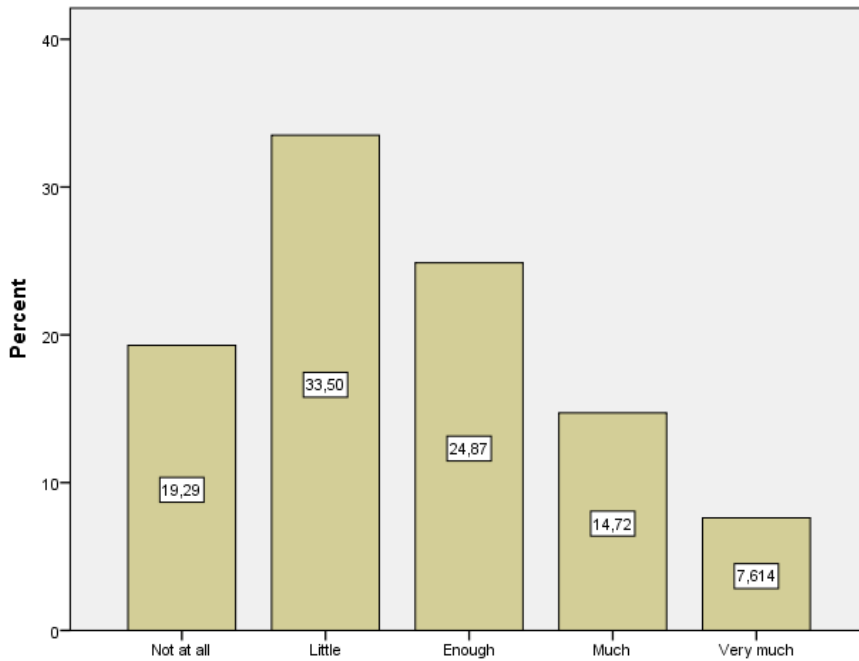


Figure 13. Percentage of participants who participate in social communities in order to make reviews and comments about a tourist business after their tourist experience

From the following figure it can be seen that most of the participants in the research (75.12%) trust reviews, rankings and ratings concerning a tourist business in a social media platform enough and much.

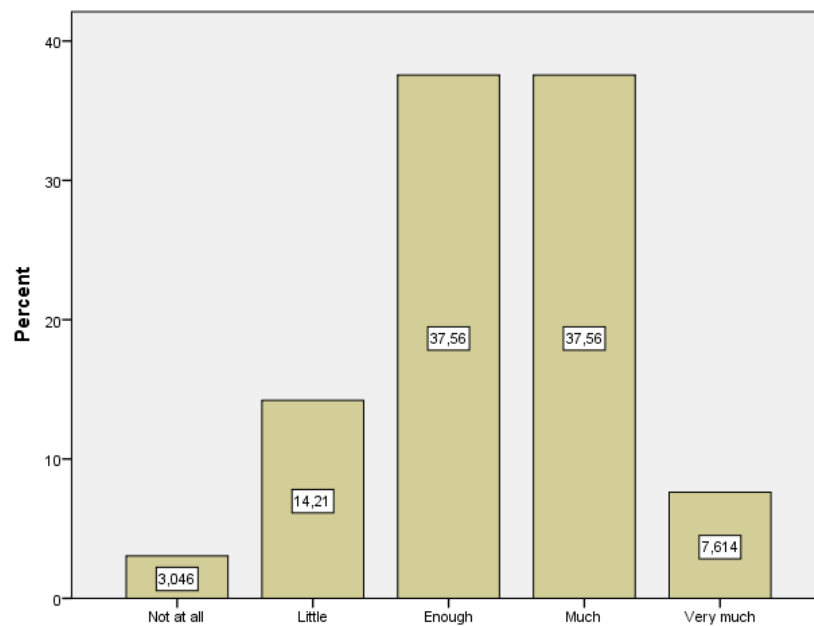


Figure 14. Extent to which participants trust reviews, rankings and ratings concerning a tourist business in a social media platform

The reviews of other customers in various social media platforms affect enough participants' decision-making process (42.13%).

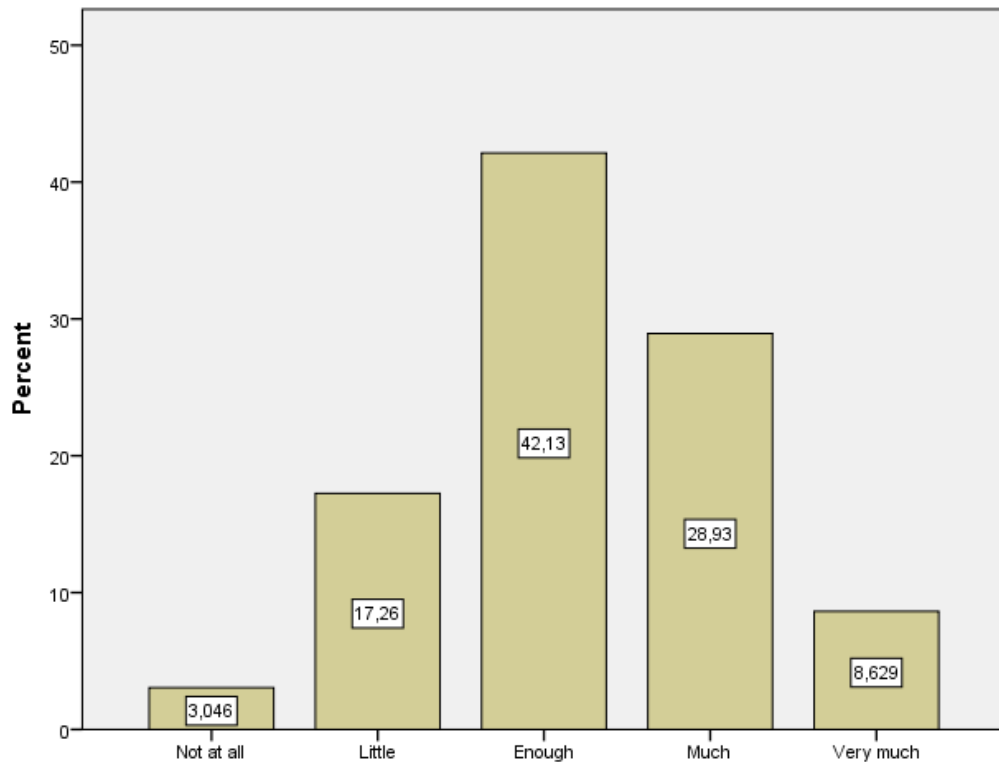


Figure 15. Extent to which reviews of other customers in various social media platforms affect enough participants' decision-making process

Similarly, most of the consumers who took part in the research stated that they are enough aware that perhaps fake online reviews may influence their decision making (42.13%).

