Digital Environment and Internet Mobile Trends: Hotels and Travel Agencies Perspective

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The academics consider that due to the process of digitalization, the data collected by recording the digital traces became a valuable source to analyse various aspects of customer behaviours. In that context, the mobile traffic data exploration provides new insights in tourism market dynamics. Over time, it becomes crucial to approach both new frameworks and real-time monitoring systems to understand how the customer dynamics perceived over mobile traffic, shape the structure of tourism sector in order to make better planning decisions and improve management. Following the stated, the intention of this study is few, namely: (i) to highlight significant figures referring EU-28 digital environment, (ii) to present and elaborate Internet mobile trends, generally and referring hotel and travel agency area, and (iii) to strengthen the tourism managers' level of awareness regarding the role of mobile internet for business benefits. In research, both theoretical and empirical part, are reproduced secondary data of EU-28 country, mainly for Croatia and Slovenia respectively. In conclusion part are discussed perspectives of mobile internet in current digital environment, as well as its position within the hotel and travel agencies areas.

Introduction

The evolution of Internet technologies as well as Internet penetration growing rate (https://internetworldstats.com) has indicated many changes in tourism. Over time, mobile devices become an inevitable distribution

of ePlatform in tourism and hospitality business (Buhalis and Licata 2011) which induced, specially smart mobile, new experiences in tourism demand side (Navio-Marco, Ruiz-Gomez, and Sevilla-Sevilla 2018). Moreover, the emergence of mobile technologies has been stimulated the development of various applications with onward reflexion on new relations as well as new markets based on the transformation of existing markets (Aldebert, Dang, and Longhi 2011).

Complementary, Internet mobile traffic in tourism which refers to the usage of mobile devices to buy/sell the tourism products/services also goes up, but differ among tourism subjects. In spite of several potential benefits, its acceptance is not yet wide and it is also under-researched among scholars (Wei-Han Tan and Ooi 2018a). Wang et al. (2016) researched readiness of hotels to adopt mobile hotel reservation systems and found out that the readiness depends on the hotel size, technology competence, compatibility and critical mass, and argued that the diffusion of technology innovation depends on readiness of consumers and merchants. Consequently, it reveals as important to research both inhibitors and enablers to sell the products and services on mobile websites (Wei-Han Tan and Ooi 2018a). On the same trace, factors that play important roles in influencing tourists behaviour intention are behaviour intent to adopt mobile social media advertising in receiving tourism-related ads, social influences and cost of mobile devices and services (Wei-Han Tan et al. 2018b).

Anyhow, it is not surprising that up to date trends indicate the higher growth in websites visits due to mobile than the desktop devices (Chaffey 2018). The latest source also highlights the higher mobile conversion rates in comparison with the desktop one, as well as mobile app in regards to the mobile site usage. The rising frequency of Google searches on mobile has been recognized, widely (Google 2016). Nowadays, according to the Internet Live Stats around 40% of the world population has an internet connection (see http://www.internetlivestats.com), while the number of unique mobile internet users is about 3.7 billion (see https://www.statista.com/topics/1145/internet-usage-worldwide).   Over time, the way to access the Internet and Internet search is changing. Initially, there were just desktop devices (personal computers, desktops and laptops), but over time and due to Internet technology development, internet search has been realized more and more via mobile and tablet devices. Such shift deeply changes whole 'informative' environment and ways of information flow (Castells, Fernandez-Ardevol, and Qiu 2006).

Digital Environment of EU Members and Some Reflexions in Tourism

According to Eurostat (https://ec.europa.eu/eurostat), among the EU members in 2015 the largest number of households with access to internet was in Luxemburg (97%), the Netherlands (96%), followed by the Scandinavian countries. Data for Slovenia, in 2015 shows that 78% households had a computer (in EU-28: 82%). The number of households with laptops and tablets is growing comparing with number of desktop computers. 2015 in Slovenia, 78% of households had access to internet (in EU-28: 83%), Croatia is one place behind Slovenia. Onward, as main reasons for not having internet access is stressed as follows: the lack of need or interest (46% of households without internet access in 2017), insufficient skills (43%) and high access and equipment costs (32%).

In extension, data for 2017 confirm the growing importance of digital skills as barrier against digital exclusion (see https://ec.europa.eu/digital-single-market/en/desi). Namely, in 2017, 43% of the EU population had an insufficient level of digital skills. 17% of them had none at all, as they did not use the internet or barely did so. These figures imply serious risks of digital exclusion in a context of rapid digitisation. There are still major disparities across EU members. The share of people with at least basic digital skills ranges from 29% in Bulgaria and Romania (despite noticeable progress in both these countries in 2017) to 85% in Luxembourg and 79% in the Netherlands. Slovenia (19th place) and Croatia (25th place) are both bellow EU-average.

