Technology Acceptance and Readiness among different Generations of Urban Tourists

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THE AIMS OF THE PAPER

Several motivators and inhibitors for technology acceptance and readiness have been identified, however, propensity to use digital tools can vary according to different factors, one of them being the users' age. This study seeks to explore the technology acceptance and readiness of different generations of tourists in an urban destination.

METHODOLOGY

This qualitative study comprised 94 face-to-face interviews conducted during autumn 2019 and the spring of 2020 (before COVID-19) to foreign visitors from different age groups close to the main attractions in Budapest, Hungary. Interviews gathered visitors' thoughts, experiences, and perceptions about tourism and technology. Interviews were audio recorded, transcribed and content analysed applying a deductive approach.

MOST IMPORTANT RESULTS

Baby Boomers are more inhibited than motivated in terms of technology readiness due to the lack of technical knowledge and challenges of use. Generation X are more optimistic about the usage of technologies driven by convenience and social influence. Younger generations use a wider range of digital tools while travelling due to greater levels of optimism and innovativeness. However, some participants from Generation Y1 and X consciously limit the use of technologies as they consider them disruptive. Findings also show that motivators tend to be more closely related to utilitarian rather than hedonic factors for all generations. Smartphones and Google Maps are the most used digital tools.

This novel study focuses on different models and approaches for technology acceptance and readiness from a generational perspective exploring the so-called 'digital gap'. Furthermore, this study explores the correlation between different determinants of the proposed models. The context of an urban destination is also relatively novel, as many previous studies have focused rather on individual sites.

RECOMMENDATIONS

Urban destinations should facilitate conditions to encourage acceptance and readiness of technology among urban tourists. This not only includes digital infrastructure (e.g. WI-FI), but digital solutions and apps (e.g. tour guides in different languages) designed to attract different target markets (i.e. generations).

Keywords: technology readiness, technology acceptance, generations, digitalisation, urban tourism

INTRODUCTION

ICT (Information and Communications Technology) has been an important driver of the improvement of tourism services and destinations for decades, but nowadays it is an integral part of the entire tourism service process (Buhalis 2020). Digitalisation can play different roles in tourism experiences from being a driver through assisting and mediating the processes (Femenia-Serra & Neuhofer 2018). This interaction is highly important, but it has been a relatively underresearched area, particularly with regards to different generations. Besides the proven fact that technology has several positive impacts on generating experiences in a destination (Gretzel *et al.* 2015, Neuhofer *et al.* 2014), there is a lack of information on how different generations use digital devices (Confente & Vigolo 2018, Hysa *et al.* 2021), how stuck they are to their smart phones, and what are the negative impacts they perceive (Egger *et al.* 2020). Due to fierce competition in urban tourism, cities have been motivated to innovate and revitalise tourism experiences, particularly with the help of digital tools (UNWTO 2018). Through digital channels and social media, new services and experiences can be reached easily even in complex destinations like cities (Šegota *et al.* 2019). In the post-COVID-19 era, cities face new challenges having shifted suddenly from overtourism to zero tourism and then welcoming back a gradual stream of visitors but with COVID-19 restrictions in place. One of the key questions following this intense period of lockdown, restricted travel and increased online experiences is how to target the diverse segments who visit cities and to generate optimal experiences for them with or without digital devices (Bui *et al.* 2021, Coronel *et al.* 2022, World Tourism Cities Federation 2020). Based existing models of Technology Acceptance (TA) and Technology Readiness (TR), the study addresses these gaps and seeks the following objectives:

1. To identify the main motivators and inhibitors that drive technology acceptance and readiness for different generational groups when visiting urban destinations.
2. To examine the positive and negative experiences of using technology among different generations of tourists.
3. To make recommendations for technology adoption and usage for different generations of urban tourists.

