



The tourism journey, from inspiration to post-travel phase, and the mobile technologies

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Abstract

It is widely recognized in the literature that all the steps of the tourism journey, from inspiration to post-travel phase, are being influenced by mobile technologies. The characteristics of mobile and its several Apps revolutionized how tourists plan, experience and share feedback of their trips. Due to the fact that Millennials are very comfortable with technology and devices, this research explores how Portuguese Millennials use their mobile Apps before, during and after their trips. Based on the use of a quantitative research and in view of the fact that it intended to analyze attitudes, intentions and behaviours the data was collected through a questionnaire (Burns & Bush, 2006, Günther, 2006). The convenience sample used consisted of 1200 Portuguese part of the Millennials Generation.

Keywords: Mobile technologies, Millennials, trip stages, security, Portugal.

Introduction

Mobile technology nowadays plays a central role in determining tourist behavior (Kim & Kim, 2017). Mobile technology has been changing travellers' attitudes, from the approach on how to collect and process information, to the process of communication between other travellers and service providers (Wang, Park & Fesenmaier, 2012). It's fundamental to understand how consumers are actually using their mobile devices for travelling because, according to Neuhofer *et al.* (2014), mobile technology has the ability to significantly boost interaction between businesses and consumers in this context, guiding to a more personalized experience.

A consumer demographic characteristic, such as age can make the difference on how much it influences the adoption of mobile technologies (Morosan & DeFranco, 2014). Since cohort members share similar values, experiences and preferences, the generational cohort is a great market segmentation tool (Parment, 2013).

Today young generations like Millennials, have different needs than their parents or grandparents had, specially in the context of tourism (Glover, 2010). Despite the financial restrictions and time constraints in comparison to other generations, they have a high predisposition to travel (Santos *et al.*, 2016). Millennials constitute a challenge to a lot of sectors. For the tourism sector they have also become a challenge, specially due to their characteristics, with a possibility of causing real disruption in how the industry is structured and its *modus operandis* (Pendergast, 2010; Santos *et al.*, 2016).

Given this situation, the different players in the tourism sector must gain a better understanding of the profile and demands of this segment and, according to Soares *et al.* (2017), this generation have to be considered a priority on the agenda of tourism business managers.



Portuguese Millenials and the mobile technology

Although there are many studies about the young population, there is no clear delimitation and designation about the different generational categories (Duarte, 2014). According to INE (2019a), in 2018, Portugal had 1,670 million people (aged 20-34), more females than males in that age range (INE, 2019b) and their behavior were described as similar as their international peers (Duarte, 2014).

Portuguese young population has technology very present in their life's, as revealed by the Consumer Barometer with Google (2017b). In the year of 2017, the percentage of people (aged 25-34) who accessed internet was around 96% and 92% were doing it daily, in comparison to the general population (73% and 62% respectively). In this segment (aged 25-34), smartphone usage increased with 92% using this device versus 84% in 2016 and already surpassed the usage of computer with 86% in 2017. This is a generation multi-deviced, were the average number of connected devices per person is 3.4 (aged 25-34), 3.6 when age is under 25, being superior once more when compared to the rest of the population with only 2.4 per person (Google, 2017b).

In terms of technology, Portugal has 78% of the inhabitants connected to the internet, while just 69% of total population does it by their mobile phones (Kemp, 2019). 85% of this population uses internet every day for personal reasons and the average speed of mobile internet connections is 30.19MBPS (Kemp, 2019). Portugal is highly connected, standing at the 3rd place in the ranking EU28 in "*Broadband penetration*" by the European Innovation Scoreboard 2018 (EIS, 2018), and occupies the 13th position in "*Quality of overall infrastructure*" out of 137 nations (World Economic Forum, 2017).

Big companies like Uber, Google, Microsoft, Mercedes or Huawei are already in the country and other giants are yet to come (Econews, 2018). The investments are happening not only in the capital but also in cities around (Econews, 2018).

Compared to the average worldwide, Portugal appears as country very familiar with technology and reassures the importance of studying these topics in the context of this market. A determinant factor to be successful in this market, is that technology is secure because. In Portugal 94% of the people say that data privacy and data protection are very important to them (Google, 2017b).