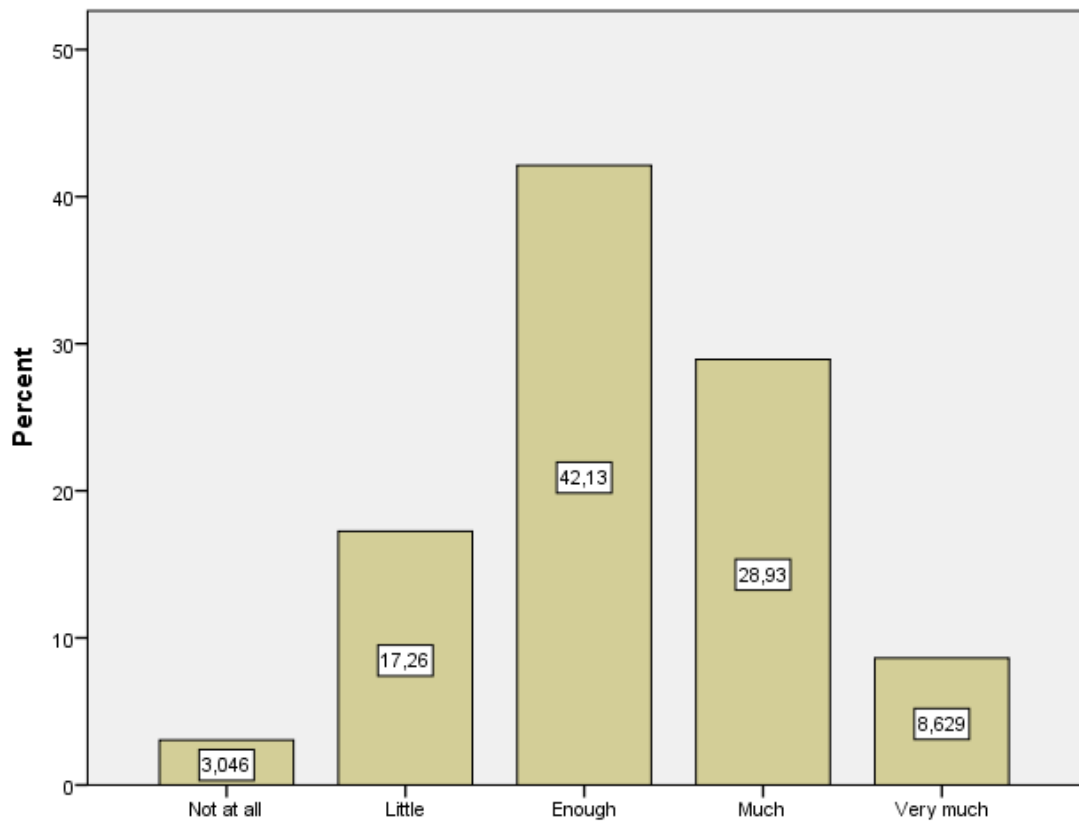


Figure 16. Extent to which the participants are aware that perhaps fake online reviews may influence their decision making

Finally, there were some questions about the digital future of tourism. From the table below it can be seen that consumers would be mostly interested in mobile electronic maps and guides ($M=4.19$, $SD=0.944$). At least interested they would be in a game developed for tourists providing experiences ($M=2.88$, $SD=1.345$).

Table 2. Technologies in which participants would be interested

	Mean	Standard deviation
Mobile application that would allow me to share my visit with other people (e.g. see where others are, communicate, use hypermedia related to the locations in the destination, and share information about the visit)	3.15	1.311
Mobile electronic guides and maps	4.19	0.944
Mobile systems presenting the positions of tourist attractions by overlaying icons representing attractions onto maps	3.92	0.925
Mobile 'travelblog' system allowing the tourists to	3.09	1.101

communicate and discuss their visit when they got home		
System that would allow the destination to monitor tourist flows	3.17	1.121
A global platform for tourism to generate information and provide cloud services to tourist businesses	3.30	1.128
A transmedia storytelling tour guide	3.37	1.106
A game developed for tourists providing experiences	2.88	1.345

Last but not least, from the figure below, it can be seen that in general, participants are much in favour of using so much technology in the sector of tourism as it will assist tourists businesses to provide products/services of high quality and customized.

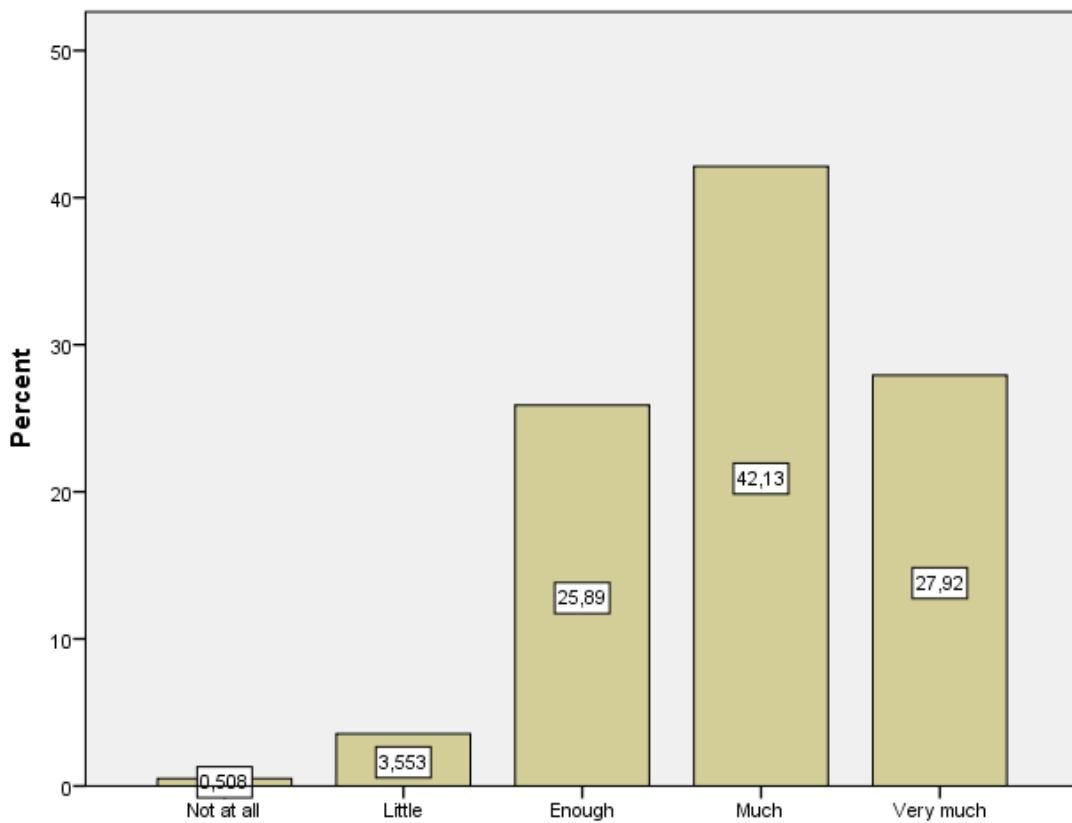


Figure 17. Extent to which participants are in favour of using so much technology in the sector of tourism

In order to better understand consumers' opinions about the effect of online booking systems, social media, online reviews and in general the digital future of tourism, an in depth analysis is needed, based on the demographic profile of the

respondents. The following table presents the differences that exist in consumers' opinions on the basis of the gender. For this, the independent samples t-test was used.