LITERATURE REVIEW

Digitalisation in Tourism

Tourism development has been supported by information and communication technologies since the 1970s, ranging from facilitating transactions between suppliers and consumers to being an active mediator of human experiences (Wan 2018). Internet access in destinations is essential for tourists when planning their trips and ICTs are also providing important tools for managing destinations (Liberato *et al.* 2018). Smart phones and their apps have clearly revolutionized travel from anticipation, through planning or purchase, to co-creating on-site experiences and even the management of subsequent memories (Buhalis 2020, Shen *et al.* 2020). There is also an increasing tendency to use social media at every stage of the journey: before (for planning), during (for realising), and after the trip (for sharing travel experiences) (Hysa *et al.* 2021). Regarding communication and market research, social media has opened a totally new way of getting to know and targeting potential tourists (Hausmann & Weuster 2018).

Besides the positive impacts, long-term use of digital devices can affect the tourist experience negatively (Stankov & Gretzel 2020). People from all generations tend to record and share their journeys with the help of digital tools and social media aiming to preserve memories. However, such practices during the trip may cause the contrary effect preventing individuals from remembering experiences (absent presence) and hence impede their enjoyment and engagement with the setting (Coca-Stefaniak 2019, Tamir *et al.* 2018). On top of that, extreme reliance on technology for geolocation is detrimental to location skills in the absence of digital tools (Coca-Stefaniak 2019). Consequently, recent research is focused on digital-free tourism, and the multiple benefits of a digital detox especially on the tourist's well-being (Egger *et al.* 2020, Floros *et al.* 2021).

Technology Acceptance and Readiness in Tourism

Dorcic *et al.* (2019) show that consumers tend to adopt mobile technologies and applications for tourism if they consider them useful, easy to use, and compatible in tasks such as searching for travel information, purchasing travel-related services, making hotel reservations, or enhancing the experience in the

destination. Several theorists have developed technology acceptance and readiness models and indicators. According to Davis *et al.* (1992) technology acceptance is motivated by two factors: perceived usefulness (extrinsic) and perceived enjoyment (intrinsic). For Parasuraman (2000) individual's readiness to use new technology obeys to two-dimensional constructs which include both motivators (e.g. innovativeness, optimism) and inhibitors (e.g. insecurity, discomfort) (see Figure 1.). Venkatesh *et al.* (2003) proposed four direct determinants of user acceptance and usage behavior which can be external (performance expectancy and effort expectancy) and internal (social influence and facilitating conditions).

Later, Pradhan *et al.* (2018) analysed the four dimensions of TR in relation to smart tourism devices as follows:
-   Optimism: The acceptance of challenge of using devices during travel with the hope of convenience, more freedom of mobility, and efficiency.
-   Innovativeness: The willingness to try out the newest technology during travel, with a high level of self-sufficiency, enjoyment, and interest in new technology.
-   Insecurity: The fears concerning using technology during travel, because of giving out sensitive information, location data, impersonality, online payment, or provision of online information.
-   Discomfort: The feeling of discomfort that can come from lack of technical knowledge and skills to use the device, even to understand the manuals or technological support, and complexity.

With a different approach Law *et al.* (2018) identified five motivators for adopting new technology in tourism that can play also as inhibitors (see Figure 1.). From those, only the utilitarian and the hedonic are identified as extrinsic and intrinsic, respectively, alike previous theories (Davis *et al.* 1992) and have been widely researched for their effects in the usage of technologies in tourism (Chung & Koo 2015, Chung *et al.* 2018).
-   Utilitarian (extrinsic): connected to usefulness, convenience, and functionality of technologies regarding mainly to information seeking and moving around in a destination, e.g. using apps could be useful, helpful, timesaving and improve productivity (Chung *et al.* 2018, Law *et al.* 2018).
-   Hedonic (intrinsic): refers to the enjoyment, entertainment, and satisfaction generated by the use of mobile technologies during the trip. It can go from the level of interaction with others - e.g., social media - (Chung & Koo 2015, Law *et al.* 2018) to the latest visual high-tech e.g. AR and VR or mobile guides (Chung *et al.* 2018).

