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Supply-side perspectives on digital technologies and cultural tourism experiences

ALEXANDRA I. CORREIA * [acorreia@estg.ipvc.pt]

RITA ALMEIDA ** [almeidarita.t@gmail.com]

ALEXANDRE ULISSES SILVA *** [ausilva@estg.ipvc.pt]

HUGO ALUAI SAMPAIO **** [hsampaio@ipca.pt]

Abstract | This paper aims to understand the perceptions of tourism entertainment businesses' owners/managers regarding the use of digital technologies for the provision, dynamization, and communication of cultural experiences to the market (including the families segment). To achieve this aim, a qualitative approach was adopted by conducting ten semi-structured interviews with tourism entertainment businesses' owners/managers operating in the District of Viana do Castelo, in Northwest Portugal. Participants were selected through a convenience sampling method after being initially identified as licensed by Turismo de Portugal at the National Register of Tourism Entertainment Agents, offering cultural experiences and with online presence. The interviews were transcribed and analysed manually, based on a systematic analysis matrix. The research shows that digital technologies are not used very often by businesses and that the ones they use are mostly related to promotional activities (Social Media and Websites). Disadvantages and barriers to its use are also acknowledged, such as the limited knowledge of the potetntial use of technology (by the supply side) or high costs associated to its implementation. Finally, practical and theoretical implications are highlighted, along with suggestions for further future research.

Keywords | Family segment, tourism-related businesses, technology, cultural experiences

* Instituto Politécnico de Viana do Castelo, Viana do Castelo, Portugal. Centro de Investigação, Desenvolvimento e Inovação em Turismo (CITUR); Unidade de Investigação Aplicada à Gestão (UNIAG). ORCID: 0000-0002-2965-4425
** Instituto Politécnico de Viana do Castelo, Viana do Castelo, Portugal
*** Instituto Politécnico de Viana do Castelo, Viana do Castelo, Portugal. ORCID: 0000-0003-4802-1508
**** Escola Superior de Hotelaria e Turismo do Instituto Politécnico do Cávado e do Ave, Barcelos, Portugal. Departamento de História do Instituto de Ciências Sociais da Universidade do Minho, Braga, Portugal. Laboratório de Paisagens, Património e Território (Lab2PT - UM). Laboratório Associado para a Investigação e Inovação em Património, Artes, Sustentabilidade e Território (IN2PAST - UÉvora). Centro de Investigação, Desenvolvimento e Inovação em Turismo (CiTUR - Coimbra). 000-0002-9272-0720

1. Introduction

Technology is a crucial driver of change in an era of ever-increasing novelty-seeking tourists and has become critical to the tourism industry. As stated by Chiao et al. (2018), technological innovation in tourism aims to meet the growing need for exceptional tourist experiences. Therefore, service providers in tourist destinations or tour operators are increasingly investing in new sales channels or reorganizing their production processes for travel and leisure activities in the virtual environment (Oncioiu & Priescu, 2022).

The demand for cultural experiences is increasing as tourists seek immersive experiences in the local culture, specifically in a heritage-related context (Bec et al., 2019). The use and application of technologies in cultural experiences have been increasing (Richards, 2018), and the use and optimization of digital technologies are considered highly beneficial to the demand and supply sides. Furthermore, digital content and technologies (e.g., augmented, virtual, or mixed reality) create a user-friendly digital experience and build a positive perception of a travel destination (Kim et al., 2020).

However, little knowledge exists on how Virtual Reality technology, for example, can be applied in themed tourism environments (Lin & Yeh, 2022), and influence travel intentions (Oncioiu & Priescu, 2022). Moreover, research on the use of technologies in providing cultural experiences by tourism-related businesses is still scarce, particularly when specific market segments are targeted, namely families. Although this segment represents a growing and relevant market for the tourism industry (Schänzel & Yeoman, 2014) due to the recognized importance of creating family memories and togetherness, families have been neglected, either from a scientific research perspective or from the perspective of action plans and tourism marketing plans (Canalis, 2015).

Therefore, this research highlights the significance and the need for more studies to understand, develop and promote cultural and technology-based experiences. Given the above, the research questions are: (i) do entertainment tourism-related companies use digital technologies to create, stimulate and promote cultural-related experiences? If so, (ii) how do they perceive them (including their usefulness and importance to their business)? Thus, this paper aims to understand the perceptions of owners/managers of entertainment tourism-related companies regarding the use and usefulness of digital technologies for providing, dynamizing, and communicating cultural exoperiences. This reseach particularly important when the effects of the COVID-19 pandemic will have a lasting influence on tourism and shape travel behaviour for generations (Oncioiu & Priescu, 2022).