Table 3. Differences in consumers' opinions based on gender

	Gender	N	Mean	Std. Deviation	p-value
Which of the following channels do you use when booking a hotel/flight etc:					
Tour operator	Male	84	1,43	,716	0.974
	Female	113	1,42	,854	
Travel agency	Male	84	1,80	1,039	0.849
	Female	113	1,77	,991	
Online booking through the official site of the tourist business	Male	84	3,49	1,167	0.743
	Female	113	3,43	1,141	
Online booking in third party platform (e.g. Booking.com)	Male	84	4,14	1,066	0.188
	Female	113	4,34	,978	
What are the benefits of online booking systems:					
Online booking gives more flexibility	Male	84	4,00	,982	0.119
	Female	113	4,20	,836	
Online booking offers more attractive prices	Male	84	3,86	,933	0.390
	Female	113	3,97	,940	
Through online booking I can design my own travel based on my needs and interests	Male	84	3,94	1,022	0.062
	Female	113	4,19	,875	
Through online reservation systems I can obtain more information	Male	84	3,86	,959	0.669
	Female	113	3,80	1,001	
Through online reservation systems I can compare between various tourist providers	Male	84	4,23	,883	0.237
	Female	113	4,37	,826	
Which social media platforms do you use in order to be in touch with tourism business:					
Facebook	Male	84	2,87	1,333	0.074
	Female	113	3,22	1,381	
Twitter	Male	84	1,31	,821	0.815
	Female	113	1,34	,775	
Instagram	Male	84	1,99	1,294	0.067
	Female	113	2,35	1,488	
YouTube	Male	84	2,00	1,130	0.960
	Female	113	1,99	1,299	

Flickr	Male	84	1,18	,519	0.862
	Female	113	1,19	,718	
Foursquares	Male	84	1,49	1,012	0.288
	Female	113	1,35	,810	
Pinterest	Male	84	1,39	,836	0.537
	Female	113	1,47	,867	
LinkedIn	Male	84	1,58	1,032	0.768
	Female	113	1,63	1,079	
Blogs	Male	84	2,29	1,349	0.152
	Female	113	2,58	1,432	
Other	Male	84	2,36	1,494	0.781
	Female	113	2,42	1,444	
What are the benefits for a tourist business from a social media presence:					
To build brand name	Male	84	3,76	1,060	0.026
	Female	113	4,08	,918	
To build consumer loyalty	Male	84	3,32	,894	0.002
	Female	113	3,77	1,077	
To influence consumer purchase intention	Male	84	3,64	,965	0.009
	Female	113	4,01	,959	
To create a community	Male	84	3,93	,954	0.134
	Female	113	4,13	,931	
To attract new advertisers	Male	84	3,73	1,057	0.166
	Female	113	3,93	,979	
To enhance word of mouth	Male	84	3,69	1,053	0.036
	Female	113	3,99	,940	
To get feedback (Reviews and rankings)	Male	84	4,19	1,070	0.124
	Female	113	4,41	,820	
To submit ideas for new services/products/ discounts/offers	Male	84	3,58	1,044	0.040
	Female	113	3,89	1,038	
To obtain general information about costumers' needs and wants	Male	84	3,76	,977	0.244
	Female	113	3,93	1,006	
To obtain information about customers' opinion on service quality	Male	84	3,82	,907	0.027
	Female	113	4,12	,923	
To conduct customer researches	Male	84	3,43	1,079	0.065
	Female	113	3,72	1,081	
To what extent the presence of a tourist business in social media affect your decision-making process	Male	84	2,87	1,095	0.009
	Female	113	3,27	1,009	
	Male	84	2,56	1,144	0.845

Do you participate in social communities in order to make reviews and comments about a tourist business after your tourist experience	Female	113	2,59	1,207	
To what extent do you trust reviews, rankings and ratings concerning a tourist business in a social media platform	Male	84	3,18	,933	0.054
	Female	113	3,43	,895	
To what extent the reviews of other customers in various social media platforms affect your decision-making process	Male	84	3,17	,980	0.427
	Female	113	3,27	,909	
Are you aware that perhaps fake online reviews may influence your decision making	Male	84	3,69	1,130	0.779
	Female	113	3,65	1,077	
To what extent would you be interested in the following technologies:					
Mobile application that would allow me to share my visit with other people	Male	84	3,05	1,405	0.359
	Female	113	3,22	1,237	
Mobile electronic guides and maps	Male	84	4,17	,980	0.738
	Female	113	4,21	,921	
Mobile systems presenting the positions of tourist attractions by overlaying icons representing attractions onto maps	Male	84	3,92	,908	0.925
	Female	113	3,93	,942	
Mobile 'travelblog' system allowing the tourists to communicate and discuss their visit when they got home	Male	84	2,99	1,092	0.282
	Female	113	3,16	1,107	
System that would allow the destination to monitor tourist flows	Male	84	3,18	1,153	0.949
	Female	113	3,17	1,101	
	Male	84	3,18	1,142	0.195

A global platform for tourism to generate information and provide cloud services to tourist businesses	Female	113	3,39	1,114	
A transmedia storytelling tour guide	Male	84	3,30	1,128	0.426
	Female	113	3,42	1,092	
A game developed for tourists providing experiences	Male	84	2,87	1,387	0.899
	Female	113	2,89	1,319	
In general, are you in favour of using so much technology in the sector of tourism as it will assist tourists businesses to provide products/services of high quality and customized	Male	84	3,90	,873	0.679
	Female	113	3,96	,839	

The following table presents the differences that exist in consumers' opinions on the basis of their age. For this, one-way Anova analysis was used. Age seems to influence to a moderate extent consumers' opinions about the changes that have occurred in the tourism sector due to technology.

Table 4. Differences in consumers' opinions based on the age

		Mean Square	F	Sig.
Which of the following channels do you use when booking a hotel/flight etc:				
Tour operator	Between Groups	,622	,981	0,419
	Within Groups	,634		
	Total			
Travel agency	Between Groups	5,554	6,011	0,000
	Within Groups	,924		
	Total			
Online booking through the official site of the tourist business	Between Groups	2,391	1,842	0,122
	Within Groups	1,299		
	Total			
Online booking in third party platform (e.g. Booking.com)	Between Groups	1,139	1,100	0,358
	Within Groups	1,035		
	Total			
What are the benefits of online booking systems:				
Online booking gives more flexibility	Between Groups	3,183	4,141	0,003
	Within Groups	,769		
	Total			
	Between Groups	1,477	1,709	0,150

Online booking offers more attractive prices	Within Groups	,864		
	Total			
Through online booking I can design my own travel based on my needs and interests	Between Groups	,825	,920	0,454
	Within Groups	,897		
	Total			
Through online reservation systems I can obtain more information	Between Groups	2,054	2,184	0,072
	Within Groups	,940		
	Total			
Through online reservation systems I can compare between various tourist providers	Between Groups	,382	,522	0,720
	Within Groups	,732		
	Total			
Which social media platforms do you use in order to be in touch with tourism business:				
Facebook	Between Groups	3,611	1,967	0,101
	Within Groups	1,836		
	Total			
Twitter	Between Groups	2,105	3,521	0,008
	Within Groups	,598		
	Total			
Instagram	Between Groups	3,306	1,670	0,158
	Within Groups	1,979		
	Total			
YouTube	Between Groups	,448	,293	0,882
	Within Groups	1,527		
	Total			
Flickr	Between Groups	,085	,204	0,936
	Within Groups	,415		
	Total			
Foursquares	Between Groups	1,276	1,587	0,179
	Within Groups	,804		
	Total			
Pinterest	Between Groups	1,240	1,732	0,145
	Within Groups	,716		
	Total			
LinkedIn	Between Groups	2,722	2,513	0,043
	Within Groups	1,083		
	Total			
Blogs	Between Groups	4,607	2,414	0,050
	Within Groups	1,908		
	Total			
Other	Between Groups	1,207	,560	0,692
	Within Groups	2,157		