Mobile technology and the tourism journey

Today, the widespread use of mobile devices, especially of the smartphone and its numerous Apps, signifies an era of unprecedented connectivity and ubiquitous access to the Internet (Wang & Xiang, 2012). The instantaneous feature of mobile technologies empowers tourists to access and share information without spatial and temporal limits (Wang *et al.* 2014). The information will only positively influence the tourist experience if it is adequate to the contextual awareness of place, time and activity in which the tourist is inserted and to the profile of each tourist (Ferdiana & Hantono, 2014). Consumers tend to adopt mobile technologies because they find these technologies useful and convenient when accomplishing travel related tasks, such as information search (Buhalis & Law, 2008; No & Kim, 2014), reservation and payment for services (Fong, Lam & Law, 2017; Ozturk, Nusair, Okumus & Hua, 2016) and moving around a destination (Lu, Mao, Wang & Hu, 2015).

The authors tussyadiah and Wang (2016) found that tourists perceive their mobile devices as a guide or travel companion, making travellers according to Wang, Xiang and Fesenmaier



(2016) feel better informed, socially connected, more entertained and safer, among other benefits.

With the increasing number of users and greater incursion into people's life, smartphones have the potential to significantly influence the touristic experience (Wang, Park & Fesenmaier 2012). For the firms, mobile technologies also considerably influence the services offered, which result in higher revenue and higher occupancy rates for hotels (Jung, Kim & Farrish, 2014; Makki, Singh & Ozturk, 2016). Embracing these technologies may even motivate higher stock prices of hotels and airlines (Qin, Tang, Jang & Lehto, 2017).

The study "*Mobile in Spain and in the World 2018*", conducted by Ditrendia (2018), refers that the number of mobile phone users in the world is around 5.135 million people, which represents 68% of the global population.

In Portugal this penetration of mobile is even bigger with 79% and in 2019, the number of smartphone users in the country is 67% (Kemp, 2019). According to Globalwebindex summary report (2018), 66% of the respondents say that smartphones are the most important device for getting online. Specially, when focusing on younger generations those numbers rise up (76% between 16-24 years old; 73% between 25-34 years old).

Wang *et al.* (2014) refer that the use of smartphones in everyday life is replacing the laptop/desktop computer for small tasks. In this context, Wang *et al.* (2014) mention that the development of mobile technology has turned mobile devices, such as smartphones, an important tool supporting tourists before, during and after the trip. According to the report '*The Future is Personal*' from SITA (2015), 98% of travelers now carry their smartphone with them throughout their journey. Supporting this idea, Wang *et al.* (2014) say that mobile technologies and associated Apps change travel activities from the pre-trip stage, to experiences and consumption onsite, to post-trip stage.

Travel planning as a specific type of consumer information search can be considered a fundamental component of trip experience because, in order to develop a travel plan, a traveler habitually needs to obtain a substantial amount of information (Xiang, Wang, O'Leary, & Fesenmaier, 2015). Travel plans are made in a number of stages, not sequential, with earlier stages conditioning the latter ones (Huang *et al.*, 2017).

According to Hyde (2008) and Smallman and Moore (2010) travel decision- making process can include the following phases: idea formation, searching for information, evaluates alternatives for final decision, and booking. The process can be iterative with the four phases repeating or even running in parallel for each decision such as destination, itinerary and things to do (Fesenmaier & JiannMin, 2000).

The first step is identified as pre-trip stage. Pre-trip planning helps the traveler to make decisions and build expectations for the upcoming trip (Gretzel, *et al.*, 2006). Tourists may plan less before the trips as they know that information is readily accessible with mobile devices as long as they have internet access (Wang *et al.*, 2014). At the same time, the usages or tasks performed by tourists while on the pre-trip phase are increasingly varied and the barriers for using them are decreasing (Xiang, Wang, O'Leary & Fesenmaier, 2015). As a result, consumers rely more on smartphones than other devices in the search process and smartphone users are more likely to search for information with friends and family than to use OTA websites (Murphy *et al.*, 2016).

Murphy *et al.* (2016) also studied the usage behaviors of different technological devices and found that consumers tend to switch to their personal computers in the final booking process, although they use mobile devices during the search process. In the global digital report 2018



of Travelport (Travelport, 2018a), it's presented the same argument referring to India, a country where the travelers are more digital savvy according to this report. This behavior wouldn't be so apparent in a country with this type of characteristics, but still over 85% of Indian's travelers book their travel online using their computer, rather than mobile 48% or tablet 28%.

According to Wang *et al.* (2014), the main reasons for pre-trip planning with a smartphone were the lack of access to a desktop/ laptop, people felt at ease with using the device and that travel planning is sporadic, for example casual conversations with friends or when taking the train, bus or subway.