This research is structured as follows. Section 2 presents the literature review; Section 3 provides the research methodology; Sections 4 describes the results and present the discussion. At Section 5, conclusions and empirical and theoretical contributions are outlined.

2. Literature review

2.1. Culture, Tourism and Experiences

Culture is associated with a group of people or civilizations' particularities and relates to literacy, arts, and heritage (Rodrigues, 2018). Thus, one can conclude that culture is a set of communal identity elements like, for example, gastronomy, traditions, material and immaterial heritage, and even customs transmitted from generation to generation. Being culture the heritage of our ancestors (Duarte, 2016), it is fundamental to distinguish different communities and groups of people, since each has its identifying traces (Ferreira et al., 2012). Moreover, Cultural tourism accounts for a large number of touristic travels (Richards, 2018).

Experiences are considered trendy in Tourism (Kim & So, 2022) and meant to provide transformative (Buzova et al., 2020) and memorable moments (Kim et al., 2012), even more when focusing on families, a growing market segment in the industry (Schänzel & Yeoman, 2014). According to Lemon and Verhoef (2016, p. 70), experience is a set of sensorial, emotional, behavioural, cognitive, and social responses to something offered within the journey of purchase. Developing cultural tourism into an experiential offering promotes the design and promotion of well-balanced and harmonized experiences (García Henche, 2016). The increasing valorisation of cultural heritage and companies' concern with providing immersive experiences for their customers encouraged Creative Tourism, that allows learning and contacting with endogenous resources (Ohridska-Olson & Ivanov, 2020).

The boosted use of technological devices and apps in Tourism made them part of the trip-planning phase, the trip itself (Solima & Izzo, 2017), and after, for example, the usage of Social Media apps (like Facebook, Instagram) or online platforms (like TripAdvisor or Booking). The available technology also enabled the consumer to manage travel and accommodation services (Del Chiappa et al., 2015), cutting the intermediation of traditional travel services. In cultural services, the use of technology has become even more vital. If it was already taken for granted that the gathered information helps the consumer with any logistical issue (Parry, 2010), the pandemic situation improved even more these expectations, with museums, for example, offering online virtual visits and content before, during, and after the visit (Solima & Izzo, 2017). Ultimately, the digitisation of cultural heritage also serves to increase the final cultural consumers' experience (Richards, 2018).

Regarding cultural experiences, it is now assumed that tourism is based on creating experiences, since they allow emotions and involvement and, at the same time, include entertainment, aiming to provide memorable times (Zarem, 2000). However, an experience is always personal, depending on the consumer's emotional, physical, intellectual, and even spiritual state, and is never the same, nor repeatable, having meaning to each person (Perttula, 2007). In some cases, the person can even feel different after the experience, acquiring new memories (Santana, 2008).

An experience is influenced, among other factors, by motivation, experience, or the personal knowledge of the consumer. Besides, tourism experiences can improve life quality, and it is an opportunity to absorb and dive into new places, enrich the visitors, and approach tourists and local populations (Frias et al., 2017). Furthermore, since the tourism experience affects future behaviours, the word-to-mouth and the intention to repeat the same activity become even more critical (Chen & Chen, 2010; Zhang et al., 2018).

Moreover, the internet had an impact on the search for information by tourists and, lately, in its behaviour, especially during travel planning (Xiang et al., 2014). Using technologies can contribute to improving tourism experiences to the growing search for differentiation (Chiao et al., 2018), enhancing new levels of quality and originality, maximizing the available possibilities, and introducing new forms of creating experiences in all the different phases (i.e., pre-, during, post-trip). This is particularly important during the third phase of the tourism experience, namely, the "post travel,"when tourists remember and share all what they experienced and lived in their travel and experiences (Neuhofer-Rainoldi, 2014).

However, there are also some disadvantages to using technologies that may be divided into four categories: emotional (related to harmful experiences when using technology); lost opportunities (inaccessible to technology and devices); behavioural troubleshooting (leads to traditional methods of access to information) and financial (additional costs in accessing technology) (Neuhofer-Rainoldi, 2014).