	Total			
What are the benefits for a tourist business from a social media presence:				
To build brand name	Between Groups	1,468	1,512	0,200
	Within Groups	,971		
	Total			
To build consumer loyalty	Between Groups	1,540	1,480	0,210
	Within Groups	1,041		
	Total			
To influence consumer purchase intention	Between Groups	2,084	2,242	0,066
	Within Groups	,929		
	Total			
To create a community	Between Groups	2,089	2,413	0,050
	Within Groups	,866		
	Total			
To attract new advertisers	Between Groups	,323	,308	0,872
	Within Groups	1,046		
	Total			
To enhance word of mouth	Between Groups	1,183	1,192	0,316
	Within Groups	,993		
	Total			
To get feedback (Reviews and rankings)	Between Groups	1,259	1,444	0,221
	Within Groups	,872		
	Total			
To submit ideas for new services/products/ discounts/offers	Between Groups	,348	,312	0,870
	Within Groups	1,117		
	Total			
To obtain general information about costumers' needs and wants	Between Groups	1,295	1,317	0,265
	Within Groups	,984		
	Total			
To obtain information about customers' opinion on service quality	Between Groups	,442	,511	0,728
	Within Groups	,866		
	Total			
To conduct customer researches	Between Groups	1,247	1,057	0,379
	Within Groups	1,180		
	Total			
To what extent the presence of a tourist business in social media affect your decision-making process	Between Groups	1,882	1,691	0,154
	Within Groups	1,113		
	Total			
	Between Groups	2,952	2,178	0,073
	Within Groups	1,355		

Do you participate in social communities in order to make reviews and comments	Total			
	Between Groups	4,643	6,079	0,000
	Within Groups	,764		
To what extent do you trust reviews, rankings and ratings concerning a tourist business in a social media platform	Total			
	Between Groups	1,756	2,035	0,091
	Within Groups	,863		
To what extent the reviews of other customers in various social media platforms affect your decision-making process	Total			
	Between Groups	1,954	1,645	0,165
	Within Groups	1,188		
Are you aware that perhaps fake online reviews may influence your decision making	Total			
	Between Groups	1,954	1,645	0,165
	Within Groups	1,188		
To what extent would you be interested in the following technologies:				
Mobile application that would allow me to share my visit with other people	Between Groups	1,758	1,024	0,396
	Within Groups	1,717		
	Total			
Mobile electronic guides and maps	Between Groups	3,137	3,715	0,006
	Within Groups	,844		
	Total			
Mobile systems presenting the positions of tourist attractions by overlaying icons representing attractions onto maps	Between Groups	,805	,939	0,442
	Within Groups	,857		
	Total			
Mobile 'travelblog' system allowing the tourists to communicate and discuss their visit when they got home	Between Groups	2,315	1,947	0,104
	Within Groups	1,189		
	Total			
	Between Groups	1,859	1,495	0,205
	Within Groups	1,243		

System that would allow the destination to monitor tourist A global platform for tourism to generate information and provide cloud services to tourist businesses	Total			
	Between Groups	3,345	2,722	0,031
	Within Groups	1,229		
A transmedia storytelling tour guide	Total			
	Between Groups	2,619	2,192	0,071
	Within Groups	1,195		
A game developed for tourists providing experiences	Total			
	Between Groups	5,727	3,318	0,012
	Within Groups	1,726		
In general, are you in favour of using so much technology in the sector of tourism as it will assist tourists businesses to provide products/services of high quality and customized	Total			
	Between Groups	,484	,663	0,618
	Within Groups	,730		

The last table presents the differences that exist in consumers' opinions on the basis of their educational background. For this, one-way Anova analysis was used. There are not so many differences based on consumers' education, which means that this demographic characteristic is not so important in order to influence to a great extent consumers' opinions about the changes that have been made in the tourism sector due to technology.

Table 5. Differences in consumers' opinions based on their educational background

		Mean Square	F	Sig.
Which of the following channels do you use when booking a hotel/flight etc:				
Tour operator	Between Groups	,404	,632	0,640
	Within Groups	,638		
	Total			
Travel agency	Between Groups	2,200	2,214	,069
	Within Groups	,994		
	Total			

Online booking through the official site of the tourist business	Between Groups	2,560	1,977	0,100
	Within Groups	1,295		
	Total			
Online booking in third party platform (e.g. Booking.com)	Between Groups	,989	,953	0,435
	Within Groups	1,038		
	Total			
What are the benefits of online booking systems:				
Online booking gives more flexibility	Between Groups	1,365	1,692	0,153
	Within Groups	,807		
	Total			
Online booking offers more attractive prices	Between Groups	1,124	1,290	0,275
	Within Groups	,872		
	Total			
Through online booking I can design my own travel based on my needs and interests	Between Groups	,300	,331	0,857
	Within Groups	,908		
	Total			
Through online reservation systems I can obtain more information	Between Groups	1,079	1,123	0,347
	Within Groups	,961		
	Total			
Through online reservation systems I can compare between various tourist providers	Between Groups	1,274	1,785	0,133
	Within Groups	,714		
	Total			
Which social media platforms do you use in order to be in touch with tourism business:				
Facebook	Between Groups	4,300	2,360	0,055
	Within Groups	1,822		
	Total			
Twitter	Between Groups	2,212	3,714	0,006
	Within Groups	,596		
	Total			
Instagram	Between Groups	,345	,169	0,954
	Within Groups	2,041		
	Total			
YouTube	Between Groups	,737	,484	0,747
	Within Groups	1,521		
	Total			
Flickr	Between Groups	,100	,242	0,914
	Within Groups	,415		
	Total			
Foursquares	Between Groups	,430	,523	0,719
	Within Groups	,822		
	Total			

Pinterest	Between Groups	,494	,676	0,610
	Within Groups	,732		
	Total			
LinkedIn	Between Groups	,597	,529	0,714
	Within Groups	1,128		
	Total			
Blogs	Between Groups	1,108	,559	0,693
	Within Groups	1,981		
	Total			
Other	Between Groups	1,724	,804	0,524
	Within Groups	2,146		
	Total			
What are the benefits for a tourist business from a social media presence:				
To build brand name	Between Groups	,132	,132	0,970
	Within Groups	,999		
	Total			
To build consumer loyalty	Between Groups	,363	,341	0,850
	Within Groups	1,066		
	Total			
To influence consumer purchase intention	Between Groups	,069	,071	0,991
	Within Groups	,971		
	Total			
To create a community	Between Groups	,361	,401	0,808
	Within Groups	,902		
	Total			
To attract new advertisers	Between Groups	,282	,270	0,897
	Within Groups	1,047		
	Total			
To enhance word of mouth	Between Groups	1,010	1,014	0,401
	Within Groups	,996		
	Total			
To get feedback (Reviews and rankings)	Between Groups	,910	1,034	0,391
	Within Groups	,879		
	Total			
To submit ideas for new services/products/ discounts/offers	Between Groups	,320	,287	0,886
	Within Groups	1,117		
	Total			
To obtain general information about costumers' needs and wants	Between Groups	,020	,020	0,999
	Within Groups	1,010		
	Total			
To obtain information about customers' opinion on service quality	Between Groups	,730	,849	0,496
	Within Groups	,860		
	Total			
To conduct customer researches	Between Groups	1,276	1,082	0,367
	Within Groups	1,179		
	Total			

To what extent the presence of a tourist business in social media affect your decision-making process	Between Groups	3,283	3,030	0,019
	Within Groups	1,084		
	Total			
Do you participate in social communities in order to make reviews and comments about a tourist business after your tourist experience	Between Groups	,405	,288	0,886
	Within Groups	1,408		
	Total			
To what extent do you trust reviews, rankings and ratings concerning a tourist business in a social media platform	Between Groups	1,687	2,045	0,090
	Within Groups	,825		
	Total			
To what extent the reviews of other customers in various social media platforms affect your decision-making process	Between Groups	,974	1,108	0,354
	Within Groups	,879		
	Total			
Are you aware that perhaps fake online reviews may influence your decision making	Between Groups	3,555	3,079	0,017
	Within Groups	1,155		
	Total			
To what extent would you be interested in the following technologies:				
Mobile application that would allow me to share my visit with other people	Between Groups	2,040	1,192	0,316
	Within Groups	1,711		
	Total			
Mobile electronic guides and maps	Between Groups	1,540	1,755	0,140
	Within Groups	,878		
	Total			
Mobile systems presenting the positions of tourist attractions by overlaying icons representing attractions onto maps	Between Groups	,573	,665	0,617
	Within Groups	,862		
	Total			
	Between Groups	,617	,504	0,733
	Within Groups	1,224		

