The Role of ICT in Involving the Tourist and in Sustainability of Tourism Destinations

Célia M. Q. Ramos, Georgette Andraz, and Irene Cardoso

Abstract A tourist destination, in addition, to attracting tourists, both national and international, must take care of the interests of the local community in order to obtain economic development, improve the quality of life of the resident and meet the satisfaction of visitors. The quality of experiences perceived by tourists, about a tourist destination, contributes to their satisfaction and to the creation of richer memories. In this context, the role of Information and Communication Technologies (ICTs) can be the way to improve and add value to the experience, through the involvement of tourists and residents, taking into account the search made by tourists about their tourist destination before and during travel, through the dissemination of its authenticity, values and heritage of the destination by other tourists, residents and by official destination management organizations. The present research intends to analyse the role played by ICT to improve the competitiveness of the destination, in order to meet the needs of tourists, taking in consideration the quality of life of its residents. The methodology used considers descriptive statistical analysis and non-parametric tests applied to research questions. The research concluded that tourists use ICT at any time during their travel, both in planning and in the consumption phase, and that they use the technology in order to find information on the destination, make reservations and share their experiences on the social networks.

Keywords Consumer behaviour · Sustainability · Tourism destination management · Tourism experience · Social media marketing · Information and communication technologies (ICT)

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1   Introduction

Tourism is currently one of the largest economic activities with the highest growth rate worldwide (Tahayori & Moharrer, 2006). In a global world, where travel is increasingly easy and accessible, tourist destinations are increasingly competitive to attract tourists, businesses and investments. However, the management of tourism destination should consider several functions that contribute to the success and attract tourist to visit their space (Bornhorst, Ritchie, & Sheehan, 2010).

As tourism is an information-intensive industry (Benckendorff, Xiang, & Sheldon, 2019), the widespread use of information and communication technologies (ICT) has played a relevant role in both the supply and demand side (Oliveira & Panyik, 2015). In the search perspective, ICT, particularly social networks, allows immediate access to relevant information about destinations, sharing experiences after and during consumption of the tourist product, photos, among others (Xiang & Gretzel, 2010). There is evidence that almost all tourist uses ICT to obtain information about the tourism destination.

Tourism destinations consist of a set of interrelated and interdependent products and services that are part of the tourism system which is difficult to manage (Fyall, 2011). The variety, complementarity, interconnection and interdependence of products and services, which characterize tourism activity in a tourist destination, cause fragmentations that make it difficult to manage the destination (Boes, Buhalis, & Inversini, 2015).

The challenges posed to the organizations that manage the destinations go through the management and control of critical resources known as the six A's (attractions, accessibility, amenities, available packages, activities, ancillary services) while simultaneously increasing the profit and benefits for the destination (Boes et al., 2015; Murphy, Pritchard, & Smith, 2000), as well as to guarantee the quality and maintenance of the different values and cultures that coexist in the population, in order to reduce impacts among all actors. For this system to function successfully, it must satisfy the potential customer who is the tourist, who only has access to information of different formats (text, photographs, and videos) to choose and acquire a tourist product associated with a tourist destination.

Managing the system and managing the associated information in order to engage the tourist is only possible with innovative technologies, where information from local and global agents, from public and private companies, coexists with a view to increasing the tourist satisfaction when finally consuming the product tourism. All this in order to transform the tourist destinations as a "places utilizing the available technological tools and techniques to enable demand and supply to co-create value, pleasure, and experiences for the tourist and wealth, profit, and benefits for the organizations and the destination" (Boes et al., 2015: 394), where concerns about competitiveness, sustainability, and inclusiveness on the concept of providing holistic Smart Tourism Destinations are present (Buhalis & Amaranggana, 2015; Gössling & Michael Hall, 2019).

The present research intends to analyse the relevance of ICTs to improve the competitiveness of the tourism destination, in order to meet the needs of tourists by

one side, and guarantee the sustainability, taking in consideration concerns about the life quality of their residents.