2.2. Digital technologies applied to Tourism

The application of technologies in tourism is discussed in various areas, including planning, management, marketing, communication, education, and heritage preservation (Jorge et al., 2023). The rapid growth of technologies and demand from tourists to have a personalised experience have contributed to their adoption in Tourism (Gössling, 2021). The quick technology advances mean that tourism companies must continuously adapt to new developments (Filgueiras & Almeida, 2020) to maintain their competitiveness. Indeed, suppliers in the tourism industry are progressively acknowledging the importance of connecting with potential tourists and influencing their travel decisions through innovative experiences and information access (Jorge et al., 2023).

Digital technologies are used for different purposes, ranging from the possibility of creating new digital products and business models (Zentner & Spremic, 2021), but also as a tool for improving more traditional businesses, reaching consumers by different channels available in the digital context (Oncioiu & Priescu, 2022). Although some identified cases in which the application of digital technologies to tourism has malicious intentions (Kwok & Koh, 2021), they are now a key aspect to be considered when developing a tourist product or service. Despite all this, the abuse or misuse of technology is challenging and can lead to a lack of human contact (Ivanov, 2020). Although tourism agents recognise that the human interaction adds the most significant value to technology, the lack of it, the cost of technology, and safety/privacy-related issues are perceived as disadvantages of technologies (Sampaio et al., 2021; Lin & Yeh, 2022).

Several examples show that cultural experiences benefit significantly from applying digital technologies. For example, museums that were once repositories of know-how and history are now becoming providers of experiences in which playing and interacting with the exhibition and the collection using digital technologies is a crucial part of the visit (Leoni & Cristofaro, 2021, Romolini et al., 2020).

Therefore, it is essential to reflect on how the advances in digital technologies have contributed to the development of tourism and impacted tourists and companies. For the review of related work in this area, four categories were considered that have contributed, in recent years, to the development of many applications in tourism: Big Data, the Internet of Things, Artificial Intelligence, and Immersive technologies (AR, VR, XR).

2.3. Internet of Things

The Internet of Things (IoT) is based on creating networks that can connect to anything, anytime, anywhere. These networks include different types of physical objects ("things") that connect with other devices using the Internet (Car et al., 2019). Furthermore, they contain embedded technology to communicate, sense or interact with the external environment (Gartner, 2012) (Mingjun et al., 2012). IoT uses Radio Frequency Identification (RFID), Wireless Sensor Network (WSN), and 3G/4G/5G mobile communication to identify, locate, track, monitor, and generate smart objects. It is, therefore, a global infrastructure for the information society, enabling advanced services by interconnecting "things"that have identities, physical attributes, and virtual personalities (Guillemin & Gusmeroli, 2008; ITU, 2015).

IoT is significant in the context of "smart tourist destinations"(Buhalis & Amaranggana, 2015; Gretzel, Werthner, et al., 2015; Cimbaljevic, Stankov & Pavluković, 2018) as it favours the creation of sustainable cities, which are connected through various networks. These cities use technologies to collect, integrate and explore data to optimize physical infrastructure and resource production and consumption (Koo et al., 2015; Batty et al., 2012).

Furthermore, smart tourist destinations aim to improve the quality of life of the city's citizens and tourists, as they facilitate access to different types of services, such as real-time information about the public transport network (Buhalis & Amaranggana, 2014).

IoT networks can be used to efficiently monitor tourist preferences (Wang et al., 2016), and to manage visitors' impact in historical places. The gathering of data from sensors, which is then made available to the visitors' smartphones, can also contribute to their experience (Buhalis & Amaranggana, 2015). New IoT technologies such as beacons emit a signal that a smartphone can receive, and it can also be used to trace the tourist in a given location and then provide more meaningful content (Carvajal-Trujillo, Molinillo & Liébana-Cabanillas, 2020; Torres-Ruiz et al., 2018). In museums, the use of sensor networks can determine the amount of time each visitor spends in a particular room of an exhibition and, therefore, understand the most impactful locations of a visit (Pierdicca et al, 2019; Moussouri & Roussos, 2014). Location identification can also be used to enhance the experience of using multimedia museum guides (Tsai, Chou & Lin, 2008). It is also possible to take advantage of the IoT open data from a particular location (e.g., city) to develop mobile applications, where you can include information such as points of interest or gastronomy (Sun et al., 2016).

2.4. Artificial intelligence

Artificial Intelligence (AI) is a technology that relies on developing computer programs based on artificial networks formed by millions of virtual brain cells (Mura et al., 2017). Instead of using human intelligence, tasks such as making decisions or interpreting speech are performed by computers. Nowadays, it is common to blend the terms AI and machine learning as, in several applications, the usage of AI requires that the computer can learn through techniques such as neural networks (Alpaydin, 2016). AI helps to analyze data, add value to it, and turn it into meaningful information (Ferreira, 2020).