Following Digital Economy and Society Index (see https://ec.europa.eu/digital-single-market/en/desi), the indicator of EU country digital achievements (i.e. digital inclusion digital skills, use of internet services, integration of digital technology, and digital public services), the online services growth is quite slow, although moderate increases were evident in on line activities such as: reading news online, participating in social networks, shopping online and using internet banking. Onwards, the participation in online social networks reaches 65% of EU internet users in 2017. The younger population share is dominant, namely among 16- to 24-year olds, the share of users participating in social networks neared 90%, whereas this number was 68% for the 25–54 and 40% for the age from 55 to 74. The country with the largest proportion of internet users on social networks was Malta (87%), followed by Hungary (84%), Belgium and Romania (both 82%). Finally, the largest increases in the share

of internet users participating in social networks between 2016 and 2017 were registered in Romania (8%) and Slovenia (7%). France had the lowest share of users (49%), followed by Germany (56%), the Czech Republic and Slovenia (both 57%).

INTERNET AND MOBILE TRENDS IN CROATIA AND SLOVENIA

According to the Consumer Barometer (2016), the number of internet users in Croatia also increases, annually. In 2013, 70% of the population used the internet, in 2014 the percentage rise to 74%, while the data for both, 2015 and 2016, showed a share of 7%. Regarding the younger population (up to 35 years), the share of internet users is growing more significantly. Namely, in 2013, 95% of such internet users were officially registered. The same data was 99% in 2016. The number of smartphone users in Croatia was 65% in 2016 compared with 39% three years ago. The share of younger users as defined above (up to 35) with own smartphone was 96% in 2016, while in 2013 the share was 70%. On the other side, it is a fact that having smart phones really corresponds but not reveals the exact frequency of using them for on line search. The above mentioned survey indicated that in the year 2016, 65% of Croatian citizens used smartphones for the Internet search at least as much as they used computers for the same activity, while the same share in 2013 was 31%. Within the younger population this figure is 55% for 2013 and 85% for 2016. Additionally, 40% of Croatian users on their mobile device compare products and prices, 24% search for reviews and tips for the products and services they're interested in, 22% search for locations and directions, 16% of users search for where to buy a product/service online, 16% discovered a relevant brand/company for their research, and only 5% of users made contact with the seller via the mobile device (see www.consumerbarometer.com).

Furthermore, 96% of Slovenes use mobile phones (basic mobile phone and smartphones), 70% smartphones, 77% computers, 27% tablets, 94% TV, 11% MP3 player, and 2% eReader. Slovenes use smartphones for setting alarm clock (70%), telling time (68%), taking photos/videos (61%), checking weather (46%), listening to music (33%), playing games (23%) and accessing travel/traffic/maps (22%). 24% of Slovenes go more often online via smartphone than computer/tablet. 63% of Slovenes use search engines, 51% visit social networks, 45% watch online videos, 31% look for product information, 8% play games, 6% purchase products/services on their smartphones at last weekly (see www.consumerbarometer.com). Finally, the latest source highlights that 25% of Slovenes research on-

line/purchase online, 39% research online/purchase offline, 10% research offline/purchase online, 43% research offline/purchase offline. In order to make their purchase, 89% of Slovenes use computers, 4% smartphones, 4% tablets, 3% other internet-enabled devices.

INTERNET MOBILE TRAFFIC IN TOURISM

As mentioned before, Internet mobile traffic is perceived as traffic realized through mobile devices, such as smart phones, tablet devices and other mobile devices with Internet access that is constantly growing proportionally with upward trend of internet searches. According to Eurostat (https://ec.europa.eu/eurostat), on average, 21% of all EU internet users used websites or apps to arrange accommodation services, and 10% of all used them to arrange transport services. In EU, this figure ranges from over 35% in the UK to 6% in the Czech Republic and 6% in Cyprus. The differences across observed countries correspond with institutional, legal and market-related aspects. The valuable observation is that Internet users with high education level are considerably more active in this respect. Namely, for both transport and accommodation, the share is more than threefold for this category compared to the low-or-no education group (see https://ec.europa.eu/digital-single-market/en/desi).