Following the introduction, the chapter is subdivided into three sections: the first presents the concepts and challenges associated to the management of tourism destination conjugated with information and communication technologies, considering the role, influence and potentialities to add value to the touristic experience of the visitors. The second section presents the methodology used in the study. The third section gives the results of the study taking into consideration descriptive statistical analysis and non-parametric tests applied to research questions. Finally, some conclusions, limitations and future research paths are drawn about the investigation presented in this chapter.

2 Management of Tourism Destination and ICT

A tourism destination should acquire centrality, in a way to achieve interest as a territory that travellers want to visit, should meet customer satisfaction through a structured offer of services, availability and sharing of resources and attractions, so that the visitor can experience the visit and make combinations according to their preferences (Bornhorst et al., 2010; Giménez, 2006). At the same time, must have a brand that attractively translates the offer, facilitates its identification and gives rise to an idea of the interaction of affections and feelings.

It must adopt a form of joint marketing, with vertical marketing cooperation for the whole space that defines the tourism destination (Damayanti, Scott, & Ruhanen, 2017), which interlinks the stakeholders and should integrate the sustainability concerns to achieve a better and more sustainable future for all, in accordance with the objectives of the United Nations (2019).

A tourist destination includes urban, social and cultural structures, among others, aiming at achieving the best quality of residents and attracting tourists, with the objective of achieving economic development superior to what it would achieve by means of other factors of production (Giménez, 2006), while define and apply rules to achieve the sustainability concerns (Ritchie & Crouch, 2003), as presented in the Fig. 1.

According to Fig. 1, in the management of tourist destinations, five functions should be considered in order to achieve a holistic or integrated management: international competitiveness, economic development, quality of life, satisfaction and sustainability concerns.

International competitiveness is one of the most important function in the integrated management of tourist destinations (Boes et al., 2015), it aims at attracting foreign capital to the region, exporting the tourism product, developing strategies to attract attention and attracting tourists at an international level.

Economic development results from the influx of tourists attracted to visit the tourist destination, which consequently contributes to: (i) the development of businesses located at the destination, both private and public, with a view to increasing their economic profitability; (ii) the development of adequate infrastructure, increased employment, which will improve the social profitability of residents;

(iii) the conditioning the more marked maintenance needs associated with the territory and the heritage, thus increasing its value and authenticity, which will lead to an environmental profitability (Chen, 2015).

Quality of life is related to how space is used by residents and tourists to live, to develop relationships, to produce new products complementary to tourism, to create and develop cultural and identity values, to create entertainment activities, among other aspects related to the people who enjoy the space (Uysal, Sirgy, Woo, & Kim, 2016).

Satisfaction links the three functions mentioned above with a view to developing experiences that contribute to the satisfaction of all stakeholders in the tourism system: tourists, residents, businesses and other stakeholders.

However, today, sustainability concerns must be considered as a fifth functions to be considered in the management of destinations, since they condition the four previous axes. The challenges related to poverty, inequality, climate, environmental degradation, prosperity and peace and justice are interlinked (United Nations, 2019), related to all actors, from the tourist to the resident, through all the players in the tourist distribution chain.

Taking into account the five functions presented in Fig. 1, the success of the management of a tourist destination will depend on all the actors in each function and the relationship between the processes associated with each one, since an inefficient cooperation can put in question the attractiveness of the destination, diminishing its potential to attract visitors, which will jeopardize its competitiveness. However, the success of the development and management of a tourist destination also depends on the use of ICT (Giménez, 2006), which can contribute not only to support the decision-making of the tourist, but also to the control and management of tourism resources and also to influence the value of tourism experiences.