Mobile ‘travelblog’ system allowing the tourists to communicate and discuss	Total			
System that would allow the destination to monitor tourist flows	Between Groups	,831	,657	0,623
	Within Groups	1,265		
	Total			
A global platform for tourism to generate information and provide cloud services to tourist businesses	Between Groups	,908	,710	0,586
	Within Groups	1,280		
	Total			
A transmedia storytelling tour guide	Between Groups	1,122	,915	0,457
	Within Groups	1,226		
	Total			
A game developed for tourists providing experiences	Between Groups	1,224	,673	0,612
	Within Groups	1,820		
	Total			
In general, are you in favour of using so much technology in the sector of tourism as it will assist tourists businesses to provide products/services of high quality and customized	Between Groups	1,166	1,629	0,169
	Within Groups	,716		
	Total			

6.2 Qualitative analysis

1. How do you think online reservation systems have affected hotel business sector?

Based on the answers of the respondents, online reservation systems have a significant effect upon the area of distribution and hence the overall performance of

tourism and tourist business. As one of the respondents has stated, “Due to technology, and especially the online reservation system, the tourism has raised a lot. Everyone is able to book his holiday at any time and with convenient cost. Its faster, easier, just a few clicks and its done”. Hence, these systems have facilitated “cross border consumer activity” as it was stated. In addition, it was stated that online reservation systems have changed the “relationship with and among hotel guests, clients, brands, managers, owners and third parties. These changes have had great impact on revenue generation, guest interaction, inventory control, pricing, hotel operating costs and financial return and asset values”. This was also stated by one more hotel manager, who claimed that “For our hotels, we have seen that in some cases the online reservations reflect almost 50% of the total business mix they have, and this number is estimated to grow rapidly in the next 5-10 years. This shift to online, is certainly something very positive for our hotels, since they save a lot of resources, for example, less sales & reservations agents, and in addition through the use of revenue management, they are able to maximize revenue and eventually profits”.

2. What are the benefits of global distribution systems for your business in relation to customers?

Overall, based on the answers of the respondents, the benefits that global distribution systems has offered to the hotels are the following:

- Access to new customers from all over the world, which was not possible through advertising in the past
- Better marketing exposure with lower cost
- Better and faster service
- Sophisticated rate and inventory management (instant access to very powerful players in the hotel industry which improves the room inventory exposure)
- Economies of scale
- Reduced overhead
- Lower transaction costs

- Enhanced buyer and supplier relationships
- Connection with a variety of agents, tour wholesalers and other distribution partners from across the globe
- Cross-selling and up-selling
- Unique capabilities
- Superior channel performance
- Overcoming brand integrity and rate integrity issues

Respectively, the benefits that global distribution systems has offered to the customers are the following:

- Cost saving
- Customers are satisfied with the quick and direct reply of their request, and the answer of their queries
- Customers are aware of their expectations and rights before their arrival in the tourist business
- Customers more options to choose from and research their holidays in much more detail in comparison to the past

3. Do you make use of social media platforms? If yes, which social media do you use?

All the hotel managers that have taken part in the research claimed that they make use of social media platform and especially the following: Facebook, Instagram, Twitter, You Tube, and Trip Advisor. One of the hotel managers stated that the reason for this use is “to forge an emotional connection with the users / potential guests of our hotels”. More precisely, this hotel manager stated exactly the reasons for which they make use of specific social media platforms:

“Facebook: All our properties are mandatory to maintain a presence on Facebook. It’s the largest and most versatile social network providing the greatest opportunity for reach.

Instagram: For most of our hotels we recommend to maintain a presence on Instagram if resources allow. It's highly recommended for resort properties and others with popular visual elements on site. It has great potential for sharing visual content from the property and events.

Twitter: We also recommend to our hotels to maintain a presence on Twitter if resources allow. It's a great listening tool and offers an opportunity to interact directly with your guests."

4. What are the benefits of your presence in social media for your hotel?

According to the opinion expressed by a hotel manager, the presence of hotels in social media has positive effects, especially "when combined with advertising or using third-party services". The fact that people share their experience through social media leads to hotel exposure, serving as an advertisement. For example a hotel manager stated that through social media they show live videos of any event or activity is taking place. In addition, hotels are able to receive feedback from customers, helping in improving their services offered to customers. Overall, based on managers' opinions, the benefits of social media presence for the hotels are the following:

1. Increased brand awareness
2. Improved brand loyalty
3. Build brand equity
4. Higher brand authority
5. Increased opportunity to network with influencers
6. Increased customer engagement
7. Better reputation management
8. Increased website traffic
9. Improved customer insights
10. Effective channel for storytelling
11. Improved services offered

12. Direct interaction and relation-building with customers

5. How the online reviews have changed your negotiation power with tour operators and tour agencies?

Based on the opinion expressed by a hotel manager, “since the online reviews have been part of the customer service, the negotiation has dramatically changed because the guest can demand and threat through their tour operators and tour agencies”. Customers of tour operators search for a hotel and read the reviews and for this reason they are more informed. Another hotel manager stated that “we also had cases in the past where some tour operators refused to sign contracts due to poor reviews and a low customer “satisfaction” goal. Undoubtedly, online reviews play a crucial role on the final decision making and of course many tour operators want to be sure beforehand that their business partners will deliver what they promise to offer”. Hence, low and poor ratings affect negatively the cooperation between hotels and tour operators. On the contrary, positive reviews give hotels an advantage towards the negotiations with tour operators. As a result, positive reviews serve as a value-added asset for the hotels. For example, “the contract fees can be better negotiated or in some cases the tour operators would even lower the marketing fees to promote your business in their channels, as they would really prefer to work with you in comparison to a hotel that has negative reviews and could eventually affect negatively the our operator / agency image as well”, as one hotel manager stated.

Finally, one hotel manager answered that “social media could indeed be impacting your business negotiations and all hoteliers should keep the following: a) Agents & Tour operators can easily gather information about you, your company, your product and / or service; b) they can see what is being said by others about the hotel. Subsequently increased exposure and positive reviews may potentially increase hotel rates through effective negotiations and contracting. The world has become “small” as reviews are now available within seconds; c) social media can be used to 'test the waters. Therefore, a positive curve of a set period may work to a great benefit for the hotelier who negotiates rates, payments and even inventories”.

6. How do you think that fake online reviews influence consumers' decision making?

Four out of five the hotel managers who took part in the research stated that fake online reviews has a negative impact upon customer decision making process, given the fact that the vast majority of consumers tend to believe what is written in social media. As another manager stated: “90% of consumers read online reviews and 88% of them trust the online reviews as much as personal recommendations. In other words, more people read reviews as part of their pre-purchase research before buying a product or service. It is also interesting to note that excellent reviews on your website can influence customers to spend more. Customers say that they are likely to spend 31% more if they read excellent reviews. Moreover, 72% of customers say they trust a business more if they read positive reviews about the business. 86% of consumers will decide against buying from you if they read negative reviews about you online. Thus, any negative reviews are likely to adversely affect the business and in turn, this will cause a dip in revenue”.