Although Parasuraman (2000) differentiates motivators and inhibitors, other models (Davis *et al.* 1992, Law *et al.* 2018, Venkatesh *et al.* 2003) discriminate them based on their external or internal nature or the level of utilitarian (usefulness) or hedonic (enjoyment) benefit (Figure 1.). For study purposes the current research will adopt both approaches.

Parasuraman (2000) suggested further research on how demographic characteristics e.g., age correlate with TR. In this regard, some studies have seen age as a moderating factor (Pradhan *et al.* 2018, Venkatesh *et al.* 2003) but yet there are very

Appendix 1. Synthesis table from SLR research
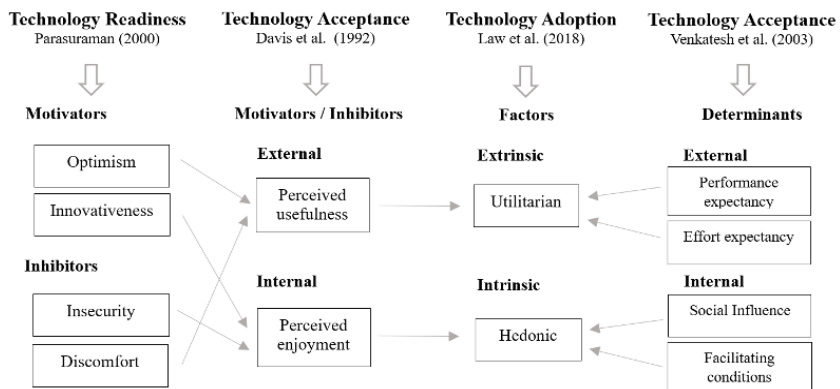
Source: Own elaboration based on Davis et al. (1992), Law et al. (2018), Parasuraman (2000), Venkatesh et al. (2003)

few studies addressing the impact of age on technology acceptance and readiness. In this regard, Dutot (2014) has claimed a digital gap which means a breakdown in terms of the use and adoption of technology among different age groups, a gap which this paper aims to address.

Different Generations and Digitalisation in Tourism

Generational cohorts are groups of individuals within a population who share experiences or events which lead to common perspectives, values, attitudes, and motivations (Bolton *et al.* 2013). In this context, the generational history not only impacts on lifestyles and demographics when it comes to tourism, it can also affect tourists' attitudes (Seabra *et al.* 2020).

Despite the extant literature on generational cohorts, there is no absolute consensus on the year ranges for every cohort (Bravo et al. 2020, Confente & Vigolo 2018). Drawing on past studies, the current work identifies three generations: Baby Boomers, Generation X and Generation Y (see Table 1.). Given the fact that Generation Y comprises two decades and is highly heterogeneous (Noble *et al.* 2009), this study divides Generation Y into two subgroups, Y1 and Y2 (Roland Berger GmbH 2019). Table 1. summarizes the main characteristics of the studied generations and their relationship with ICT in their daily life.

As shown in Table 1., digitalisation habits change between younger and older generations (Bravo *et al.* 2020, Confente & Vigolo 2018). For instance, the use of digital media is more common among younger generations, whereas the relationship is inverse

Table 1. Profiles of the studied generational cohorts

	Baby Boomers	Generation X	Generation Y	
Date of Birth	1946-1964	1965-1980	Y1: 1981-1994	Y2: 1995-2001
Age (in 2019)	55+	39-54	25-38	18-24
Synonym	Boomers	Baby Blusters, Gen X, Xers	Millennial, Gen Y, N-gen or Echo Boom	
Relation with ICT	Late adopters	Digital immigrants	Digital natives/Tech savvy. Connected 24/7 on multiple devices	
Personal Traits	- Most of them retired. - Possess both a good financial position and plenty of free time to travel. - Seek dynamism and youth.	- Highly consumption oriented: housing, clothing, entertainment and food. - Looking for quiet or recreational places, even though they also show an interest in popular cities.	- Prefer experiences to possessions. - Know people abroad and are often willing to explore new destinations. - Avoid mass tourism.	
Digital media consumption	- Mainly online news followed by social media	- Online news is the most consumed, followed by social media, mobile news and mobile social media.	- Primarily social media and mobile social media, followed by online news and mobile news	
Social media habits	- Recently adopted, social media is either not used or occasionally used (once a week), except Facebook, visited several times a week, and even a few times a day.	- Used a few times a day, while a minority use it all the time or a few times a week. The most popular are content communities i.e. YouTube, Pinterest.	- Used either all the time – the majority – or at least a few times a day.	