Fig. 1 Functions of the tourism destination. Source: Adapted from Giménez (2006: 16–22)
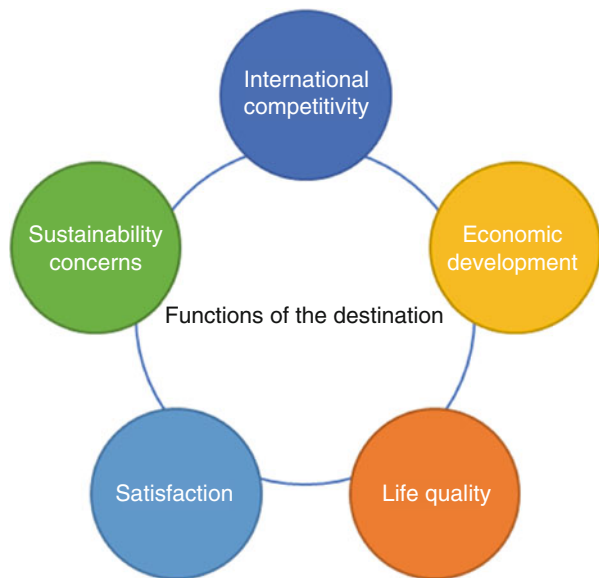
2.1   The Role of ICT in the Tourism Destination Management

ICT can contribute to better manage and develop the space for the tourist experience both for the visitor and for the resident, with a view to contributing to innovation and entrepreneurship, associated with the sustainable tourist destination, which may arise through new products, new services or new tourist experiences (Ateljevic & Page, 2017).

Information and Communication plays an important role in a tourist experience, which can be supported by ICTs (Gretzel, Fesenmaier, & O'leary, 2006). ICT has contributed to transform consumer behaviour, since they are present in the three phases considered to carry out a tourist trip as showed in the Fig. 2.

The ICT can support the destination management in terms of sustainability and competitivity. As presented in the Fig. 2, they are the means par excellence to support the tourist in the phase of pre-consumption (before), consumption (during) and post-consumption (after) of a tourist product (Fotis, Buhalis, & Rossides, 2011).

In the pre-consumption phase, they are used to help plan the journey, to create a set of feelings that contribute to the expectation, and to acquire knowledge about the destination. At the same time, it helps in the process of becoming aware of the many options that meet the needs of the traveller, and consequently in the decision making, as well as provide mechanisms for carrying out service transactions and create an anticipation environment about the tourist experience (Gretzel et al., 2006; Narangajavana, Fiol, Tena, Artola, & García, 2017; Ukpabi & Karjaluoto, 2017).

In the consumption phase, in addition to the possibility of creating an ubiquitous connection, anywhere, anytime, through the mobile devices, they allow the navigation either in the space of the destination, through GPS, or through available information highways, through applications and portals, in order to obtain
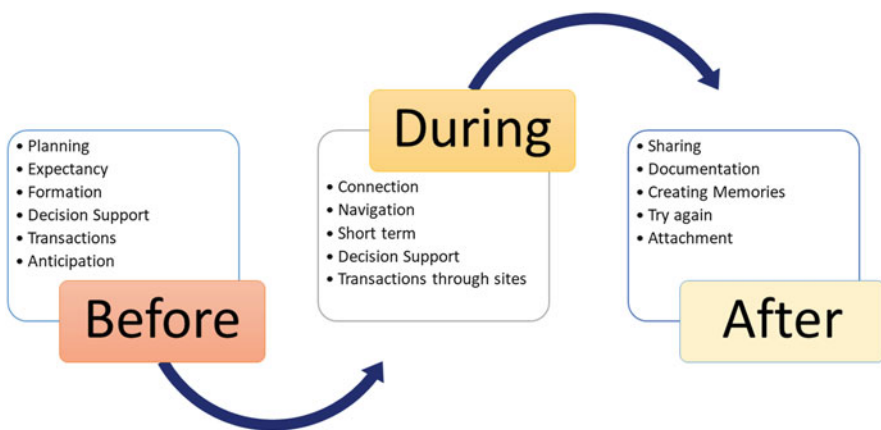

Fig. 2 Relation between the travel phases and the use of ICT. Source: Adapted from Gretzel et al. (2006)

information or through the purchase of complements to the tourist product, carrying out commercial transactions, through electronic stores (Gretzel et al., 2006).