Another hotel manager focused upon the practices of some hoteliers to be engaged in fake reviews: “many hotels offer an incentive to create positive reviews for their own hotels and services offered, while also create negative reviews for their main competitors. Personally, I always recommend our hotels to avoid this practice, as I believe that this will have a significant negative impact on the long term of the business [...] Some hoteliers still see reviews, especially the negative reviews, as a burden and are coming to terms with their usage to improve their business. However, I believe that the hotels should embrace these online reviews as an opportunity for constructive exchange. We have seen that hotels that try to monitor and respond to these types of reviews, quickly and honestly, and try improving the root causes of the negative reviews will come out as winners in the long run. On the other hand, fake reviews are also a common practice in the industry, but there are ways to identify them and most of them can be removed, through the rights tools and resources offered by the reviews sites (such as TripAdvisor). Finally, I believe that the customers today are able to identify if a review is fake or not, so to be honest, I believe that this something that doesn't affect our hotels in great scale”.

However, one hotel manager answered that this depend on consumers: “some inexperienced with online platforms are more influenced; some more experienced

take everything into consideration and discuss with us about the online outcome of these review”.

7. Overall, how do you estimate the role of technology in the tourism sector?

The hotel managers who took part in the research answered that digitization offers many opportunities to the hotels, leading to increased profitability, since they: a) are able to learn and understand customers’ needs, desires, preferences and behaviours; b) have the ability to bring “products and services right into people's hearts by using digital communication vehicles”; c) “are more aware of their online presence and the numerous possibilities they have to advertise and promote their business”. For this reason, there is a need for the hotels “to be innovative in offering products and services that can trigger feelings of excitement to stay in the minds of our guests”. On the other hand, technology has led to some problems, such as the fake online reviews and the fact that tourist businesses should need to be in touch with the changes that take place, which needs increased information and knowledge.

In order to answer this question, one hotel manager has shared some interesting infographics from a recent study created by Google, regarding the impact of mobile on the customer journey. These infographics indicate that technology has changed completely the way one travels; in other words they show how much the tourism sector has changed due to the technology.

Travel Infographic: How Mobile Shapes the Customer Journey

Thanks to mobile, a traveler's decision making process includes more and more micro-moments—when people turn to a device with intent to answer an immediate need. In fact, 40% of the visits to U.S. travel sites now come from mobile devices.¹ In the four key types of travel micro-moments below, the stakes are high for travel brands as preferences are shaped and decisions are made.



I-WANT-TO-GET-AWAY MOMENTS

People turn to mobile to explore destination options and dream about what their next getaway could look like.



60%

of destination information searches come from mobile devices.²

Approximately ...



2/3

of watch time for top travel videos on YouTube happens on mobile.³

TIME-TO-MAKE-A-PLAN MOMENTS

Once travelers choose a destination, they often use search and their smartphones to make the dream a reality.



70%

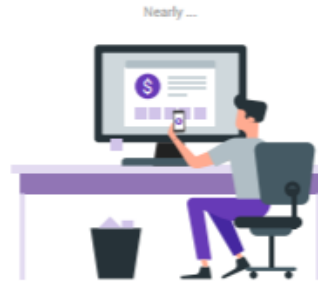
of travelers with smartphones use them to research travel.⁴



During the planning phase, travelers say that search is the most common way in which they discover the brand they ultimately book with.⁵

LET'S-BOOK-IT MOMENTS

Even with travel being a significant investment, mobile bookings are still on the rise.



60%

of leisure travelers claim a trip was their largest discretionary purchase in the last year—more than home improvements, financial investments or health-related products.⁶



31%

of leisure travelers say they've booked travel on a smartphone, while 53% of business travelers say the same.⁷



88%

of travelers with smartphones would switch to another site or app if yours doesn't satisfy their needs.⁸



Source: <https://www.thinkwithgoogle.com/consumer-insights/travel-infographic-mobile-shapes-customer-journey/>

8. What is your opinion about the future of tourism sector due to the continuous evolution and penetration of technology?

One of the respondents answered that “it remains to be discovered”, since there were also some technologies in the past (e.g. booking.com) who were not expected to rise so much. Nevertheless, this hotel manager added that “standard quality and high level services surpasses everything”. Another hotel manager answered that the tourism sector will rely heavily on the technology and the related applications. As an example, this manager referred to the “What’s App” chat message application, which allows hotels to respond to their guest needs 24/7, and the use of smartphone for entering the hotel room. In general, technology allow the hospitality industry to “save a lot of resources and develop a more personalized experience based on the needs of each individual guest”. Another hotel manager referred to the advances of robotic technology: “We are already seeing that in hotels, with robots starting to perform an array of tasks, from housekeeping to the concierge desk. Again, it is a trend that will only gather pace. From booking platforms to robotics, so often now, these new

players come from outside the industry, having reimagined a service or a product that those on the inside hadn't yet realized needed reinventing”.

Finally, a hotel manager shared a video from a research study created by EHL, which is a great example of how a hotel room will look in the future:



Source: <https://blog.ehl.edu/what-does-the-hotel-room-of-the-future-look-like>

7 Conclusions

7.1 Conclusions of the study

This research aimed at examining the impact of technology upon the tourist sector and more precisely the impact of the following technologies: a) Online reservation systems, b) Global distribution systems, c) Online reviews and d) Social media. The implications of the use of these technologies upon the tourist sector were examined via the opinions of hotel guests and hotel managers. Four main conclusion can be drawn from the present research.

The first conclusion of this study refers to the impact of online booking systems upon the tourism sector. The results have indicated that consumers prefer to use online booking systems in third party platforms, since they can compare between various tourist providers, they can design their own tailor-made travel, and they have more flexibility. Hotel managers have stated that online reservation systems give the hotels the ability to contract directly with a huge number of potential customers, regardless of where these customers are located, and without any time limitations; thus these systems have positive effect on both customers and hotels. For this reason, one of the managers predicted that perhaps in the future hotels will rely exclusively upon these systems. This may become a reality, given the fact that online reservation systems have a positive impact upon the relationships between hotels and consumers, and hotels' profitability. These outcomes coincide with the findings of previous studies (Sion et al., 2013; Radulović, 2013; Molchanova, 2014; and Ylagan, 2016), according to which online booking systems offer more flexibility to consumers, allow businesses to address to a wider consumer base, while they are also cost and time saving.

The second conclusion refers to the global distribution systems. Hotel managers claimed that these systems offer a lot to both hotels and consumers. For example, they offer to hotels access to new customers from all over the world, better marketing exposure, economies of scale, inventory management cost reduction, connection with a variety of agents, and enhanced buyer and supplier relationships.

They also offer consumers increased satisfaction from the faster and better services, as well as the variety of options. These advantages stemming from global distribution systems were also mentioned by other researchers as well. More precisely, previous studies have found that global distribution systems are cost and time saving, facilitate inventory management, allow businesses to be more connected and lead to customer satisfaction through the provision of faster and better services (Sion et al., 2013; Radulović, 2013; Felicen and Ylagan, 2016).

The third conclusion of this study refers to the impact of social media. Consumers tend to use more Facebook, in order to be in touch with tourist businesses. Facebook is the primarily social media platform used by hotels as well, along with other platforms (Instagram, You Tube, and Twitter). The benefits for a tourist business from a social media presence according to the consumers is that businesses can get feedback from reviews and rankings, and create a community. In addition, the presence of a tourist business in social media affect enough participants' decision-making process. On behalf of the hotels, social media presence offers numerous advantages, such as increased brand awareness, improved customer satisfaction and loyalty, increased customer engagement, improved customer insights and finally improved services being offered. Again these result do not come into contradiction with previous studies, which have found that social media presence facilitate the marketing of businesses (Yazdanifard and Yee, 2014; Christou, 2015; Kohli et al., 2015; Hew et al., 2016; Zhang et al., 2016), allow the interaction and relationship building between consumers and between consumers and businesses, which also leads towards the understanding of consumers' needs and preferences and thus the provision of more customized services (Seth, 2012; Callarisa et al., 2012; Yazdanifard and Yee, 2014), enable the provision of feedback on behalf of consumers leading to improved service quality and hence customer satisfaction and loyalty (Seth, 2012; Fung So et al., 2013; Msallam and Alhaddad, 2016) and influence consumer decision-making process (Anderson, 2012; Yazdanifard and Yee, 2014).