The second planning stage is designated as during-trip stage or consumption. Mobile technologies empower tourists to efficiently adjust their itinerary and plans in response to unexpected circumstances that occur during their trips (Lamsfus *et al.*, 2015; Wang, Xiang & Fesenmaier, 2016). Travelers are also more likely to delay their secondary decision-making like restaurant reservations or hotel purchases from the pre- trip stage to the during-trip stage (Lamsfus *et al.*, 2015). If they are unsatisfied with the original plan, tourists are more likely to change their plans and initiating on-site decision-making. Consequently, travel activities may become more spontaneous, resulting in more unplanned trips and smartphones enable tourists to take advantage of last minute deals (Wang *et al.*, 2014).

The Millennials are more eager for these types of deals with over 1 in 3 agree that they "*often make holiday plans at the last minute*" compared to only 1 in 4 of older consumers, despite all associated costs with last-minute booking (Expedia/Future Foundation, 2016). Seven extrinsic motivations like obtaining food, finding directions, arranging transportation, finding accommodation, planning or re-planning trips, seeking things to do, arranging for shows and two intrinsic motivations (to kill time and habit) are originated from this unplanned trips or activities and are encountered during this stage (Wang *et al.*, 2014). Smartphones offer access to location-based services, recognizing the current location of tourists and providing relevant suggestions based on tourists' inquiries like restaurants or souvenir shops (Wang, Park & Fesenmaier, 2012). The use of location- based technology plays a fundamental role in the acquisition of geographic knowledge and contributes to the different components that affect the tourist experience (Tussyadiah, 2012).

Tourists are also more likely to document and share their experiences during-trip because of the convenience of the smartphone, the instant feedback and reward from online social activities (Wang *et al.*, 2014). For this research, it's very important to clarify if Portuguese Millennials are behaving according to Wang *et al.* (2014) or the model of Gretzel that was done earlier. The last stage proposed by Gretzel *et al.* (2006) is also known as post-trip stage or post-consumption. Instead of sharing their experiences or providing feedback to the service providers upon return, tourists are more likely to share their experiences during their trip, to ensure that their social circle is updated in real time (Wang *et al.*, 2014). Therefore, the activities that used to be done in the post-consumption stage of travel are now moved to the consumption stage. Consequently during-trip experience stage, the feedback received from others may influence tourists' emotions and behaviors (Wang *et al.*, 2014). Furthermore, storing and retrieving their memories have become more suitable when consumers use mobile technologies in their travel (Law, Chan, & Wang, 2018).

Methodology

Methods applied towards accomplishing this study, such as research design, data collection tool, analysis and techniques for the data sampling would be covered in this section of the study.



Cunha (2019) describes research design as a blueprint that is made at the beginning stage of an investigation and should be used as a guide to complete the investigation. In designing a research project, several frameworks can be considered, such as, explorative research, descriptive research and some others. Explorative research is helpful for getting familiar with perceptions and subjects, adopting secondary data tools such as, reviewing of literatures (Cunha, 2014). Descriptive research is used when analyzing the attributes of a specific group, predicts and make estimations on individuals that acts in a particular way within a group, it is also utilized when analyzing the relationship that exist between two variables.

Selecting a research design should be based on the objectives and aims of the research investigation (Gagnon & Roh, 2016; Cunha e Santos, 2019). Regarding this study, the major aim concentrates on investigating the tourism journey and the use of mobile technologies, from inspiration to post-travel phase.

The aim and objectives of this study will be met through adopting a descriptive research design. Additionally, the body of literature has been crafted for use through the use of an explorative research design for establishing the background for assessment of the capacity of the entire investigation. Both research designs have been chosen due to time frame and available sources of finance, thus they are able to cover the goals of this current investigation. Research could of course adopt both qualitative and / or quantitative methodologies. Gathering and investigating data, which includes the examination and calculation of occurrences and displaying factual evaluations of progression of numerical data are all the functions of the quantitative research methodology (Cunha, 2019).

Considering the research objective of this investigation which focuses on evaluating the phenomenon, relationship and variance between variables, thus, it was pertinent to adopt a quantitative research. Cunha e Santos (2019) stated that the collection of data in quantitative research involves several forms such as survey, experiment and tracking. But the questionnaire is the most widely and popularly adopted tool used to collect data in quantitative research in both business, marketing and social science researches. This study also adopted the questionnaire instrument to elicit responses from the sampled respondents

This study focused on Portuguese Millenials customers of mobile technology during the tourism journey, from inspiration to post-travel phase, as they contributed to the population of this research.