In the after-consumption phase, the ICT allows the sharing of experience through the dissemination of memories built through feelings and documents produced during the trip, in a photographic or video format, which helps the tourist to feel the need to repeat the experience in the destination and thus contribute to its sustainability (Gretzel et al., 2006; Tung, Lin, Qiu Zhang, & Zhao, 2017).

The destination product is a set of dimensions, which includes the destination environment, service infrastructure and tourism destination experience (Murphy et al., 2000). The destination environment is the one that has the most impact and contributes to sustainable development, since it includes natural, political and legal, technological, economic, cultural and social factors, which conditionate the security, quality and development of the destination. It also serves as a basis for the development of the infrastructure associated with local and tourist services. The service infrastructure also causes impact on the destination and includes the support to the activity enrichment and the complementary product tourism, such as: shopping, recreation and attractions, food, travel, transportation, accommodation and auxiliary which increase the complexity, diversity, interest and wealth of the destination.

The tourism destination experience is the aspect that directly affects the tourist, while the destination environment is related to the destination, the experience is related to tourism, and the bridge between them is defined by the way the services were perceived, added value and how they contributed to the creation of affective memories, thus producing the tourist experience, as presented in the Fig. 3. In conclusion, the tourism destination experience can be seen as a result of the interactions between tourists and the tourist destination, taking into account several dimensions: sensorial, perceptual, social, affective and/or emotional (Tung et al., 2017; Tussyadiah & Zach, 2011) connected with the destination environment through the tourism services infrastructure.

2.2 The Influence of ICT in Tourism Experience

The conjugation between all the dimension of the tourism destination product and ICT can influence the tourism behaviour and their final tourism experience, as presented in the Fig. 4. When a tourist considers the use of technology in their tourist trip, this conjugation influences their behaviour, since it contributes to different activities associated with each phase of the trip (Dixit, 2016). For example, in the Before or planning phase, it helps to collect information on the destination, find more interesting places to visit, make hotel reservations taking into account the opinions of other travellers, look for information on public transport, the weather to decide what clothes to take, identify parties and festivals that will take place during the trip and helps the tourists choose and decide on what they will visit on the days they have to visit the destination. All these actions are carried out before traveling, although they are not concentrated only during this phase of pre-consuming. They also will take place in the next stage.

Fig. 3 Conceptual model of the destination tourism product. Source: Adapted from Murphy et al. (2000: 46)

During the trip and with the support of technology, the tourist connects to the internet (Xiang, Wang, O'Leary, & Fesenmaier, 2015) and can search for information that complements the knowledge about points of interest that he has visited, searches for the most appropriate route according to his preferences to reach the next place he wants to visit, reviews of what he wants to visit or where he wants to stay, while he makes reservations for new travel supplements, searches for new services not identified in the previous phase and may even discover new interests and changes the travel plans that had initially defined. In addition, create memories in digital formats to produce a roadmap for his trip, which can be shared at that moment or in the future, in the next phase of his/her journey (Tung et al., 2017).

When the trip ends and they return home, in the after-sharing phase, tourists can share all the documents they have created on blogs, websites or in their profile on the social networks, while rating hotels and accommodation to help other travellers, creating digital memories which become available online for their own consumption, family, friends and other tourists (Tung et al., 2017).

The environment provided by technologies, both for the destination and for the tourist, has helped to develop mechanisms to support the competitiveness and sustainability of destinations, such as for the protection and dissemination of heritage (Unesco, 2017). Currently, the mechanisms include technology that involves the collection, exchange and processing of data, which have contributed to the development of intelligent destinations, business with intelligence and to the creation of intelligent experience (Gretzel et al., 2006). Associated with intelligent tourism, ICT has contributed to bridge the digital and physical environment using sensors and smartphones, technology that enables co-creation and collaboration between public and private companies.