One more conclusion of this study refers to online reviews. Consumers who took part in the research do not participate enough or much in a social online community in order to make reviews and comments about a tourist business after their tourist experience. However, most of them trust reviews, rankings and ratings concerning a tourist business in a social media platform, whereas it was indicated that

these reviews and rankings affect their decision making process. This has been found in previous studies as well (Minazzi, 2010; Browning and Sparks, 2013; Alalwan et al., 2017). This is based on the fact that consumers rely heavily on reviews in order to assess a tourist businesses as it was stated by hotel managers and has been found in other studies (Verma et al., 2012; Christou, 2015; Alalwan et al., 2017). The same was also stated by the hotel managers, too. Both consumers and managers are aware of the fake online reviews, while consumers answered that they are also aware of the fact that these reviews may affects their decisions. What is more, hotels have increased negotiation power, in the case of positive reviews, whereas they also stated that fake and poor reviews have a negative effect, as it has been indicated by other researchers in the past (Valant, 2015; Lappas et al., 2016).

The last conclusion of this study refers to the future of tourism due to the technology and the digitization. Consumers would be mostly interested in mobile electronic maps and guides, while in general they are much in favour of using so much technology in the sector of tourism as it will assist tourists businesses to provide products/services of high quality and customized. Similarly, managers stated that through technology they are able to learn and understand customers' needs, desires, preferences and behaviours, have more options to offer services and products to consumers, whereas they have also increased ability to advertise and promote their businesses. A recent study by Scyscanner has found that tourist sector will not only rely a lot on technology in the future, but it has the potential to lead to major changes in the traveling experience (Business Class, 2015).

7.2 Limitations and suggestions for further research

The first limitation of this research refers to the synthesis of its sample. More precisely, the sample of this research consisted of hotel guests and hotel managers. However, the tourism sector does not consists exclusively from businesses in the hospitality sector, but it also includes tour operators, tour agencies, restaurants, vehicle renting etc. For this reason, the conclusions of this study cannot be generalized to the whole tourism sector, without consideration. As a result, a future

study could be conducted to a more representative sample of tourist businesses and consumers from other businesses as well, in order to reach to more reliable and accurate results concerning the impact of technology in the tourism sector.

One more limitation of this research refers to the geographical disparity of the sample. On the one hand the sample was based on Greek population and on the other it was not from all the Greek regions. For this reason, a future study should employ a sample which again should be more representative of the whole population in terms of geographic distribution. Such a study would allow to take into account potential differences in terms of regional disparities. In addition, it would be interesting to employ a sample also from foreign countries, in order to conduct a comparative study. Such a research would allow to examine also whether the results are different based on the different cultural background.

References

1. Adesina, K.I., & Chinoso, I. (2015). Service delivery and customer satisfaction in hospitality industry: A study of the Divine Fountain Hotels Limited, Lagos, Nigeria. *Journal of Hospitality and Management Tourism*, 6(1), 1-7.
2. Alalwan, A.A., Rana, N.P., Dwivedi, Y.K., & Algharabat, R. (2017). Social media in marketing: A review and analysis of the existing literature. *Telematics and Informatics* [in press].
3. Al-Msallam, S., & Alhaddad, A. (2016). The Effects of Social Media Marketing In the Hotel Industry: Conceptual Model for Development of an Effective Online Community. *International Journal of Business and Management Invention*, 5(7), 1-12.
4. Anderson, C.K. (2012). The Impact of Social Media on Lodging Performance. Retrieved from: <http://scholarship.sha.cornell.edu/cgi/viewcontent.cgi?article=1004&context=chrrpubs>
5. Blessing, L.T.M., & Chakrabarti, A. (2009). *DRM A Design Research Methodology*. London: Springer-Verlag.
6. Browning, V.S.K., & Sparks, B.A. (2013). The Influence of Online Reviews on Consumers' Attributions of Service Quality and Control for Service Standards in Hotels. *Journal of Travel & Tourism Marketing*, 30(1-2), 23-40
7. Business Class (2015). The future of travel in 2024 – according to recent findings from Skyscanner. Retrieved from: <http://www.businessclass.co.uk/future-travel-2024-according-recent-findings-skyscanner/>

8. Callarisa L., Garcia, J.S., Cardiff, J., & Roschchina, A. (2012). Harnessing social media platforms to measure customer-based hotel brand equity. *Tourism Management Perspectives*, 4, 73-9.
9. Christou, E. (2015). Branding Social Media in the Travel Industry. *Procedia - Social and Behavioral Sciences*, 175, 607-614.
10. Dawson, C. (2009). *Practical research methods*. Oxford: How to Books.
11. Dogac, A., Kabak, Y., Laleci, G., Sinir, S., Yildiz, A., Kirbas, S., & Gurcan, Y. (2004). Semantically enriched web services for the travel industry. *SIGMOD Rec.*, 33(3), 21-27.
12. Etikan, I., Musa, S.A., & Alkassim, R.S. (2015). Comparison of Convenience Sampling and Purposive Sampling. *American Journal of Theoretical and Applied Statistics*, 5(1), 1-4.
13. European Commission (2014). Study on Online Consumer Reviews in the Hotel Sector. Retrieved from: <http://bookshop.europa.eu/en/study-on-online-consumer-reviews-in-the-hotel-sector-pbND0414464/>
14. Felicen, S.S., & Ylagan, A.P. (2016). Effects of Computer Reservation System in the Operations of Travel Agencies. *Asia Pacific Journal of Multidisciplinary Research*, 4(4), 23-28.
15. Fung-So, K.K., King, C., Sparks, B.A., & Wang, Y. (2013). The influence of customer brand identification on hotel brand evaluation and loyalty development. *International Journal of Hospitality Management*, 34, 31-41.
16. Fung So, K.K., & King, C. (2010). "When Experience Matters": Building and Measuring Hotel Brand Equity. *International Journal of Contemporary Hospitality Management*, 22(5), 589-608.
17. Given, L.M. (2008). *The SAGE encyclopedia of qualitative research methods*. California: Sage.
18. Greener, S. (2008). *Business research methods*. Sue Greener & Ventus Publishing.
19. Grubestic, T.H., Horner, M.W., Zook, M.A., & Leinbach, T.R. (2005). Global Distribution Systems and the U.S. Commercial Air Industry. Retrieved from: <http://www.tonygrubestic.net/airport.pdf>