Empirical analysis

Before collecting actual data and in order to reduce the measurement error, content validity was checked by a pre-test, during 2 weeks (between 01.08.2018 and 15.08.2018), in 120 persons.

These 120 persons answered the questionnaire to identify ambiguous definition or questions that are difficult to answer. This sample was chosen because according to Kumar (2011), a pre- test should be carried out on a group of individuals that have the same characteristics as the study population. The participants didn't face any problems understanding and answering the questions, so the same questionnaire was used afterwards for data collection.

Questionnaires were administered during a period of seven months, from 19th August 2018 to 30th March.

The aim of this analysis was to examine the collected data through the questionnaire instruments. The data were further collated and stored into the SPSS database. This section



analyzed the demographic features of participants in the study, descriptive analysis of the responses of the participants in accordance with the Likert scale measurement. The research findings represent the data analysis of 1200 valid questionnaires distributed online completed by Portuguese Millennials.

For the questionnaire to be valid the respondents had to be Portuguese as it is showed on table 1.

Table 1. Nationality

Portuguese	100%
Other Nationalities	0%

Source: Author's Own

The age group category selected for this sampling is restricted from people born between 1981 to 2000 (18 to 38 years old), depicted in Table 2, because, according to Butcher et al. (2017), Soares et al. (2017) and Bento et al. (2018), the millennial generation is defined in this timeframe. The mean of the year of birth is 1995, the median is 1996 and the mode is 1996, with 311 respondents. These results can be explained from who was collected a substantial part of data, university students. At the time of this research, bachelor students with a 3-year degree are generally from 1998 to 2000 and master students from 1996 to 1997, which influence the mean, median and mode of the sample.

Table 2. Age of respondents

Year	Number of respondents	Year	Number of respondents
1981	20	1991	27
1982	30	1992	39
1983	54	1993	45
1984	38	1994	56
1985	57	1995	199
1986	26	1996	311
1987	99	1997	61
1988	12	1998	12
1989	41	1999	11
1990	54	2000	8

Source: Author's Own

The number of 721 females and 479 males respondents took part in the questionnaires distributed online, represents a percentage of 61% and 39% respectively. This is in line with INE (2019b), that there are more females than males in the age range of 20 to 34 years old.



The results express a majority of 480 university undergraduates (38%), 252 master’s degree graduates (21%), 399 high school graduates (38.0%), 61 postgraduate diploma holders, and 8 respondents’ marked PhD degree. Considering McDonald (2015) statement on how this generation is the most educated in terms of formal education, this sample shows to be highly educated with 76% possessing a university degree.

A vast majority of Millennials who responded the online survey are students, which comprised 775 people (66%), followed by 410 employed for wages (24%).

Finally, 16 selected “Others” (5%) as the most suitable option, describing themselves: (A) 14 are currently studying and working at the same time (4%); (B) 1 Investigator (0.3%); (C) 1 Stage for the Order (0.3%), and finally, 12 self-employed (3.5%) and 6 out of work (1.8%).

Types of mobile devices used

The type of mobile device that is used to connect to the internet by the participants is illustrated in Table 3. The results express an almost unanimous use of smartphone with 89.1% and only 10.9% marked standard mobile phone. The sample of this study is undeniably integrating mobile devices into their lives. These results corroborate literature observations from Eastman (2014), Wang et al. (2014) and Google (2017b) on Millennials behaviors as heavy mobile and specially smartphone internet users. The faster processors, increased memory, operating system that can run multiple Apps and familiarity of use (Miller, 2012) make this device the favorite to use.

Table 3. Types of mobile devices of the respondents

Smartphone	Standard mobile phone
89.1%	10.9%

Source: Author’s Own

The tourism journey step by step

The first step of the tourism journey is to look for information. According to Murphy *et al.* (2016), **consumers tend to switch to their personal computers in the final booking process**, although they use mobile devices during search process. The results uphold that for Portuguese Millennials, switch to their personal computers in the final booking process (76%) and only 24% don’t do it this way..

In other words, approximately 3 in 4 Portuguese Millennials shift devices in the final booking process. These numbers demonstrate that for the majority of the generation, the customer journey still is not made only with mobile but with multiple devices.

This investigation shows the number and percentage of respondents that don’t **plan their trips with a mobile device** (32%) and the ones that do it (68%). The results display that 46%, people plan traveling with this device in sporadic moments (followed by 27% respondents that lack of access to a desktop/ laptop, 23% people that feel more comfortable using their device. Finally 10 selected “Others”.