Before

- Prepare the trip
- Collect destination information
- Discover more interesting places to visit
- Hotel reservations
- Search on public transport
- Search the weather
- Search for events
- Plan an itinerary

During

- Complement information already searched
- Through maps go through the paths to reach the desired places
- Get notifications from places closest to where you are
- Discover new products / events / sites
- Make reservations for events
- Search by services
- Check-ins

After

- Share comments, photos, and videos on social networks and personal blogs
- Evaluate hotels and restaurants
- Reply to comments
- Create and document trip memories to create your memories
- Relive the journey through your travel memories

Fig. 4 Conceptual model of the destination tourism product. Source: Adapted from Buhalis and Amaranggana (2015)

2.3 The Potentialities of ICT to Customizing the Tourist Experience

The environment provided by current technologies associated with industry 4.0 (Lasi, Fettke, Kemper, Feld, & Hoffmann, 2014) and applied to the tourism sector, which include the use of smartphones, sensors, bigdata, private-public-consumer, virtual reality, cloud computing, and means to co-create experiences contribute to the mechanisms of collecting, exchanging and processing data automatically, which allow the creation of personalized experiences for the traveller (Höpken, Fuchs, & Lexhagen, 2018).

This technological environment, called smart tourism (Boes et al., 2015; Gretzel, Sigala, Xiang, & Koo, 2015), which includes the above identified technologies and involves the automatic processing of data, includes layers that contribute to: smart experience, intelligent business ecosystem and smart destination, with services based on the tourist location in order to create personal experiences.

The smart tourism destination environment enhancing tourism experience through tourist's expectation on personalized services, which can be associated to the three travel phases, in terms of transportation, accommodation, gastronomy, attractions and support services (Buhalis & Amaranggana, 2015).

In the "before phase", it is possible to customize services in terms of: transportation, such as plan itineraries, search schedules, recommend routes, save time in the reservation and purchase tickets; accommodation, hotel planning, room type, price choice, events nearby; time saving and personalized welcome message service; gastronomy, search for information on specific types of gastronomy, types and locations of restaurants; attractions, recommend attractions and provide information on attractions; and support services, where available, timetables and what services are available (Buhalis & Amaranggana, 2015).

Regarding of the "during phase", it is possible to customize services in terms of: (i) transportation, such as: real-time schedules, personalized transport, suggestion of alternatives; (ii) accommodation, welcome message, careful with customer preferences, adapted services; (iii) gastronomy, real time information taking into account preferences, social and physical context; (iv) attractions, co-creation through interactive maps, real-time information, information of the events near the place where you are; (v) and support services such as: how to get there, information about what is available, exchange of information in real time (Buhalis & Amaranggana, 2015).

In the last phase, or "after phase", it is also possible to customize services in terms of: (i) transport, such as: give feedback on services, receive promotions, support in looking for future places in transport; (ii) accommodation, feedback, receive promotional offers; (iii) gastronomy, feedback, receiving promotions, involvement in future actions/events of this nature; (iv) attractions, sharing, contributions to the experience and future memories, receiving offers and news; and (v) support services, monitoring the evolution of the service provided (Buhalis & Amaranggana, 2015).

In these context, smart tourism can be seen under three perspectives to take into account: (i) consumption, which refers to for example, the concern for personal information security, care about the actions of co-creation, psychological effects of

ubiquitous use of technology, between others; (ii) services, in terms of the value of the information generated, the existence of adequate business models, the development of adequate collaboration mechanisms, among others; (iii) availability of technology, government of technological infrastructure, technological requirements, environmental and social costs (Buhalis & Amaranggana, 2015).