In addition, smart tourism technologies usage such as travel-related websites, social media, and smartphones in travel planning cycle has been growing too (Huang et al. 2017). Mobile computing additionally enables the development of mobile Recommender System (RS) that captures personal, social and environmental parameters and delivers accurate and effective situation-aware recommendation (Gavalas et al. 2014). In the period 2014–2016, according to Google (2016), the majority of Internet searches realised by mobile usage was just focused on tourist service search. The stated trends have shown how often users search for tourist services and related information through mobile devices. Consequently, even 70% of all mobile phone users said they were looking for tourist/guests information on their smartphones. Google (2016) also revealed that 85% travellers do not plan all activities before the trip, but only after they arrive at the destination. Moreover, travel searches via mobile devices grow over 50%, annually.

Furthermore, the latter source discloses that the many mobile users use their mobile devices when they are already 'on the road.' The same principle can be applied to different tourism segments, such as booking accommodation, trips in destinations or restaurant seats. Statistics (Google

2016) show that 31% of leisure travellers and 53% business travellers have made their reservations by mobile. Almost half of the passengers who searched for information in that way approve that they made a purchase decision on their mobile phone, than changed the device and purchased the product. The mentioned indicated the following: (1) booking and purchasing processes on particular websites are still not sufficiently customized and responsive, and (2) the mobile users feel lack of confidence or trust in particular websites and consequently avoid purchasing online (Gefen 2002; Agag and El-Masry 2016).

On the other side and despite the fact that increasing number of tourism related people recognize and actively use digital services over the internet (online booking through the web pages, social networking, etc.) still smaller number of them participate in mobile internet traffic and related opportunities. Namely, Consumer Barometer Survey (www.consumerbarometer.com) data provides more realistic perspective of the mobile device usage in Europe, referring recently booked hotel accommodation facilities In accordance with the mentioned source, only 8% of hotel reservations were made by mobile devices which refer to tablets and smart phones usage.

The interesting fact is that mobile Internet searches for travel data exceed search rates on desktop devices over the weekend (Google 2016). This indicates that hotels and other tourism subjects websites have to provide responsive web design and accordingly make their web page to 'look good,' not only on desktops, but also on tablets, and smart phones. In extension, Baraković and Skorin-Kapov (2017, 311) reveals the existence of: '(1) negative impact of number of taps to reach the desired Web content on perceived Web site loading time; (2) negative impact of Web site loading time (in case of smartphones), and positive impacts of Web site aesthetics and quality of Web site information on perceived Web site usability; (3) negative impact of number of taps to reach the desired Web content and positive impact of quality of Web site information on perceived Web site aesthetics; and (4) positive impact of Web site aesthetics on perceived quality of Web site information.'

It means that hotels and travel agencies need to invest more effort and resources to increase their website responsiveness and thus better customize them to potential guests. Namely, over 30% of TUI Travel and Thomas Cook's sales were performed online in 2013 (Euromonitor International 2018). Online hotel sales are growing in Western Europe and catching up with air online sales (Euromonitor International 2018). Gen-

erally, if the hotel, travel agency or any other company do not implement a suitable online mobile commerce strategy, the risk of losing the market, competitiveness and profit arises (The Integer Group 2017). In other words, if any tourism company misses to adapt to the online environment, they will inevitably lag behind their competitors. The relationship between Internet facilities and performances in tourism sector has been explored in studies (Sigala et al. 2004; Buhalis and Zone 2007; Tsai, Song, and Wong 2009; Law, Qi, and Buhalis, 2010; Garbin Praničević, Alfirević, and Indihar Štemberger 2011).

Empirical Research

First part of the empirical research explores the share of mobile traffic in total hotel and travel agency web sites traffic. As data source has been used the Google Analytics outputs. The collected data were processed in the Microsoft Office Excel 2016. Additionally, Google Analytics tool provided web statistics for period from 2010 to 2016. The data were gathered from Croatian, 7 hotels and 5 travel agencies websites. The total is based on 35.208.541 registered user visits on hotels websites, and 15.471.016 on travel agencies, respectively. Due to the relatively smaller sample, the collected data are used only as an indicator of the mobile internet traffic trend. Devices used in this research were divided into 3 categories, such as desktop computers (personal computers), mobile devices, and tablet devices. The research involved all customer visits, regardless of country or traffic sources.

Second part of the same research was focused on both, the role of mobile traffic regarding business results (reservations) and the share of mobile traffic in total traffic. Besides statistics used in the previous section, in this part we used conversions (or eCommerce transactions) as new metric appropriate for hotel and travel agency websites that have online booking and payment system.

RESEARCH RESULTS

The first research part results are presented in table 1.