When talking about **promotions and last minutes deals** 68% of the respondents strongly agree that it can encourage them to travel more, 28% agree and only 4% strongly disagree.

These results allow the researcher to infer that it seems to be consistent with the report of Expedia/Future Foundations (2016), suggesting that Millennials are enthusiastic for this type



of deals. When it's compared to other markets like United States, these types of deals don't encourage as much, with Google (2017a) referring that more than 60% USA travelers would consider an impulse trip based on a good hotel or flight deal. For Portuguese Millennials, just 896 of the participants would be stimulated to.

When talking about **sharing touristic experiences**, 85.4% of the Portuguese Millennials document and share their touristic experiences versus 15% who don't. Most of the sample, 54% document and share their experience during and after the trip, followed by 16% respondents that do it only during the trip and 15.2% do it just after the trip.

The findings of this research clearly indicate that documentation and sharing are no longer just in the post-consumption stage, as Gretzel *et al.* (2006) indicates, but as well in the consumption stage. Wang *et al.* (2014) say that tourists are more likely to do it during-trip, hence what used to be done post-consumption, now is done in real time. The results don't point to that direction also and still show that these activities for Portuguese Millennials are done after the trip, but now also during-trip.

The use of mobile Apps on the touristic journey

Only a small number of **Apps are used for searching**. From 1200 respondents, 708 participants use 0 to 2 Apps (59%) and 476 people use 3 to 5 (33%). A residual percentage (4%) uses more than 6 Apps: 1,6% respondents use between 6 to 9 and 1,2% use between 10 and 12 but only 0,2% use more than 12 Apps.

On the other hand when talking about Airline flights and mobile Apps, its importante to know that 63% of the participants strongly agree/ agree with this technique for **checking in on a flight**, a majority 12% participants neither agree nor disagree, 14% disagree and 12% strongly disagree.

The average agreement shows that most respondents tend to agree with the considerations risen by Wang, Park and Fesenmaier (2012), Wang and Xiang (2012) and Steven Leon (2018), that mobile Apps are used for checking-in.

The percentage of concordance (63%) shows that Portuguese Millennials have high levels of acceptance of this method to do their check-in, which largely surpasses 31% of SITA prediction to the general population for 2019.

These results indicate that this technology is being adopted much faster than expected and is now standard for this generation.

Talking about **checking in/out on na Hotel via a mobile App** 14% of the participants strongly agree with, a majority 30% agrees and 21% of the participants neither agree nor disagree. In the other hand 35% disagree. The average agreement expresses weak tendency from opinion "neither agree nor disagree" to "agree" to do it via mobile App.

Despite the percentage of concordance (50%) largely surpasses J.D.Power research in 2016 of only 3% of guests checked-in using this method, it's still far from the percentage of respondents in Criton's survey, that if the technology was available to them, 62% would likely or very likely to check-in to a hotel via an App (Power, 2016; Hertzfeld, 2019). These numbers show how far this method of check-in/check-out has come in a short period of time, but also that there is still room to grow to reach everyone that would be interested in using this technology.



At this point the researchers wanted to understand if the **familiarity with a destination would affect technology usage**. The study showed that 52% of the sample participants strongly agree that familiarity with the destination won't affect technology usage.

The average agreement indicates it's not possible to strongly support McKercher et al.' (2012) statement. The results allow the researcher to infer that characteristics of tourists like familiarity with a destination don't affect technology usage (in this case the technology referred is mobile travel App).

The findings of this research also reflect the work produced by Thakran and Verma (2013) and Okazaki *et al.* (2015) when talking about the **most used Apps**.

The most used Apps are the ones that respond to the demand for information in real time, location-based services such as accommodation (Booking.com and Airbnb), transportation (Uber and CP- Comboios de Portugal); airlines (Ryanair, EasyJet and TAP), restaurants (TripAdvisor) and other leisure activities. Apps that Millennials use at home like Google Maps/Earth are very popular, which is in line with Gotardi *et al.* (2015).

Transportation related ones are relevant, but they are not as important as presented in the reviewed literature by McCarthy *et al.* (2012). Apps like Lime, Kapten, Mytaxi or Flash don't have significance for Portuguese Millennials and even transportation Apps like Cabify or Bolt don't belong to top10 of the most used tourism related.

Millennials don't use mobile **Apps provided by local tourism organizations** (Gotardi *et al.*, 2015). The results shown confirm that approximately 7 in 10 Portuguese Millennials don't use Apps of local tourism organizations.