Source: American Association of Retired Persons (2020), Bravo et al. (2020), Chaney et al. (2017), Confente & Vigolo (2018), Ghersetti & Westlund (2018), and Hysa et al. (2021)

in the case of traditional media (Ghersetti & Westlund 2018). Venkatesh *et al.* (2003) identified age as one of the key moderating variables and found that younger see technology as helpful to attain tasks and relatively easy to use in comparison with the benefits. In contrast, older individuals are driven by social influence and the existing infrastructure (environment) that supports the use of technologies.

When it comes to traveling, although Baby Boomers are likely to use the Internet for travel planning, most of the cases require the support of younger family members or friends (Confente & Vigolo 2018). Social media is being used to some extent by all generations as effective information sources about the destination (Hysa *et al.* 2021). After the trip, social media is used in general to save and share memories of their trips: text message and posts (American Association of Retired Persons 2020).

New technologies and Urban tourism: The case of Budapest

A city that aims to promote the use of digital tools by its tourists – to meet their needs and improve the experience – should start by defining the tourist profile (segmentation), looking for innovation in products and services, and offering the technological conditions (i.e. internet access) (Happ - Horváth 2020). To this end, it is recommended the development of a long-term digital tourism strategy (Happ - Ivancsó-Horváth 2018). In this regard, Hungary, in 2018, set the goal of creating a Digital Tourism Strategy aimed to develop a support and application system for digital transformation in different areas in the public and private sector (Happ - Ivancsó-Horváth 2018).

In the latest years, several mobile applications have been launched to help tourists to navigate throughout Budapest. Some of them are focused on transportation and mobility i.e. Mol Bubi (public bike rental), BKK Futár (online journey planner), some other are interactive tour guides i.e. Pocket guide (audio 3D guide), My Budapest (informative guide) (Berende 2015) Furthermore, in some districts there has been adopted a smart parking solution to reduce congestion and make it easier for tourists to explore the city (Smart Lynx 2021). However, they are private initiatives and not part of an integrated strategy by the local government for the development of the tourism sector.

A recent analysis of Budapest's performance as a smart city revealed that Budapest municipalities take the lead over the central government and most of the technology solutions are related to e-government, mobility and transport, health and social inclusion, education and air (Csukas - Szabo 2022). As in other cities, the COVID-19 pandemic has been an opportunity for the local government to improve efficiency in operating services (Csukas - Szabo 2022).

METHODOLOGY

The main objective of the research was to explore the technology acceptance and readiness of different generations of tourists in an urban destination. To this end, a qualitative approach has been adopted by using in-depth interviews to gather primary data and extract visitors' thoughts, experiences and perceptions about tourism and technology usage (Floros *et al.* 2021). 94 international tourists were reached through purposive sampling at the main attractions of Budapest, Hungary, by trained university students. The interviews were conducted face-to-face during autumn 2019 and the spring of 2020 (before pandemic crisis). Sampling is based on a generational level, rather than the conventional demographic level (age) (Chaney *et al.* 2017). For this reason, based on the participant's age, each individual was assigned to the corresponding generational cohort for further analysis (see Table 2.).

