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### ISSUES OF SECURE AND SUSTAINABLE E-TOURISM: CASE OF THE CZECH REPUBLIC

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**Abstract.** The extent of the sustainable tourism is increasingly linked to the development of information and communication technologies, especially the Internet and for a long time the online market is becoming a key aspect of its further secure development. Current technological development brings with it significant digitization of all processes and significantly affects how today's companies are entering and communicating on the online tourism market. Similarly, as a result of these changes, the significant change occurs in consumer behaviour, and across all age groups. With the development of these technologies, today's consumer is not only knowledgeable and more experienced, but is increasingly being constant online part of this market. The development of online tourism market is thus increasingly strongly linked with the growth of the total Internet population and currently also the one, that is using to the Internet access the cellular infrastructure and equipment. From the perspective of the Internet population the Czech Republic is the fourth largest online population in Central and Eastern Europe, which creates a good starting point for its further application on the growing Central European online travel market. This article aims to analyse current consumer behaviour of Internet users in the Czech Republic in the field of tourism.

**Keywords:** eTourism, mTourism, sustainability, Internet, tourism, security, consumer behaviour

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**JEL classification:** L83, L81

## 1. Introduction

The development of information and communication technologies and the Internet in the last decades significantly affects the development of the global economy and its individual components, including its security and sustainability (Vosylius *et al.* 2013; Streimikiene, Bilan 2015; Išoraitė 2014; Grubicka, Matuska 2015; Tvaronavičienė, Černevičiūtė 2015; Štitilis, Klišauskas 2015). Tourism is no exception and e-Tourism is becoming one of the most striking phenomena of the late 20th and early 21st century and today it is one of the fastest growing areas (see e.g. Chiabai *et al.* 2014). Thanks to that the online information and services now are of the key factors affecting the consumer behaviour of tourists across markets. Permanent access to information of various kinds on the Internet leads to the fact that today's tourist is much more able to influence not only its own travel, but also travel of other tourists.

Current technological development brings with it significant digitization of all processes and significantly

affects how innovatively today's companies are entering and communicating on the online tourism market (Išoraitė 2014; Tvaronavičienė, Černevičiūtė 2015; Rezk *et al.* 2015; Išoraitė 2015). Similarly, as a result of these changes, the significant change occurs in consumer behaviour, and across all age groups. With the development of these technologies, today's consumer is not only knowledgeable and more experienced, but is increasingly being constant online part of this market. The development of online tourism market is thus increasingly strongly linked with the growth of the total Internet population and currently also the one, that is using to the Internet access the cellular infrastructure and equipment. From the perspective of the Internet population the Czech Republic is the fourth largest online population in Central and Eastern Europe, which creates a good starting point for its further application on the growing Central European online travel market (Indrova *et al.* 2015; or Herget *et al.* 2015).

This article aims to analyse current consumer behaviour of Internet users in the Czech Republic in the field of tourism. Due to absence of relevant data in this field in the Czech Republic own investigation of consumer behaviour of Internet users was part of this project, is carried out in period from November to December of 2013. The primary objective of this survey was to provide data characterizing the current position of the consumer in the sector of tourism. The secondary objective then was to create a default database for further comparison of the evolution of changes as a result of current and future development trends in eTourism on the domestic market and create the possibility of comparison with the development of the advanced countries of Europe, or the world.

## **2. Theoretical and methodological base**

### ***Theoretical base***

As stated by Buhalis and Law (2008) innovation and technology have developed hand in hand with tourism. From the 90th years of the last century, information and communication technologies contributed to the global transformation of tourism. A significant attribute of the current development is, for many years, undoubtedly Internet. Due to the significant increase in Internet penetration in the last decade it has seen a significant increase of eTourism which according Buhalis (2003) is the digitization and innovation of all processes and relations in tourism, which enables stakeholders to maximize their operation and efficiency. Authors Zelenka and Paskova (2012) in their glossary define generally eTourism as a label for connection of tourism and digital media, today especially with the Internet.

The reasons why the tourism sector is ideal for business on the Internet, are primarily product and service features that are marketable in the electronic environment. Peterson *et al.* 1997, Garín - Muñoz & Pérez- Amaral, 2010 see low cost, generally, as the key to the success on the Internet, nonmaterial values and high differentiability, which products and services in tourism represent. However, due to these features a high risk is related to the purchase, and as Buhalis & Jun (2011) state, this is the real reason why the customer goes on line and looks for as much information as possible to eliminate the perceived risk. At the same, Buhalis and Jun (2011) note that online booking of tourism products and services is considered to be the most successful eCommerce capitalization.