Regarding hotel websites visits, the findings evident continuous decline in traffic realized by desktop and computers, and the growth in traffic realized by mobile and tablet devices. In 2013, growth was recorded on desktop computers and falls in traffic realized by mobile and tablet devices. Such inconsistency of the trend may be due to changes in the web site design either in the way of data tracking.

TABLE 1   Hotels and Travel Agencies Web Site Visits by Devices (%)

Year	Desktop		Mobile		Tablet	
	(1)	(2)	(1)	(2)	(1)	(2)
2010	99	99	1	1	0	0
2011	97	97	3	4	0	0
2012	90	92	5	2	5	3
2013	81	83	10	2	9	7
2014	78	72	18	6	6	10
2015	64	62	27	10	10	11
2016	60	57	34	22	10	9

NOTES   Column headings are as follows: (1) hotel, (2) travel agency. Authors' research, based on 35.208.541 hotel website visits 35.208.541 travel agency website visits.

TABLE 2   E-Commerce Transaction Statistics, for Hotels and Travel Agencies (%)

Year	Desktop		Mobile		Tablet	
	(1)	(2)	(1)	(2)	(1)	(2)
2010	100	100	0	1	0	0
2011	99	96	1	4	0	0
2012	94	97	1	2	5	1
2013	90	96	6	2	4	2
2014	96	93	2	6	2	1
2015	86	89	5	10	9	2
2016	79	68	6	22	15	10

NOTES   Column headings are as follows: (1) hotel, (2) travel agency. Authors' research, based on 35.208.541 hotel website visits 35.208.541 travel agency website visits.

As far as travel agencies websites are considered, the data indicate that in 2010, 99% of traffic was recorded through desktop devices, while mobile traffic was 1%. In 2012, tablet devices slowly appear with 3% of share. During the whole period is evident the permanent decline of internet traffic realized by desktop and permanent growth of internet traffic realized by mobiles and tablets. The aggregated data for 2016 point out that 34% of internet traffic were realized by mobile devices. Compared with the data referring the hotel websites, it is evident that the growing trend of internet traffic realized by mobile devices is present in both, hotels and travel agencies.

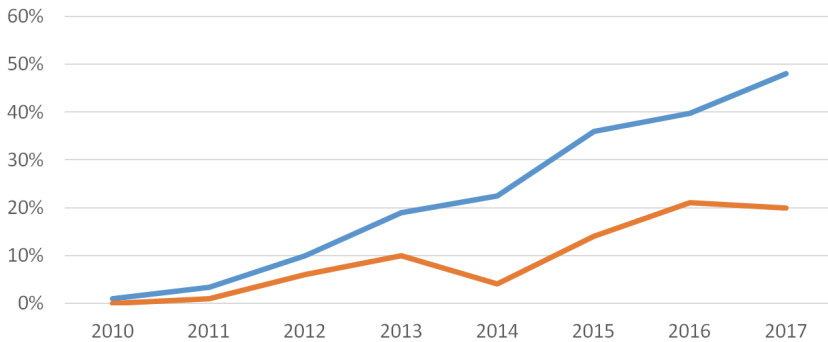The second research part results are as presented in table 2.

FIGURE 1   Hotel Websites Visits and Conversions Realised by Mobile Devices/Growth
Trend (authors' research, based on 35.208.541 hotel website visits; blue –
visits, red – conversions)

Regarding eCommerce transactions realised by mobile device on hotel websites, it is evident less growth on mobile and tablet transaction than in previous research part focused on the web site visits realised by mobile devices. Many users still do not feel safe when it comes to online payments, especially through mobile devices, so when they pay online; they actually do it on desktop computers.

Referring travel agencies web sites, their arrangements provide required more interaction between users and agencies before the final sale. The related process enabled shopping activities tracking through the available web site analytics tools. For this reason, the conversion types used in this research are requests from the agency's web site. Significant growth referring the mobile and tablet conversion has been recorded since 2014 onward. According the findings, the traffic over desktop participates with more than 95% in total conversions over the web site. It means that the majority of the websites visits come from Croatia and the rest from abroad, respectively. Following the same, the Croatian users seems as still mistrustful towards digital technologies; moreover they prefer personally contact with staff, both in agency office and by phone, less by emails correspondence.

Figure 1 and figure 2 indicate the growth in mobile Internet traffic regarding visits and conversions trend, for hotel and travel agency respectively.