The interview guide comprised two parts and was based on the literature review and research questions (Morris 2015). The first part collected demographic and travel information i.e. age, accommodation. The second part included semi-structured questions about i) the digital tools usage and social media habits for traveling purposes before and during the visit (to explore acceptance and readiness), ii) the level of attach-ment to their personal device(s) (to explore positive and negative perceptions on usage), and iii) suggestions for further development of online or digital tools to improve the experience of visiting Budapest (to identify weaknesses and formulate recommendations). Responses were audio recorded and transcribed by the au-thors. The collected data was treated and systematically analysed through deductive content analysis. Drawing on Schreier's (2014) guidelines, collected data was carefully read and contrasted until the emergence of meaningful patterns in correspondence with the research questions. Categories were eventually defined and presented (quotes are included to better illustrate the findings).

Table 2. Sample description

Gener-ational cohort	N=94	Age	Gender	Nation-ality	Occupa-tion	Length of stay in Buda-pest	Accom-modation	Travel com-panion
Baby Boom-ers (55+ years old)	20	63	female (9) male (11)	Europe (14) North America (6)	employed (11) retired (7)	1 day (1) 2-3 (8) 4-5 (7) 6-7 (0) 8+ (1)	hotel (14) apartment (2) hostel (1) river cruise (1)	partner (8) friends (5) family (4) alone (1) colleague (1)
Generation X (39-54 years old)	20	45	female (6) male (14)	Europe (14) Asia (3) North America (2) Oceania (1)	employed (13) retired (3)	1 day (0) 2-3 (3) 4-5 (5) 6-7 (3) 8+ (2)	apartment (7) hotel (5) with friends & relatives (2)	partner (8) alone (5) friends (3) family (3)
Generation Y1 (25-38 years old)	24	28	female (9) male (14)	Europe (16) Asia (4) North America (2) Eurasia (1) Africa (1)	employed (13) student (4)	1 day (0) 2-3 (10) 4-5 (8) 6-7 (1) 8+ (3)	apartment (8) hotel (7) with friends & relatives (3) hostel (3)	friends (8) partner (7) alone (6)
Generation Y2 (18-24 years old)	30	22	female (21) male (8)	Europe (12) Eurasia (9) Asia (4) North America (3)	student (22) employed (6)	1 day (0) 2-3 (6) 4-5 (4) 6-7 (5) 8+ (2)	apartment (15) hotel (5) with friends & relatives (4) hostel (4)	friends (15) partner (7) alone (5) family (2)

Note: Demographic data from some participants is incomplete since they did not reply to all the questions. Eurasia refers to the following countries: Turkey, Russia and Azerbaijan.

FINDINGS

Motivators and inhibitors determining the technology acceptance and readiness of different genera-tions of urban tourists

The finding reveal that Baby Boomers are more inhibited than motivated towards technology readiness. Inhibition stems from discomfort due to the lack of technical knowledge and difficulty with using (effort ex-pectancy): "I'm more limited in my use of my cell phone and access to the internet. I would use maps for directions" (Male U.S., 72 years old). However, some individuals of this generation have already adopted new technologies motivated by their convenience (optimism) when travelling: "Yeah, but it's handy [the mobile phone] for the maps really.

I attempt to use it more just for the maps. Because sometimes I'm walking and then I don't know where I am, you know" (Male English, 57 years old) (see Table 3.).

Generation X seems to be more optimistic about the usage of technologies lead by the convenience and so-cial influence: "The group at the bar suggested us the app 'BKK Futar'. It is a really useful app. We were amazed at how precisely it can show the arrivals and departures" (Male Austrian, 42 years old). Indeed, this generation is greatly encouraged by word-of-mouth to try specific digital tools. Additionally, they show a moderate level of dependence on technology when traveling: "Without this [mobile phone], we are gone. […] It's just basic" (Female Israeli, 47 years old). Some insecurity is associated with the perception of technologies interfering with on-site experience: "I was completely able to focus on the moment, since I came

Table 3. Motivators and inhibitors for technology acceptance and readiness for urban tourists