The advantages of applying AI to Tourism are diverse. Creating digital models to forecast tourism demand is one of the main areas of application (Peng, Song & Crouch, 2014), as it allows businesses to evaluate their offers based on automatic predictions that use the model. Predicting what tourists want (Novianti, Susanto & Rafdinal, 2022), how they want it and when they want it is one of the most critical aspects of guaranteeing tourists' satisfaction and increased revenues of smart destinations.

The prediction of tourists' behaviours is deeply connected with another usage of AI, namely through implementing recommendation and personalization systems. This recommendation system can be used in different phases of the tourist journey, such as during check-in (Kesorn, Juraphanthong, & Salaiwarakul, 2017) or to recommend tours and itineraries (Lee et al., 2022). There is also a growing interest in social media network analysis as they provide essential elements of the tourist way of life, essential to sound recommendation systems (Chang et al., 2022).

Finally, another critical aspect in which AI can revolutionise Tourism is using virtual travel assistants, service robots, or chatbots for replicating humans. Digital avatars, impersonating real persons, such as curators or visitors, can be used to storytelling and introduce tourists to a particular element of knowledge (Sylaiou et al., 2020). The same can be achieved with chatbots (Gaia et al., 2019), although the interaction is much more limited in this case, as most applications require text-only communication. On the other hand, robots try to impersonate, not only the communication between humans, but also replicating specific mechanical tasks. Experiences of using service robots in cultural tourism and hospitality are promising,

but still scarce, as their usability and utility are still not yet fully proven (Lupetti et al., 2015; Ivanov et al., 2017).

2.5. Immersive Technologies

Immersive technologies, such as virtual reality (VR), augmented reality (AR), and mixed reality (XR), are technologies that conjugate virtual content with a physical environment. In recent years, immersive technologies have gained significant importance in Tourism due to their advantages in improving the experience. These immersive technologies offer customers additional information, interactive experiences, mental images of destinations, visual behaviour, and immersive and enjoyable experiences (Fan et al., 2022).

Virtual Reality (VR) consists of three-dimensional representations generated by a computer, closer to the users' reality, in which the user can "navigate"and interact. VR is basically a virtual computer simulated world (Desai et al., 2014; Gutiérrez et al., 2008; Guttentag, 2010) and reduces the barriers between what is "real"and "virtual"(Steinicke, 2016).

VR is increasingly used in Tourism, as it can have a direct influence on the customers and be used to enhance experiences, create full immersion environments, engagement, and entertainment, improve social interactions and connectivity, personalize the offered services, attach persons to places and to stage experiences (Tussyadiah et al., 2018). Furthermore, VR is used to understand how visitors express their inner values and meanings through VR-themed tourism (Lin & Yeh, 2022). Moreover, VRis also being used in the context of destination tourism marketing, specifically to create a detailed image for a destination, communicate consistently, and develop future scenarios for VR as a decisive factor for strategic planning in the sector. Also, VR apps are more capable of triggering emotional reactions (Oncioiu & Priescu, 2022). Through VR, advertisers stimulate the desire to relax, adventure, or explore, and VR offers tourists opportunities to experience the holiday destination (Guttentag, 2010).

This type of technology is especially relevant when focusing on cultural heritage (Bekele et al., 2018) for its preservation (Tussyadiah et al., 2018). Furthermore, VR is a mediator between the place and the tourist and improves the overall satisfaction of visiting a particular place (Jung et al., 2016). Furthermore, can contribute to better understanding and learning (Moorhouse et al., 2017) by increasing the tourists' curiosity and excitement in trying out new technologies and immersing them in virtual worlds in which they are the protagonists.

Furthermore, VR, combined with AR, also known as XR (mixed reality), is a combination between natural environment and digital content with the help of technical devices, and can vary from the natural environment without complete digital immersion (Oncioiu & Priescu, 2022). At the same time, immersive technologies, especially AR, can enhance cultural exhibitions (Chang et al., 2014) by adding new layers of information to the existing contents, like giving another life to a painting (Pierdicca et al., 2015). At the same time, other types of immersive applications focus on reconstructing places and objects that existed in the past or facilitating the exploration of archeological sites (Girbacia et al., 2013; Saggio & Borr, 2011; Münster et al., 2017). For example, a building already in ruins can be virtually reconstructed and visited, as the tourist pointing their cell phone can see a monument how it was at its peak (Silva, 2015).