Referring to hotel websites (figure 1) the visit curve has a steep slope of conversion curves, which was expected due to fact that online booking and online payment options are not still supported by many websites.
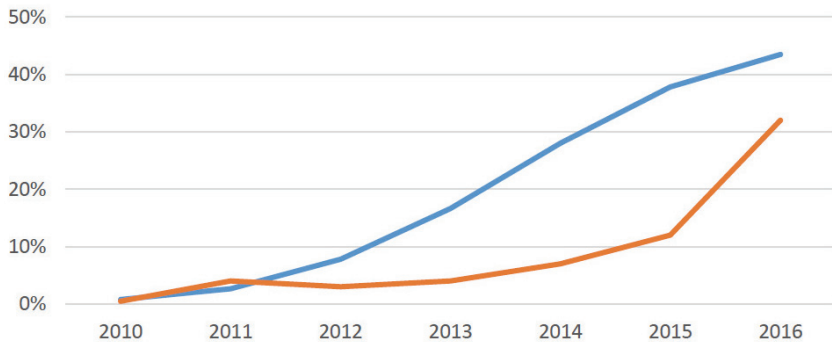
FIGURE 2   Travel Agency Websites Visits and Conversions Realised by Mobile
Devices/Growth Trend (authors' research, based on 35.208.541 hotel
website visits; blue – visits, red – conversions)

Despite the small sample of the data covered by this research, the trend
of mobile Internet traffic growth is quite evident.

Figure 2 indicated the growth in mobile Internet traffic regarding vis-
its and conversions trend but in the travel agencies segment. The same as
in hotel sector, the visit curve show the higher growth rate than the con-
version curve. As the curve of the visit slowly increases, the conversion
curve indicate the more noticeable shift in 2015 as a result of a significant
increase in mobile internet traffic in the last two research years.

Although, as stressed above, the data sample data is quite small, it
shows a positive correlation between site visits and mobile conversions
over a longer time period. Increasing the share of visits to web site visitors
by mobile devices are growing rapidly. Recognizing tourism responsibili-
ties regarding the role of mobile internet traffic become crucial for coping
with the global market challenges. Adapting any website to its user needs
and habits results in positive user experience i.e. increase the number of
satisfied users. Moreover, customer satisfaction claims to be more anal-
ysed as one of the key performance indicators (KPIS) within the digital
environment.

Discussion and Conclusions

The trends of mobile Internet traffic rise has closely correspond with the
significant growth in mobile devices (smartphones and tablets) sales and
usage. Furthermore, the constant development of mobile device func-
tionality additionally facilitates the Internet searches through the mo-
bile devices and thus supports the Internet traffic trend. Moreover, mo-

bile information services, owing to their ubiquitous nature supported with the a/m growing usage of tablets and other personal portable devices (e.g. mobile and smart phones), offer potential to overcome namely the stationary of the desktop Internet services. With mobile devices, particular smartphones, the omnipresent mobile Internet strongly 'touch' people daily. Having in mind that the demand on high-quality mobile services rises, both, hotel and travel agency, responsibility should adapt their websites toward more responsive design, and professional contents, as well.

The growth of internet traffic through mobile devices is present both, globally and locally, in particular EU countries. The population broadly uses mobile devices. The tourism sector follows the same trend. The use of mobile devices is evident in all travel phases including both, informative and interactive activities. Namely, apart from the information search, there is registered an increase in online hotel/agencies goods and services purchase rate. The younger (up to 35) especially support stated trends since, following Burkhard, Kow, and Fuggle (2017) they prefer to be more independent regarding planning the entire trip (transportation, accommodation, activities, etc.). Moreover, in accordance with Google (2016) already two thirds of the younger travellers have no problem with running the entire process on their mobile devices. Finally, according to CISCO (2019) complemented with Gaugliemo (2018) considerations, the future rise in mobile traffic are expected to be continued primary due to a shift in device mix toward smarter devices, but also due to other factors such as: more mobile users, more mobile connections, more responsive design, more secure on line payments, etc.

However, the broadly evident digital skills shortage should be considered as potential obstacles to a/m processes realisation. Based on overall insight in digital EU environment, the practical implications of this research are directed to raising awareness for the need of developing digital skills of: (i) hotel and travel agency managers to adapt their business to up to date mobile platforms, but also concurrently prepare, and educate if necessary, their staff to participate professionally, and (ii) business students in EU and abroad as generation that will soon cope with all forthcoming challenges of worldwide digitalisation. In spite of all, it seems that advancements in information and communication technologies supplemented with the raising availability of tourism products and services on mobile networks will permanently both support and create market dynamics.

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