In view of the foregoing, the main objective of this study is to analyse the relevance of ICTs to improve the competitiveness and sustainability of the destination, in order to meet the needs of tourists.

2.4   The Research Questions

As was said before this research has as the main goal to analyse the relevance of ICTs to improve the competitiveness of the destination, in order to meet the needs of tourists by one side, and guarantee the sustainability, taking in consideration concerns about the life quality of their residents. So, in order to achieve it and considering the literature review presented, the research questions were defined bearing in mind the different phases of a trip: before, during and after. It is therefore intended to answer the following questions:

1. The use of ICT to search information on tourist destination?
2. Do you consider important and trustworthy to search information about a tourist destination on the internet?
3. Do you consider important to share information about a tourist destination through social networks?
4. What influence do the travellers comments shared on the social networks have on your choice of tourist destination?
5. Do you consider the use of mobile devices relevant during a trip?
6. What is the main action you take using ICT during a trip?
7. To share your trip, which social network do you use the most?

3   Methodology

After reviewing the literature and delimiting the research problem, a survey was prepared and published online in December 2017, consisting of 12 questions divided into 2 main groups: characterizing the sample and assessing the importance of ICT for the tourism experience associated to a travel. Two hundred and sixty-three (263) surveys were answered, however, only 242 were considered valid. The structure of the questionnaire allowed for the collection of the variables presented in the study.

After data collection, a descriptive statistics analysis was carried out to characterize the population, and statistical analysis using non-parametric tests was applied to the research questions.

Finally, the results were analysed and interpreted in order to obtain answers to the research questions.

4 Data Analysis and Research Results

4.1 Respondents' Profile

Data analysis and research results regarding demographic profile of the respondents, show that the majority are of Portuguese nationality (55%) and have between 25 and 50 years old (48%). The youngest group (under 25) represents approximately 38% of the sample. Respondents are primarily male (76%) and have an university or equivalent degree (80%), which indicates a high educational level in relation to the tourist demand in general. In the analysis of the variable related to the trip, the data show that the majority of visitors/tourists travel accompanied (87%), and the main reason for the visit is related to holidays (30%), followed by visits to family/relatives (48%).

4.2 Importance of ICT for the Tourism Experience Associated to a Travel

In order to analyse the research questions associated to the different phases of a trip: before, during and after—descriptive statistics and nonparametric tests uni and multivariate were used.

RQ. 1. The Use of ICT to Search Information on Tourist Destination
The use of ICT to evaluate alternative opportunities, compare and contrast offerings is perceived as being an important factor by a large proportion of the respondents. Table 1 shows that approximately 90% of the respondents always use ICT or use it many times to search information. Only a very small proportion use this tool occasionally. This finding is in line with previous studies, such as Xiang et al. (2015) who found that ICT is predominantly used during the before trip stage for information search purposes. Also, a study conducted by Sidali, Schulze, and Spiller (2009) to analyze the impact of reviews on the choice of holiday accommodation, found that more than 80% of users purchased accommodation recommended by reviews. This reflects an useful marketing tool for hotels and destinations.

RQ. 2. Reliability of Information About Tourist Destinations in the Internet
Respondents were questioned to express their perception about the reliability of information sources. Findings (Table 2) show that most of the respondents (47%) have reported to be neutral whereas 40% have affirmed they trust online information sources about tourist destination. On the other hand, the online information is not perceived as being very trustworthy source by 13% of the respondents. These

Table 1 The use of ICT for searching information about tourist destination

Variables	Frequency	Percentage
Occasionally	7	2.9
Neutral	21	8.7
Many times	72	29.8
Always	142	58.7
Total	242	100.0

Source: Author's own table

Table 2 Reliability of information online

Variables	Frequency	Percentage
Disagree	31	12.8
Neutral	114	47.1
Agree	85	35.1
Totally agree	12	5.0
Total	242	100.0

Source: Author's own table

findings might be explained by the particularities of the sample analysed, as older people tend to spend less time to grab information from internet (Lenhart, Purcell, Smith, & Zickuhr, 2010).