2.6. Big Data

Data is everywhere, and the success of any company must optimize the usage of its data, so data analysis and interpretation are necessary (Hashem et al., 2015; Boyd & Crawford, 2012)

to obtain essential business information. Although data is present, in some way, in all digital technologies, when the amount of data to be analysed is significant, it is called Big Data (BD). BD proves to be crucial for companies, largely due to the amount of data generated and subsequently interpreted, as it allows to make timely decisions and save money, optimizing their operations (Zaslavsky et al., 2013). It is, therefore, an opportunity for Tourism since it is possible to extract information, understand patterns, behaviours, and possible trends from the data collected and analysed and, consequently, use it to generate more revenues (Tabares & Hernández, 2014). With BD analysis, tourist companies can predict customer preferences and channel consumer behaviour (Grundke et al., 2017) using other technologies, such as AI.

Tourism is a complex system that encompasses operation, such as online searches and reservations and different types of data are generated for each one. BD analysis helps to understand tourist behaviour and improve tourism marketing (Li et al., 2018, Cohen et al., 2013).

BD in tourism activities can be classified in three different categories (Li et al, 2018):

(i) User generated data – this refers to data (text and photos) generated by users mainly in the internet and social media channels. Text data of importance to Tourism and cultural experiences encompasses products and services reviews or focused blogs, typically referring to customer satisfaction (Liu et al., 2017) and assessing the overall experience of visiting a cultural attraction (Pearce & Wu, 2015). In addition, sharing photos that record a visit to an attraction or venue is also an important source of information (Vu et al., 2015).

(ii) Device data – this refers to data generated by tourist devices and encompasses GPS, mobile roaming, Bluetooth, RFID, and WiFi (Li et al., 2018). For example, GPS can be used to track tourists and understand visitor behavior (East et al., 2017) in different places, like a historical site, a city, or a zoo (Birenboim et al., 2015), while bluetooth data can be used to analyse tourist flows in city festivals (Versichele et al., 2012) or museums (Yoshimura et al., 2014).

(iii) Transaction data – this is a kind of data that deals with user transactions, such as web search, website visits, booking, and/or purchasing products or services, and it can be used to predict patterns, understand behaviours, search engine optimization, and marketing (Li et al., 2018).

3. Methodology

This research adopts an exploratory analysis. Data collection consisted of in-depth semi-structured individual interviews. Such technique allows for data collection in a flexible way and respondents' natural settings while keeping the interview guide to obtain responses on the key focal points of the research (Creswell & Poth, 2016).

The interview guide consisted of the following parts: I. Characterization of the offer: current situation; II. The use of digital technologies in the offer: current and future situation; III. Communication and data management: now and in the future; IV. Characterization of customers: current and future situation; V. Perception/experiences of the respondents concerning technologies; and VI. Characterization of the company.

The Viana do Castelo region was selected visitors because it is a region were one of the major motivations of visitors is the regional cultural heritage (Fernandes & Rachão, 2014).

Companies were selected based on consulting the Tourism Entertainment-related Agents Regis-

ter (RNAAT). This step was necessary to determine which were the tourism entertainment companies that were based in Viana do Castelo and that offered cultural experiences in this region. Then, an Excel table with one hundred and eight companies was exported. All companies' websites were then consulted and verified to identify the ones offering cultural activities and it was verified that micro-sized companies represented the large majority of the results, with fewer than 10 employees. It was also confirmed which companies were operating and which had an online presence, resulting in eighteen eligible companies proceeding to the interview.

After the companies' selection, a pre-test was conducted in the Porto region (70 km from Viana do Castelo). The choice of Porto city was based on: it is the most important tourist stopover before reaching Viana do Castelo, the Franciso Sá Carneiro airport; it is one of the main cultural attracting destinations in the north of Portugal, having several companies offering cultural experiences. Moreover, it avoided contact repetition when contacting companies in Viana do Castelo. Given these reasons, Porto city was considered a good option for the pre-test.

Companies were selected based on a convenience sampling technique. The interviews were conducted with the companies' owners/managers, who run and manage the business and work directly with the clients. All interviews were conducted online (via Zoom software), with an average duration of 45 minutes and were recorded with the permission of all interviewed. In total, ten interviews were conducted, between July and August 2020, to tourist entertainment companies in the district of Viana do Castelo.