Equally significantly, the consumer behaviour is now affected by social media. Today's tourist is not only influenced by the information obtained from a distribution channel offering mainly reviews of clients who actually consumed the offer and decided to share their experiences through social media, will be in the viewfinder as factors that will radically affect the behaviour of today's consumer. The importance of this is statistically proven: up to 65 % of tourists from all over the world use sites related to tourism on social media (Rose 2011). With the development of ICT, the literature points to the emergence of a new type of user called prosumer (Kaplan & Haenlein 2010). The word is a combination of words Producer (PRO) and Consumer (SUMER), a new generation of customers who generate information (reviews, comments, videos, photos, etc.) and share them with others while, at the same time, they search other people's information for their own benefit. What is important to know about this expanding group: they trust their peers or other users/colleagues/friends more

than the information from professionals or businesses themselves. They might even not notice that they were addressed by marketing departments through distribution channels such as television, radio, magazines, websites, etc. Opinions of people from the same community they usually consider relevant and unbiased (Rodriguez 2009).

Rodriguez (2009) goes on to subdivide these prosumers into native digital users, digital immigrants and digitally conscious people. The first group are so-called native speakers of the Internet language. They were born into the information and knowledgeable society and consider it natural to accept new applications. The second group, the digital immigrants, is formed by the generation of users aged around 30-50 who are at the peak of their careers and do not have sufficient time to become familiar with new technologies. If they wanted to keep up with the society, they would have to put in a lot of effort. The last group are digitally conscious people who have enough time and readiness to learn about the latest releases.

Currently, the mobile Internet and mobile technologies are starting to be a key aspect for the further development of eTourism. If we go from definition of eTourism from Buhalis (2003), we can define mTourism as a set of digital activities that tourism bodies make through a mobile device (Vasko 2013). A significant trend that mobile technology brings today is to strengthen the influence of the customer. Mobile phones and tablets have become an integral part of his life, as confirmed by the results of numerous studies. Travelling with technology is becoming common phenomenon, and by Molz (2012), we can talk about these tourists as "flashpackers". It is a neoplasm that refers to the current situation when in their backpack; people are packing their digital devices such as laptops, smartphones and tablets, to be able to stay online during the trip.

Consumer behaviour (Koudelka 2006) is one of the levels of human behaviour. It includes both the reasons that lead consumers to use certain goods and ways in which they perform, including the effects that accompany this process. It also includes how they subsequently behave after consumption of the goods. In relation to the use of the Internet and its impact on consumer behaviour in tourism here can be included what devices users use to connect to the Internet and to plan their journeys, how to look up for information and services, structure and sources of information, what is susceptible to their decision making, with what equipment they book their stays at hotels or flights, and how much time users spend on the Internet during their holidays, etc. From this perspective, the current level of development of current technology gives consumers the opportunity to perform a variety of new activities, which is reflected not only in practical action but also in a change in the characteristics of its behaviour.

The behaviour of tourists who make extensive use of the Internet and ICT has recently changed radically, according to Sigal (2012), and also significantly affected the tourism sector, namely, in principle, in two different waves. On the one hand, in terms of content, consumers are involved in its creation: they write reviews on accommodation facilities in which they have stayed, they propose new activities, get in touch with other tourists and create new experiences, etc. All of the above influences the decisions of other passengers, thus significantly change their consumer habits. On the other hand, in terms of technology, new devices (such as tablets, smartphones, etc.), technologies (maps, geotagging, etc.) and connectivity (Wi-Fi, 3G networks, etc.) make such behaviour easier and that is before, during and after the actual consumption process.

The use of technology in the context of consumer behaviour is influenced by lifestyle changes - technology serves as a mark of fashion, or social status, allowing us to link the activities of work and leisure, allow us to change the ways of communicating and sharing experiences. In addition, individual technologies do not act separately, but there is a greater extent than before to more complex solutions and applications. This overlap strongly influences the actual buying process in all its stages. Mobile technologies allow us to fundamentally change the time needed for own decisions and more or less blend the different phases of consumer behaviour (Vasko 2013). In addition, the development of mobile applications and implementation of new technologies into mobile devices are creating ideal conditions for their wider use, which is now increasingly moving into the area of self-consumption in the place of residence. At the same time mobile technology offers more options and

time flexibility, which is reflected primarily in the use of services at the last minute, but offers great potential in terms of travel management (its changes) within own trip duration. Mobile technology brings a deeper and broader opportunity for further development eTourism (Vasko 2013).