	Baby Boomers	Generation X	Generation Y1	Generation Y2
Motivators	- Optimism: convenience	- Optimism: convenience - Social influence	- Optimism: convenience, moderate dependence - Innovativeness: to be updated	- Optimism: convenience, high dependence - Innovativeness: to be proficient
Inhibitors	- Discomfort: lack of technical knowledge - Effort expectancy: difficult to use	- Insecurity: disruption of on-site experience	- Insecurity: lack of trust, disruption of on-site experience	- Insecurity: lack of trust

Source: Own elaboration

to Budapest to enjoy it with my own eyes, not to check it via my phone" (Male Italian, 51 years old). Although this generation do not consider themselves as technology illiterates, they are motivated and assisted by their family and friends: "My daughter also downloaded an application on our smartphone to see the schedule of the public transport" (Male English, 43 years old) (see Table 3.).

Generation Y1 is very optimistic toward acceptance and use of technologies because of the convenience and moderate dependence: "Nowadays everything can be searched on your phone therefore it is a highly useful tool when travelling" (Male Dutch, 26 years old). Unlike older generations, innovativeness is key for this generation, feeling motivated to use up-to-date technologies: "I am a big fan of Instagram, maybe I post quite a lot, but I love to share my experiences and my views of a city. I always check the city name with # before a trip to see how other people see it" (Female Turkish, 28 years old) (see Table 3.). On the other hand, there is some level of insecurity in relation to the lack of trust when it comes to recommendations. Since some Millennials have friends in the destination, they prefer following their recommendations rather than reviews from digital tools: "Google maps to find my way, but nothing else because I could also rely on my friend in this case" (Female German, 26 years old). Moreover, this generation shows the greatest concern regarding the disruptive effects of technology on the on-site experience: "I don't post a lot of things of Facebook or another kind of social media. I prefer to live the experience" (Male Mexican, 26 years old) (see Table 3.).

Generation Y2 is very similar to Generation Y1 in terms of motivators and inhibitors towards technology readiness. This generation show preference for technologies because of convenience and the high dependence: "We always bring our mobile pho-

nes with us, and it is necessary for us to go around the city" (Female Japanese, 22 years old). Another motivator is innovativeness expressed through the proficient use of available technologies: "Online payment, I don't like to have cash in my pocket" (Male Chinese, 18 years old). Some insecurity stems from the lack of trust in technology regarding recommendations, showing preference for word-of-mouth: "Knowledge of my friends and just Google Maps to be sure how to get to some places. There are plenty of interesting places that Google will not suggest to you" (Female Polish, 24 years old). Interestingly, contrary to Generation Y1, this cohort does not show any concern regarding negative effects derived from the use of technologies during the trip (see Table 3.).

Type of motivators for technology acceptance and readiness by different generations in the urban tourism context: utilitarian vs. hedonic

The findings reveal that the smartphone is the most used digital device in the destination by tourists from all generations due to its utilitarian value as it allows them to take pictures, keep in touch with family/friends (call, text and video-call), surf the web, and create posts in social media.

It was observed that Baby Boomers in general travel offline. Digital sources are seen as purely utilitarian and are only used by some of the members. The most used digital sources by this generation, apart from the smartphone, is Google Maps. It is used for searching directions/checking locations: "Searching on Google maps […] our way to go from one place to second place" (Male Luxemburger, 56 years old).

Unlike Boomers, Generation X is mostly online during travel and is also motivated by the utilitarian value of technology. The most popular digital tools are Google Maps, mobile applications, and social media. Google maps is used to navigate in the city (directions, transportation and places) while the mobile applica-tions help Xers to access different services: "Google maps mostly, it shows us the public transport routes so that's great, but also there are some taxi apps that we can use" (Male Belgian, 43 years old). Social media is mainly utilitarian for this generation (to check reviews). However, some members use social media with hedonic purposes (e.g. to save and share memories) (see Table 4.).