Based on other studies, e.g., Melo et al., 2019, members of the research transcribed the data. Data analysis was conducted manually and used a conventional content analysis, which allowed for cross-checking the themes on the interview guide and identifying emergent themes and consistency. Finally, the answers were organized and coded by interviewees (I#1, for example).

The profile of respondents and their companies are presented in Tables 1 and 2.

For those responsible for the company, I#1 refers to that their most outstanding competence is persistence, I#2 and I#8 refer to polyvalence, I#3 to versatility, I#4 to innovation, I#5, I#6, I#7, and I#9 refer to the ability to be good managers, and I#10 to the communication aspect. Most respondents (n=6) have more than 10 years of experience in the sector, and the remaining four have less than 10 years. Except for I#6 and I#9, the remaining interviewees have high education.

Table 1 | Respondents' profile

	I1	I2	I3	I4	I5	I6	I7	I8	I9	I10
Academic degree	G	G	M	PG	G	HS	G	G	HS	M
Age	42	32	41	57	32	57	45	52	41	49
Years of experience	18	8	20	15	12	3	2	15	5	30

G=Graduation; M=Master's degree; PG=Post Graduation; HS=High School

Table 2 | Sample companies' profile

	I1	I2	I3	I4	I5	I6	I7	I8	I9	I10
Years of company existence	14	8	3	10	1	3	2	5	5	7
Number of employees	3	2	3	8	4	1	3	1	1	1
Average age of employees	28	32	40	35	35	57	40	52	41	49
Academic degree of employees	G	G	M	G	G	HS	G	G	HS	M

Graduation; M=Master's degree; HS=High School

4. Findings

The present analysis will be divided into five groups, in line with the research questions and interviews. All respondents say that they are comfortable with digital technologies and think that cultural experiences are a factor that will help in the recovery of the pandemic context. Companies' offer is mainly Cultural Tourism activities (e.g., I#1, I#5, I#8), with well-being-related activities as complementary products (e.g., I#10).

Supply characterization of the current situation

The supply differentiating aspects mentioned by the respondents are mainly the quality of the service (n=7) and the personalization of the service (n=5). As mentioned by I#8, "personalized care and service is the basis, because in this area people look for people and seek to be understood in the best way, with the best possible quality. We work with people and for people". Other respondents also mentioned the specialization of the product and the link to creative tourism (I#3), the type of product, and the geographic area where experiences are provided (I#9). Moreover, cooperation between companies and local communities is pointed out as an added value for Tourism in the region (n=9). I#2 says: "The region is made up of people, traditions, and ways of life. Therefore, integration with the local community is crucial for us to succeed and for the region to grow in economic terms, for example", along with the increasing recognition of Northern Portugal as an attractive destination (I#4). Although respondents referred to the importance of the existing products/experiences, the majority (n=9) agree that there is still room to complement the companies' supply. Four respondents use interaction, games, and entertainment to attract the children's attention. The other four respondents mention that the product is already appealing to children, and lastly, I#6 uses friendliness and empathy to attract children. All interviewees agree that children are a demanding public and that need a specific supply without long breaks (I#1) to increase their motivation (I#10). As stated by I#9, "Children need something that stimulates them, that awakens and excites them. We have to be able to do that in a way that attracts their attention".

The use of digital technologies in the provision of experiences: current and future situation

Respondents agree on the need to understand trends and adapt to them. However, none of the interviewees uses digital technologies in the company. Yet, one of the respondents is already investing in a project related to technology and cultural experiences (I#1). Three other interviewees consider using technologies, even though they highlight that the significant investment needed is beyond the company's capacity. For I#4, "it will likely be a significant investment in our company's capacity. It would be interesting to apply these technologies, but it would have to be a well-founded decision". I#2, I#5, and I#6 point out the use of technology only in a promotional aspect, whereas I#8 states that technology can be a complement to the experience and never a replacement. As said by I#10, "We have to adapt to times, customers and trends. Nevertheless, one must remember that the human factor can never be replaced in this area but complemented".

Communication and data management: currently and in the future

All interviewees communicate the company's offer through the website and social networks, namely Facebook, which is considered the most appropriate means to achieve the company's goals

(n=6). All interviewees stated that the type of product differentiates them from competition (I#2, I#9, and I#10). I#2 says that "It is not the way we communicate that sets us apart. Our product sets itself apart from the competition". In addition, I#4 argues that "We need to communicate better and explore other ways/means of communicating and reaching people. We have a world to discover".