20. Hew, J.J., Lee, V.H., Ooi, K.B., & Lin, B. (2016). Mobile social commerce: The booster for brand loyalty?. *Computers in Human Behavior*, 59, 142-154.
21. Hotrec Hospitality Europe (2011). Facts & Figures. Retrieved from: <http://www.hotrec.eu/about-us/facts-figures.aspx>
22. ISO (2011). Involving consumers. Why and how. Retrieved from: https://www.iso.org/files/live/sites/isoorg/files/archive/pdf/en/involving_consumers.pdf
23. Kärcher, K. (1996). The Four Global Distribution Systems in the Travel and Tourism Industry. *Electronic Markets*, 6(2), 20-24.
24. Kohli, C., Suri, R., & Kapoor, A. (2015). Will social media kill branding?. *Business Horizons*, 58, 35-44.
25. Lappas, T., Sabnis, G., & Valkanas, G. (2016). The Impact of Fake Reviews on Online Visibility: A Vulnerability Assessment of the Hotel Industry. *Information Systems Research, Articles in Advance*, 1-22.
26. Minazzi, R. (2010). Hotel Classification Systems: A Comparison of International Case Studies. *Acta Universitatis Danubius: Oeconomica*, 6(4), 64-86.
27. Molchanova, V.S. (2014). The Use of Online Service Booking in Tourist Activity. *European Journal of Social and Human Sciences*, 2(2), 75-80.
28. Ong, B.S. (2012). The Perceived Influence of User Reviews in the Hospitality Industry. *Journal of Hospitality Marketing & Management*, 21(5), 463-485.
29. Radulović, L. (2013). The role and potential of global distribution system Amadeus for tourism development at the global level. *Singidunum Journal*, 10(1), 28-38.
30. Schulz, A. (1996). The Role of Global Computer Reservation Systems in the Travel Industry Today and in the Future. *Electronic Markets*, 6(2), 17-20.
31. Seric, M., Gil-Saura, I., & Ruiz-Molina M.E. (2014). How can integrated marketing communications and advanced technology influence the creation of customer-based brand equity? Evidence from the hospitality industry. *International Journal of Hospitality Management*, 39, 144-156.

32. Seth, G. (2012). Analyzing the Effects of Social Media on the Hospitality Industry. UNLV Theses, Dissertations, Professional Papers, and Capstones. 1346. Retrieved from: <http://digitalscholarship.unlv.edu/thesesdissertations/1346>
33. Simons, H. (2005). Ethical responsibility in social research. In: Somekh, B., & Lewin, C. (Ed.), *Research methods in the social science*. London: Sage
34. Sion, B., Mihălcescu, C., & Mărginean, A. (2013). The passage from airline reservation systems to global distribution systems. Retrieved from: <ftp://ftp.repec.org/opt/ReDIF/RePEc/rau/jisomg/Su13/JISOM-SU13-A10.pdf>
35. Theoharis, N. (2006). Reservation systems in tourist sector. Retrieved from: <http://traveldailynews.gr/pdf/Epth3/NikosTheoharis.pdf>
36. Valant, J. (2015). Online consumer reviews. The case of misleading or fake reviews. Retrieved from: <http://www.eesc.europa.eu/resources/docs/online-consumer-reviews---the-case-of-misleading-or-fake-reviews.pdf>
37. Verma, R., Stock, D., & McCarthy, L. (2012). Customer Preferences for Online, Social Media, and Mobile Innovations in the Hospitality Industry. *Cornell Hospitality Quarterly*, 53(3), 183-186.
38. World Travel & Tourism Council (2016 α). Human capital. Retrieved from: <http://www.wttc.org/research/policy-research/human-capital/>
39. World Travel & Tourism Council (2016 β). Monthly economic impact. Retrieved from: <http://www.wttc.org/-/media/files/reports/monthly-updates/wttc-monthly-september.pdf>
40. Xu, B.J., & Chan, A. (2010). A conceptual Framework of Hotel experience and customer-based brand equity. *International Journal of Contemporary Hospitality Management*, 22(2), 174-193.
41. Yazdanifard, R., & Yee, L.T. (2014). Impact of Social Networking Sites on Hospitality and Tourism Industries. *Global Journal of Human-Social Sciences: Economics*, 14(8), 1-6.
42. Zhang, K.Z.K., Benyoucef, M., & Zhao, S.J. (2016). Building brand loyalty in social commerce: The case of brand microblogs. *Electronic Commerce Research and Applications*, 15, 14-25.

Appendix

Questions to hotel managers

1. How do you think online reservation systems have affected hotel business sector?
2. What are the benefits of global distribution systems for your business in relation to customers?
3. Do you make use of social media platforms? If yes, which social media do you use?
4. What are the benefits of your presence in social media for your hotel?
5. How the online reviews have changed your negotiation power with tour operators and tour agencies?
6. How do you think that fake online reviews influence consumers' decision making?
7. Overall, how do you estimate the role of technology in the tourism sector?
8. What is your opinion about the future of tourism sector due to the continuous evolution and penetration of technology?

Questionnaire for consumers

Section I. Demographic profile

1. Gender

Male	
Female	

2. Age

Up to 30	
31-40	
41-50	
51-60	
Over 60	

3. Educational background

Secondary education	
Vocational education	
University	
Master	
PhD	

Section II. Online booking systems

4. Which of the following channels do you use when booking a hotel/flight etc (1=not at all, 2=little, 3=enough, 4=much, 5=very much)?

	1	2	3	4	5
Tour operator					
Travel agency					
Online booking through the official site of the tourist business					
Online booking in third party platform (e.g. Booking.com)					

5. What are the benefits of online booking systems (1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree)?

	1	2	3	4	5
Online booking gives more flexibility					
Online booking offers more attractive prices					
Through online booking I can design my own travel based on my needs and interests					
Through online reservation systems I can obtain more information					
Through online reservation systems I can compare between various tourist providers					

Section III. Social media

6. Which social media platforms do you use in order to be in touch with tourism business? (1=not at all, 2=little, 3=enough, 4=much, 5=very much)

	1	2	3	4	5
Facebook					
Twitter					
Instagram					

YouTube					
Flickr					
Foursquares					
Pinterest					
LinkedIn					
Blogs					
Other					

7. What are the benefits for a tourist business from a social media presence (1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree)?

	1	2	3	4	5
To build brand name					
To build consumer loyalty					
To influence consumer purchase intention					
To create a community					
To attract new advertisers					
To enhance word of mouth					
To get feedback (Reviews and rankings)					
To submit ideas for new services/products/discounts/offers					
To obtain general information about costumers' needs and wants					
To obtain information about customers' opinion on service quality					
To conduct customer researches					

8. To what extent the presence of a tourist business in social media affect your decision-making process?

Not at all	Little	Enough	Much	Very much

Section IV. Online reviews

9. Do you participate in social communities in order to make reviews and comments about a tourist business after your tourist experience?

Not at all	Little	Enough	Much	Very much

10. To what extent do you trust reviews, rankings and ratings concerning a tourist business in a social media platform?

Not at all	Little	Enough	Much	Very much

11. To what extent the reviews of other customers in various social media platforms affect your decision-making process?

Not at all	Little	Enough	Much	Very much

12. Are you aware that perhaps fake online reviews may influence your decision making?

Not at all	Little	Enough	Much	Very much

Section V. The digital future of tourism

13. To what extent would you be interested in the following technologies (1=not at all, 2=little, 3=enough, 4=much, 5=very much)?

	1	2	3	4	5
Mobile application that would allow me to share my visit with other people (e.g. see where others are, communicate, use hypermedia related to the locations in the destination, and share information about the visit)					
Mobile electronic guides and maps					
Mobile systems presenting the positions of tourist attractions by overlaying icons representing attractions onto maps					
Mobile 'travelblog' system allowing the tourists to communicate and discuss their visit when they got home					
System that would allow the destination to monitor tourist flows					
A global platform for tourism to generate information and provide cloud services to tourist businesses					
A transmedia storytelling tour guide					
A game developed for tourists providing experiences					

14. In general, are you in favour of using so much technology in the sector of tourism as it will assist tourists businesses to provide products/services of high quality and customized?

Not at all	Little	Enough	Much	Very much