Continuing the analysis of this issue and considering the respondents' education level (Table 3) it was found that the confidence on online information decreases as a function of education level, as noted in Table 4 (statistical significance, $p = 0.011$). There are significant statistical differences between low levels and two other education level groups (degree and postgraduate), whereas the undergraduate respondents are more confident than those of higher degree. These findings are quite relevant signals for entities involved in the tourist phenomenon in order to strive for reliable content contributing to strengthening the trust of users.

RQ. 3. Information Sharing Through Social Networks
Respondents were asked to express their willingness to share their personal data. As noted in Table 5, the majority of the respondents considers it very relevant or relevant (85%). These findings fully corroborate earlier study of mobile online networks of Xiang et al. (2015) which shows how social networks applications are being used to facilitate novel inter-tourist interactions in the physical world in real time.

Nationality proved to be a relevant variable when the information about tourist destinations promoted on social networks is considered ($p < 0.01$), assuming the Brazilian nationality individual higher importance compared to other nationalities. This result should be read in the light of the composition of the sample constituted mostly by individuals of Portuguese nationality, signalling that information in social networks about domestic tourist destinations is mainly relevant for foreign tourists.

Table 3 Reliability of information and education level

Education level	Number of respondents	Mean
Under degree	49	143.62
University degree	120	120.37
Postgraduate	73	108.51
Total	242	

Source: Author's own table

Table 4 Reliability of information and education level as grouping variable (Kruskal Wallis Test results)

Chi-square	8.996
Gl	2
Significance Assint	0.011

Source: Author's own table

Table 5 Importance of sharing information through social networks

Variables	Frequency	Percentage
Not relevant	6	2.5
Neutral	31	12.8
Relevant	75	31
Very relevant	130	53.7
Total	242	100.0

Source: Author's own table

RQ. 4. Influence of Travel Comments Shared on the Internet on Selection of Tourist Destination

The influence of online travel comments on destination choice is perceived as very relevant by approximately 75% of the respondents (Table 6). These findings are in line with previous studies i.e. Fotis et al. (2011) who found that 45% of prospective travellers checked social media websites when searching for destination and some 42% sought ideas on excursions and other leisure activities. This highlights the importance of online comments during the process of selecting a holiday destination, therefore it is a clear signal for the need to shape tourism products which can promote positive experiences for holiday makers and visitors as there is a great potential of sharing their experiences and influencing future travellers.

RQ. 5. The Relevance of Mobile Devices During a Trip

Regarding the question, "Do you consider the use of mobile devices relevant during a trip?", results (Table 7) show the use of mobile devices are highly appreciated by these tourists, thus perceived as a relevant or very relevant tool during a trip. Going in depth on their perception of the relevance of mobile technologies and considering the respondents' age group of, it was found a significant statistical difference ($p < 0.05$) in assessing the relevance of mobile devices among all the age groups.

The age group average (25–49) assigns more significance, while the group 50 years old or more assigns less relevance. It was also found that the opinion about using mobile devices is influenced by respondent's education level, highlighting positively

Table 6 Influence do the travel comments shared on the internet

Variables	Frequency	Percentage
Never	2	8
Occasionally	12	5
Relevant	186	57
Very relevant	42	17.4
Total	242	100.0

Source: Author's own table

Table 7 Relevance of mobile devices during the trip

Variables	Frequency	Percentage
Not relevant	5	2.1
Neutral	27	11.2
Relevant	77	31.8
Very relevant	133	55.0
Total	242	100.0

Source: Author's own table

individuals with higher education level ($p < 0.016$). The group with the lowest education assigns less importance to the use of the smartphone. As in previous questions, these findings suggest that there may be an economic factor (hidden variable) associated to the group with lowest schooling level.