Except for I#8, who thinks that their communication is sufficient, the other interviewees agree that they should improve their communication and be able to follow market trends.

Four interviewees indicate that the existing means of communication are sufficient for customers to make a reservation. The remaining interviewees consider that customers need more to be attracted and that companies must adapt to the dynamic and current market: "We must adapt to the increasingly demanding market with so much on offer. Thus, we must reach the customer more attractively and demonstrate the idea of the experience we are selling", says I#7. This is also explained by I#9, who reinforces that customers need to preview the product/experience before making a reservation, and I#5, that mentions that customers need to understand the type of product companies provide.

As for data management, four interviewees stated that they do not keep customer data. I#2, and I#5 keep it in an Excel file. I#7 hires an outside company for this purpose, I#4 stores it in the reservation management platform, and I# 6 and I#10 have an internal database. I#1, I#6, and I#8 do not send customer newsletters. They see them as obsolete and inconvenient: "We give up our newsletters. They constantly fill our mailbox with advertising, and just as I do not have the patience to see everything, neither do my customers", justifies I#1. I#9 and I#10, although they do not send newsletters yet, the company plans to implement this feature because of the need to attract more customers. The remaining interviewees send newsletters, merely informative, to communicate the company's schedule of activities. The interviewees, managers of small companies, see the implementation of digital technologies as quite expensive for their reality. However, they recognise the importance of following market trends (n=8). Due to a lack of knowledge, I#4 mentions that he also does not know how technology could help. One of the significant advantages that I#1, I#4, and I#7 see in using AR and VR is serving as a tool to promote the company's activities, helping customers understand what they will see. These technologies arouse curiosity and preview the type of products and services companies sell, since "These tools help to stimulate the visitor's imagination and to understand what they will experience", adds I#4.

Seven interviewees recognized that using technology would be feasible, forgetting the economic factor, and it would be an attractive way to captivate the customers' attention. As for implementing virtual assistance on the website to help with reservations or obtain information, they believe that a virtual assistant would not be able to meet this need because the products marketed are so customizable. However, they see this tool as an added value (n=5): "It may be interesting, but as we customize our products a lot, the virtual assistant would have to go in that direction", justifies I#3. As for I#1, the company already implemented this tool on the website, and the other interviewees consider the idea fascinating. Except for I#7, who do not see data analysis as essential in the future, the remaining agree that knowing the customer, and customizing programs and target products, is crucial: "Collecting and managing data is essential for the positioning of any company. It is an asset to communicate with customers and direct our offers", states I#3.

Characterization of clients: current and future situation

The motivating factors for family trips are culture, knowledge acquisition, and gastronomy (I#5 and I#10), breaking the routine (I#10), and having a positive experience (I#7), specifically by having different and special moments with conviviality, so as intergenerational learning, well-being, and bonding among family members (I#9).

Considering their motivations, families try to combine some physical activity with an educational part (I#1) and contact with nature (I#2). Their expectations focus on quality, having fun and enjoying the place where the activities take place (n=7).

I#3 and I#4 do not currently work with this segment. I#4 stresses that the company will not work with families since they provide a self-guided format, implying working in another way, and that the profitability of this segment is not essential for the company.

All interviewees, except I#4, believe that families are an essential segment for the industry's recovery in the post-pandemic scenario. Families are smaller groups and there is a greater safety perception among the participants (I#1 and I#10). Despite the recognized importance, families are a neglected segment (I#3).

Respondents' perceptions/experiences regarding technologies

None of the respondents is familiar with other digital technologies (AR, VR, AI have already been addressed). Nevertheless, they believe it will make sense to implement digital technologies in the company, for example, to enhance promotion (I#2). However, once again, it is reinforced the economic factor has a significant impact on a microenterprise: "We are a micro company. Us and most of the tourist entertainment in the region. It is a big investment, possibly", says I#3.

Except for I#4 and I#8, who have never participated in any activity using digital technologies, all interviewees have, namely an experience using VR. This kind of experience attracts more attention, makes it more captivating (I#9), allows customers to participate in the experience differently (I#4 and I#7), and provides more and better information to customers (I#5).

All interviewees consider digital technology as a complement to experiences. I#7 adds that "in the physical experience, things escape us, and with the virtual experience, we can see and review what we have done and complete the physical experience, adding value". I#2 and I#9 state that these technologies would be more critical in terms of company communication. In turn, I#1 and I#10 state that technology should not replace the guide because human contact and interaction are the basis of the experience.