Generation Y1 and Y2 show an important dependence on technology mainly due to the utilitarian benefits. The most used technologies by these cohorts are Google Maps and social media with the purpose of navi-gating in the city and checking information/reviews, correspondingly: "We use Google Maps and also Facebook to check a place, see the reviews or the photos" (Female Dutch, 29 years old). Social media impacts considerably the on-site tourism experience of some individuals when it comes to decision making on where to go, what to do, etc. However, an important group of Generation Y2 use social media with hedonic purposes such as posting in social media and receiving feedback from peers: "In Google maps I highlighted the most important objects there […]. In the evenings, at the hostel, I was sharing some photos with my friends on Instagram […] I really want to introduce my friends, family and other followers to beautiful places. I am always writing a caption to my pictures - with some interesting facts that I didn't know before […]. Sharing is caring" (Female Latvian, 23 years old) (see Table 4.).

The negative impacts of technology on different generations

As previously shown, attachment to the digital device during the trip increases conversely to the generation. Baby Boomers are not attached but use it during the trip more often than at home: "We are not so strongly attached, but we use it sometimes" (Female British, 69 years old). In contrast, the majority of members of the cohort Y2 are strongly attached to their digital devices: "I am really attached, I have it in my hand like all the time. Taking pictures, checking the maps and everything" (Female English, 24 years old). Con-

Table 4. utilitarian and hedonic uses of technology by urban tourists

	Utilitarian/ Hedonic	Most used device	Most used digital tool	Main uses
Baby Boomers	Utilitarian motivation	- smartphone	- Google Maps (Utilitarian)	- searching directions/ checking locations (Util-itarian)
Generation X	Mainly utilitari-an motivation	- smartphone	- Google Maps (Utilitarian) - Mobile applica-tions (Utilitarian) - Social media (Hedonic)	- navigate in the city (directions, transportation, and places) (Utilitarian) - access different services (Utilitarian) - save and share memories (Hedonic)
Generation Y1	Mainly utilitari-an motivation	- smartphone	- Google Maps (Utilitarian) - Social media (Utilitarian)	- navigating in the city and checking information/ reviews (Utilitarian)
Generation Y2	Utilitarian and hedonic motivations	- smartphone	- Google Maps (Utilitarian) - Social media (Utilitarian/He-donic)	- navigating in the city and checking information/ reviews (Utilitarian) - posting in social media and receiving feedback from peers (Hedonic)

Source: Own elaboration

sequently, some individuals, especially from cohort Y1 are restricting the use of digital tools at the destination to disconnect during the trip. They have opted for navigating either early in the morning to plan the day ahead or check news, while posting tasks are postponed for the night or even at the end of the trip: "My wife has Instagram but she only posted some pictures in batches at the end of each day we spent in Budapest" (Male Austrian, 42 years old).

Recommended improvements and developments

This research on tourists from different generations addresses the importance of offering suitable conditions (an appropriate digital infrastructure) to motivate the use of the latest technologies aimed to improve the travel experience (Blut & Wang 2020, Law *et al.* 2018). Aside from more connectivity (WI-FI), further development should consider three aspects: the touristic offer, the language and the transportation system.

Interestingly, participants from all generations proposed the creation of an interactive mobile application in the form of a digital map which connects the main attractions of the city providing interesting facts about every attraction including fees and public transport routes, as well as updated information about other aspects of the touristic offer such us exhibitions, food specialties, events, local recommendations, secret spots: "Maybe an app that guides you during a historical tour for example: telling stories and so on, also a map which includes the best restaurants in Budapest and providing recommendations" (Female Sweden, 26 years old).

Respondents pointed out the language barriers, therefore, it is important to have websites in English and more accurate translations from Hungarian (Google Translator is not enough). A suggestion was the creation of QR codes at tourist attractions available in different languages.

Finally, another solution would be the development of a mobile application with detailed information about the public transportation (timetables, stops) including the option to buy online tickets to facilitate the naviga-tion in the city.

LIMITATIONS

This study was limited to a relatively small sample of tourists in one urban context. The interviews would need to be repeated with a wider sample of tourists in multiple locations to strengthen the find-

ings. A questionnaire might be designed to test the validity of TR in an urban context using a larger sample of tourists, for example. It is also important to mention that the bias towards utilitarian motivating factors is no doubt caused by the fact that the research was undertaken with respect to the whole destination and journey rather than during specific on-site experiences. Future research should ideally aim to capture both utilitarian and hedonic experiences in destinations using a range of digital tools.