Needing an App, Search and Reservation of trips are the most important reasons for **downloading a travel App**. After these 3 points, follows offers/promotions and getting a boarding pass, Hotel check-in, checking flight and keep me updated with notifications.

These results are in line with the numbers presented on the report of Travelport (2018b) and confirm once again the importance of Apps when it's mentioned fundamental actions for travelers such as boarding pass or hotel check-in. It's very important to highlight that because approximately 2 in 5 Portuguese Millennials see Offers/Promotions as a reason to download an App, which gives marketers a clear indication of a strategy on how it's possible to increase the number of downloads of a travel App. On the other side of the spectrum, loyalty programs aren't popular enough between the members of this generation.

The **App Store Rating** is also very importante for participants when it comes to download an application. The average agreement indicates a trend in agreeing with the statement by Travelport (2018b) that feedback like good App store rating have importance on the decision of downloading an App.

Approximately 3 in 5 Portuguese Millennials at least agree with the statement made by Travelport (2018b) that **family and/or friends have importance on the decision of downloading an App**. Although exists a high percentage of agreement (60%), the average agreement is located in a middle point. Nonetheless, the researcher concludes that family and friends have influence on the decision of downloading an App, like in other decisions regarding to the trip such as choosing the destination (IPDT, 2019).

The vast majority of the respondents **uninstall a travel App** because it was only necessary for a specific trip, also because it is taking too much space on the devices, receives too many notifications and having a bad user experience, qualify as reasons for uninstalling a travel App.



The high percentages presented in which alternative validate that these options are in fact reasons to uninstall an App for Portuguese Millennials. What isn't in line with Travelport (2018b) is the order of importance of which reason and not the reasons themselves.

This problems can be solved if marketers consider not only the relevance of the content written in the message, but also the number of notifications sent and their timing. Real time accurate travel notifications can improve travelling experience (IATA, 2018).

Lastly, to assure a good user experience, the hardware features of mobile devices have to be considered during the App development stage (Rivera *et al.*, 2016), avoiding for example hanging the phone (Jain, 2016).

The average agreement shows that most respondents tend to agree with the statement made by Travelport (2018b), so bad user experience is not just a reason to uninstall an App, as seen in the last question, but also can influence the user's perception of the App-holding company.

Conclusions and Contributions

The present study with the objective of studying the impact that mobile technology has on Portuguese millennial travellers in all phases of the tourist experience concludes and contributes to literature on 5 levels. Each one of these levels contributes to better understanding this research.

Firstly, in the pre-trip stage, searching process occurs with mobile and only with a small number of Apps (0 to 5). In the final booking process, the device is already different because they tend to switch to their personal computers. From these behaviors, the researcher infers that Portuguese millennials still don't feel comfortable enough to have a 100% mobile planning experience, which identifies them as mobile users in general, but not in every component of their trip. This result contributes to create awareness for this conduct and presents a challenge for tourism App holding-companies and mobile developers, regardless of their size, to construct a simpler pre-trip stage for their customers.

Secondly, the during-stage is getting more relevant than before. Millennials are enthusiastic for offers like promotions/ last minute deals, so planning and decision- making are more near to this phase or even at this stage. This result reflects that short- term decision-making, classified by Gretzel *et al.* (2006), as part of the consumption stage is increasing in popularity among the members of this generation.

Not only the first stage, but also the last one is being affected by the growing relevance of the during-stage. The findings of this research show that for Portuguese millennials, documentation and sharing are done in post-consumption and also in the consumption stage, which doesn't support what was previously indicated by Gretzel *et al.* (2006) and Wang *et al.* (2014). Also in the second stage, while check-in/ check-out via a mobile App for airline flights is already a common procedure for this generation, the same doesn't happen for hotel/hostel/apartment rooms.

Thirdly, in the post-trip stage, re-experiencing the destination doesn't affect App usage in comparison to the ones visiting for the first time. This outcome contributes to existing technology related tourism literature regarding technology preference and usage between first-time and repeat visitors, which according to Rivera *et al.* (2016) has not yet reached a consensus.

Fourthly, Portuguese millennials relationship with Apps is the same as identified in previous researches (Gotardi *et al.*, 2015; Thakran and Verma, 2013; Okazaki *et al.*, 2015). They don't



use mobile Apps provided by local tourism organizations, instead this generation uses the ones known from home like Google Maps or Uber. Due to the indifference of millennials in relation to tourism local Apps, this type of organizations should take in account which factors lead to this irrelevance and how tourism organizations can improve the experience, in order to create meaningful relations with this cohort.

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