When asked if the company's human resources would adapt well to digital technologies, all interviewees answered affirmatively, adding that with training, everyone can adapt.

Finally, given the above, I#1 notes the importance of understanding how information based on a QR codes, for example, can be presented. I#2, due to the places where activities and experiences occur, only sees the lack of network/internet as an inconvenience. I#3 believes that being able to see a landscape as it used to be, using digital technologies, would be an added value to the customer's experience. I#4 says that the examples presented do not make much sense to the company, since the target audience is senior. However, this respondent also states that in 10 to 15 years, the senior customer will already be more connected to technologies than today. I#5, I#6 and I#7 believe it is a tool to deepen the experience, and would result in advantages for the customer, more attention, more knowledge, and more involvement: "In my opinion, it was a more interactive experience and is a complement to the guide and does

not make a visit as boring", adds I#6. I#8 and I#10 find the possibility of using these technologies interesting but underline that the goal is to forget about technologies when they are in an experience with customers. However, the hypothesis of adopting technology in their companies is not excluded, mainly when it is relevant to complement the experience, making it more appealing for the customer.

5. Discussion and Conclusion

This study aligns with the literature by highlighting the importance of technologies to cultural-related tourism experiences (e.g., Kim et al., 2012; Buzova et al., 2020; Kim & So, 2022) and by noting the scarcity of studies researching the use of technologies in providing cultural experiences by tourism-related businesses and including approaching.

Results show that, apart from cultural-related activities with an educational part, tourists, as families with children, try to combine their experiences with physical activity and contact with nature. Their expectations focus on quality, having fun, and enjoying the place where the activities take place. Thus, this study contributes to the existing knowledge, specifically in the context of tourism entertainment companies offering cultural experiences.

Moreover, and in line with the literature, this study shows that tourism entertainment companies recognise that technologies are becoming necessary to attract and engage with customers in a more appealing and differentiated way, as they arouse curiosity allow previewing the offer, and provide more and better information. Some of interviewed companies use interaction, games, and entertainment to attract the children's attention. However, this research also shows that technologies are perceived as a complement and not a replacement, supporting the literature (e.g. Tabares & Hernández, 2014; Sampaio et al., 2021; Chang et al., 2022; Lee et al., 2022).

Moreover, this study reveals a limited knowledge of of VR, AR, and AI and a minimal usage by entertainment tourism companies of these specific technologies. This reduced investment in digital technologies may be related to companies' small size, the investment needed beyond the company's capacity, their perception of the human element as critical for their differentiation and competitiveness, and the characteristics of the sample (e.g. micro-sized companies).

Nevertheless, the adoption and usage of technologies are relevant for communication, as companies use mostly websites and social media (notably, Facebook) to reach their customers, which is also in line with the literature (Zhang et al., 2018). Regarding data analysis, companies consider that technologies are essential to know the customer and customize programs and target markets in the future. However, companies tend to analyse customers' data using their systems (e.g., Excel) or contract outsourcing companies. This indicates that, despite their perception of the importance of data analysis, they prefer to contract with other companies specialized in data management and research. This might suggest that companies are aware of the complexity of this area.

This research highlights two main theoretical contributions. The primary contribution relates to understanding the level of usage of digital technologies by tourism entertainment companies in designing, promoting, and delivering cultural experiences. The research shows that digital technologies are not used very often by these type of companies, and that the ones they use are not in the front row of digital innovation and are mostly related to promotional activities (social media and websites).

The second significant contribution from this work is directly connected with the perception of the companies about the usage of advanced digi-

tal technologies such as BD, VR, AR, or AI. The study shows that the owners/managers of tourism entertainment companies have a positive perception regarding the application of digital technologies when considering the delivery of cultural experiences, including to families with children, but consider that they are either too costly or too difficult to be implemented in their small businesses. The study also shows a limited perception of the full range of benefits and applications that can be used as advantages when using advanced digital technologies compared with the works described in the state-of-the-art. Nevertheless, the results obtained could provide destination managers and entertainment tourism-related companies with a better understanding of the potential benefits and use of technology, hence improving their ability to provide cultural-related experiences to different markets.

This preliminary study presents some limitations, such as the covered geographical region, the dimension of the tourism companies, and the sample size. Further research could widen the analysis to include other regions and companies with different characteristics. In addition, a comparative analysis with other regions and countries could also highlight new results that were not noticeable in this study.

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