CONCLUSIONS AND RECOM-MENDATIONS

This study confirms other studies that there are variations in digital habits among different generations (Bravo *et al.* 2020, Confente & Vigolo 2018, Dutot 2014). It also confirms that older generations prefer more traditional media like guidebooks or paper maps (Ghersetti & Westlund 2018). Furthermore, the study re-veals that the younger they are, the more motivated to use technologies for traveling and the greater number of uses of digital tools (Dutot 2014). It also demonstrates that younger people show a stronger attachment to digital tools or devices like smartphones (Egger *et al.* 2020). However, it is also increasingly the case that even younger tourists are recognising the benefits of digital-free experiences (Floros *et al.* 2021).

There are many models and approaches for technology acceptance and readiness, this study has considered some of the most important and, from a qualitative perspective, it has shown the correlation among different determinants. Baby Boomers are optimistic if the digital tool is convenient and easy to use (Kim *et al.* 2016), but quickly experience discomfort if it challenges their lack of technical skills, in other words they are complex to use (effort expectancy). This represents a lower level of optimism and innovativeness as highlighted also by Rojas-Méndez *et al.* (2017) and Dutot (2014). Generation X seems to be somewhat more optimistic, especially those who have been inspired by their children or social groups to use different tools (social influence). This confirms other studies (Confente & Vigolo 2018) and highlights the importance of social influence as an important external determinant of technology acceptance and behaviour among older people (Venkatesh *et al.* 2003). Generation X were quite concerned about technology spoiling their live experienc-es but not as much as Generation Y1.

Generation Y1 are more confident and innovative, but also more dependent on their technological

devices. Nevertheless, some members of this group also expressed their desire to disconnect from their devices to enjoy the live experience. Discomfort or distrust issues tend to arise only in the case of recommendations or reviews, for which they prefer to seek a friend's opinion. The same was true of Generation Y2 who also preferred to ask local people for recommendations. On the other hand, they are the most likely to be attached to their device and cannot so easily imagine travel without it and they use a wider range of tools and platforms. Although social media is used by the majority of tourists to a certain extent, some individuals are choosing to limit the occasions when they actually upload and post information (e.g. at the end of the day or even at the end of the trip).

Indeed, concerns related to the disruption of the on-site experience due to technology usage were found to be an important inhibitor for technology acceptance and readiness by participants from Generation Y1 and X, which to the best knowledge of the authors, has not been considered by previous models. Another important inhibitor for Generation Y is the lack of trust that can be rooted in performance expectancy (Venkatesh *et al.* 2003).

Utilitarian and hedonic dimensions have been used in this study to identify the type of motivator. Motivators tend to be more closely related to utilitarian rather than hedonic factors. Despite the differences among generations, most of them, except by Generation Y2, are mainly motivated to use technologies when travel-ing because of the utilitarian benefits. This is especially evident from the fact that smartphones and Google Maps are the most used digital tools by all generations because of the usefulness when moving around the city.

Finally, recommendations address mainly the need to facilitate conditions, as another important determinant for the acceptance and readiness of technology by urban tourists. The city should improve the digital infra-structure to ensure more connectivity from any location. Additionally, public and private stakeholders as well as app developers should create digital solutions able to attract the target market. In this vein, this study provides some guidelines to tourism practitioners, marketers, and managers, on how to develop successful digital tools for the diverse tourist demand of Budapest. Based on our findings, all generations would be appealed by useful digital tools to navigate around the city and applications to improve the travel experience i.e. tour guides (Irimiás *et al.* 2021), available in different languages. The topics of interest are public trans-portation, attractions, and events. However, if you target older tourists, you should consider simplicity and ease-to-use when designing applications. If you target young tourists then creative, entertaining, trustful, and less disruptive applications might be well received.

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