RQ. 6. Main Actions Using ICT During a Trip

As shown in Table 8 the majority of the respondents uses ICT to seek information on holiday destination and other places of interest (47%), followed by those who share photos, opinions and videos (29%). Thus, these findings corroborate previous questions analysis, where tourists, in general, use mobile technology for searching and sharing information and opinions on destinations and attractions.

RQ. 7. The Most Used Social Network to Share Trip Information

When it comes to social network to share trip experiences, as Table 9 shows respondents use various channels, with TripAdvisor being the most significant channel (58%), followed by Facebook, and Foursquare. Surprisingly only one individual of the sample mentioned booking.com. Overall, this seems to be in line with previous work such as, McCarthy, Stock, and Verma (2010), noting the use of different social platforms for different specific purposes.

5 Conclusions/Results

This study provides useful insights to tourism organizations managers and marketers for understanding traveller's use of ICT, highlights social media as a platform where travellers share their travel experiences and search for independent and trustful travel information. This may encourage tourism organizations managers to improve tourism product and its sustainability and marketers to recognize the need for developing

Table 8 Main action using ICT during the trip

Variables	Frequency	Percentage
Cancel or change bookings	1	0.4
Check-in, exchange of vouchers and other actions	8	3.3
Compare prices and or check the availability of accommodation	15	6.2
Communicate urgently with friends and/or relatives	24	9.9
View information about destination and/or places of interest	114	47.1
For reservations	6	2.5
Share photos, opinions and/or videos	71	29.3
Other actions	3	1.2
Total	242	100.0

Source: Author's own table

Table 9 Social network most used to share trip information

Variables	Frequency	Percentage
Facebook	38	15.7
TripAdvisor	141	58.3
Google+	8	3.3
Foursquare	37	15.3
Booking	1	0.4
Others	17	7.0
Total	242	100.0

Source: Author's own table

effective communication strategies, particularly through social media, which enhances/create a strong destination brand image, and thus contributing to its competiveness.

This study shows that ICT are used during all stages of the holiday planning process (before, during and after holidays) however, to a different extent and for a different purpose.

From the results, it is evident that TripAdvisor is the most use channel of social media, (58%) followed by Facebook. Furthermore, this finding is a clear indication of the role of this channel in influencing destination selection.

Since TripAdvisor is the most important channel of social media used to share data, tourism organizations managers and marketers should pay close attention to reviews of their hotels and other institutional and economic players of the destination, respond to both negative and positive reviews. Travel providers and marketers might need to develop strategies to encourage travellers to create content, so that while creating their travel memories also become agents of the tourist destination.

Smartphones are perceived as relevant or very relevant tool during a trip by approximately 86% of the respondents. However, considering respondents schooling level, it was found a statistical significant difference between low schooling and higher-level groups (degree and postgraduate), suggesting that the undergraduate assigns less importance to the use of the smartphone.

The majority of the respondents considers sharing data through social networks relevant or very relevant (85%), suggesting as in previous studies, such as Xiang et al.

(2015) that social networks are new channels for novel inter-tourist interactions in the physical world in real time. However, the reliability of information available on social networks is perceived as being reliable by just over a third of the respondents, whereas 47% reported to be neutral about it. Considering the importance given to ICT as a mean of getting information on tourist destinations, this finding highlights the need for the entities involved in the tourism phenomenon to promote actions to strengthening user's confidence.

Tourism destination management entities should consider and ensure the existence of an excellent online reputation as well as the appropriate means for sharing information on the most appropriate and complete tourist information possible.

The major limitation of this study is the sample. The small size of the sample forces caution in interpreting the results and it blocks its generalization. Another limitations are related to the data collection period, which occurred along the Christmas holidays, limited the number of responses collected, and finally, the absence of potentially relevant variables, such as the level of income, which would make possible to draw more adequate conclusions and define strategic implications for the management of tourist destinations in a competitive and sustainable way.

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