### ***Methodological base***

For obtaining the basic empirical data was used statistical method of quantitative research based on respondent questioning. Statistical survey was done by indirect questioning on random respondent sample, so the results can be considered as unbiased and generalized on whole population. Statistical survey was done in accordance with the generally valid methodology for all steps of survey: sample design, data collection instruments, statistical adjustment of data, data processing and final data analysis. For creating the questionnaire were used mainly direct questions with closed answers. In some cases were used questions with semi-opened answers or with multiple choices. As a result of the survey were obtained data file with nominal-polytomous or ordinal-polytomous variables. The evaluation of the results has been done by simple statistic methods using descriptive methods and contingency tables.

Creating of the questionnaire was based, besides its own objectives, on similar researches abroad - mainly research of the company PhoCusWright's in order to make a comparison of the results with several studies of this company focused on both the European and international tourism services market. The choice of this company was not accidental, as it is a reputable company operating on the international market, which is dealing with this issue for many years and their services are also used by major companies in the distribution of tourism services around the world - such as GDS Amadeus, Sabre, IATA and more. The questionnaire was divided into two parts - the first general one focused on the overall impact of the development of online travel market in the Czech Republic, or its impact on consumer behaviour of Internet users. In the second part, we tried to capture the cumulative impact of the development of mTourism probably as significant future driving force for its further development.

The actual survey was conducted by CAWI (Computer Assisted Web Interview). To obtain a relevant sample of respondents in the dissemination of the questionnaire was used a potential of social networks and e-mailing. Some respondents filled out the questionnaire in the form of direct links with mobile devices. However, from the perspective of resource site visits with the questionnaire predominant a form of direct link over social networks (Facebook) clearly and was 98 %. On the other hand, it is expected that a large number of survey respondents primarily receiving information from social networks used to access also the direct link with the questionnaire. The overall scope and complexity of the questionnaire (25 questions mostly structured) was also reflected in the total final number of completed responses. In the period, the questionnaire was opened by 1129 respondents, finally was completed by 676 respondents, representing 59.88 %. To a full 52 % of respondents completing took approximately something between 5-10 minutes, to the next about 18 % of the respondents filling took 10 to 30 minutes.

In terms of territorial distribution of respondents the largest proportions of respondents was in Prague (39 %), Central and Southern region (12 %), various other regions then have a relatively equal representation. For self-evaluation was used after cleaning 625 questionnaires. From this amount 46.5 % respondents were men and 53.5 % women.

Development of own contribution is based primarily on the methods of analysis, synthesis and scientific reasoning.

### **3. Results**

The current research is divided into two main parts. The first part of it focuses on the general specifics of the impact of the Internet on consumer behaviour in tourism. Then the second part deals exclusively with mTourism and its impact on consumer behaviour of Czech citizens. Subsequently in both cases the particular stages

of the purchasing process of consumers were examined, namely it was a phase:

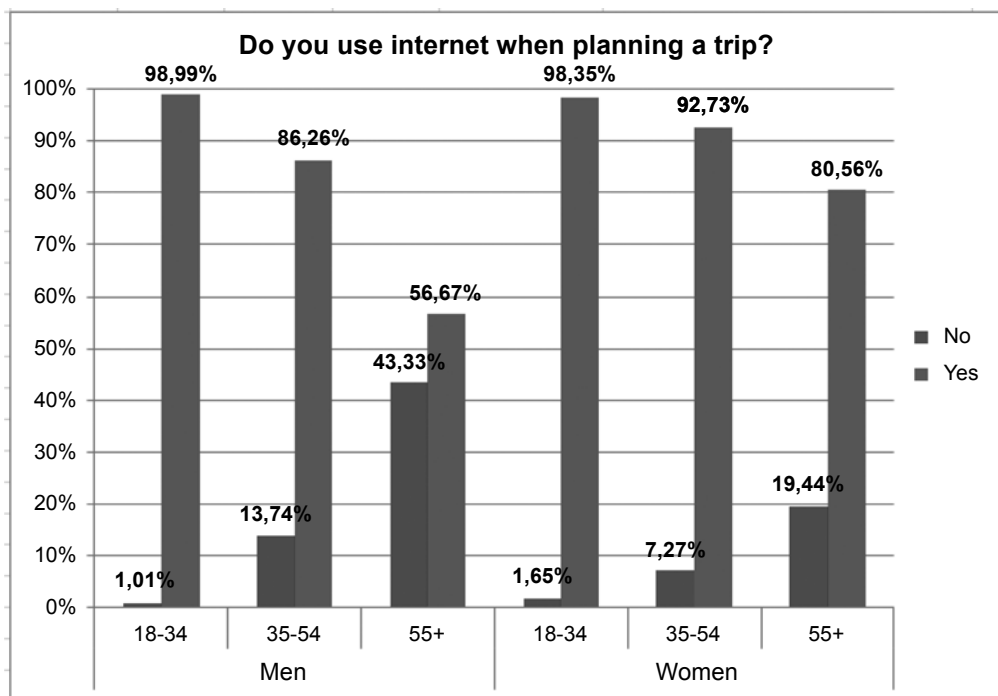
- purchase planning, including searching for information;
- choice of services and comparing options;
- the purchase itself;
- enjoying the services;
- post-purchase, including the experience and feedback of tourists.

Both parts are closely connected and in many aspects the contents overlap. In terms of the research objectives, however, it is very interesting to analyze them separately.

### *E-Tourism and general characteristics of consumer behaviour*

Based on the research and the following analysis of relevant data it was found that in the Czech Republic the Internet is used by more than 90 % of Internet users to plan their travels. The chart (Fig. 1) below clearly shows that planning their trips with the help of the Internet is used most by people under 34 years of age. Tourists over 35 also use the Internet, but mainly the male population. In contrast to the development of the Internet population we can see lesser activity especially in the older age population, which is generally relatively large in the Czech Republic. It can be concluded that in the tourist information field these users are still not as experienced and more general use of the Internet prevails among them.

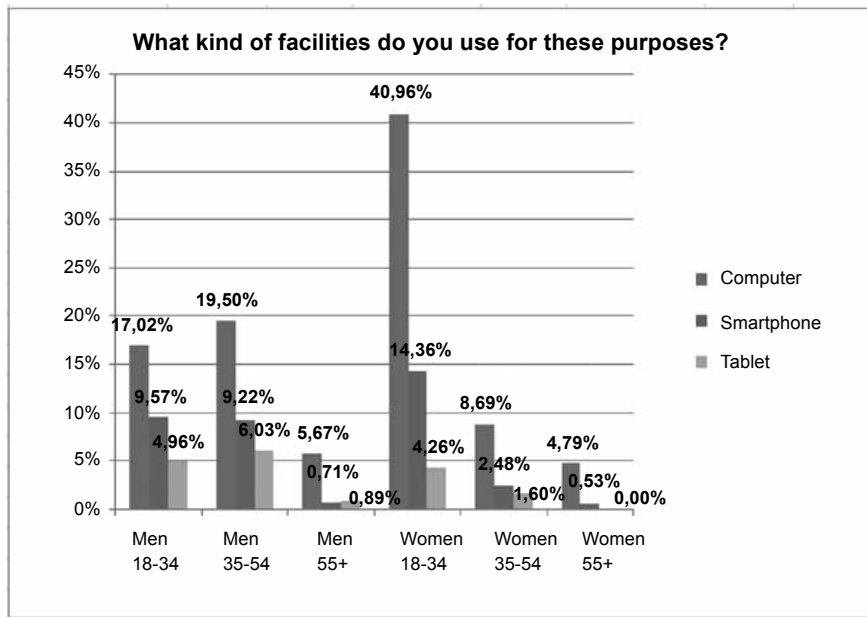
Figure 1. Usage of Internet for trip planning by gender and age



Source: Own research

Looking at the devices used by most Internet users who plan their journeys, it is naturally a PC which still dominates over mobile devices (Fig.2). It is probably due to the fact that they plan their trips from their homes or workplaces where they have a computer available and they can utilize all their advantages, among which is especially a greater clarity and comfort of use.

**Figure 2.** Devices used for the Internet trip planning by gender and age

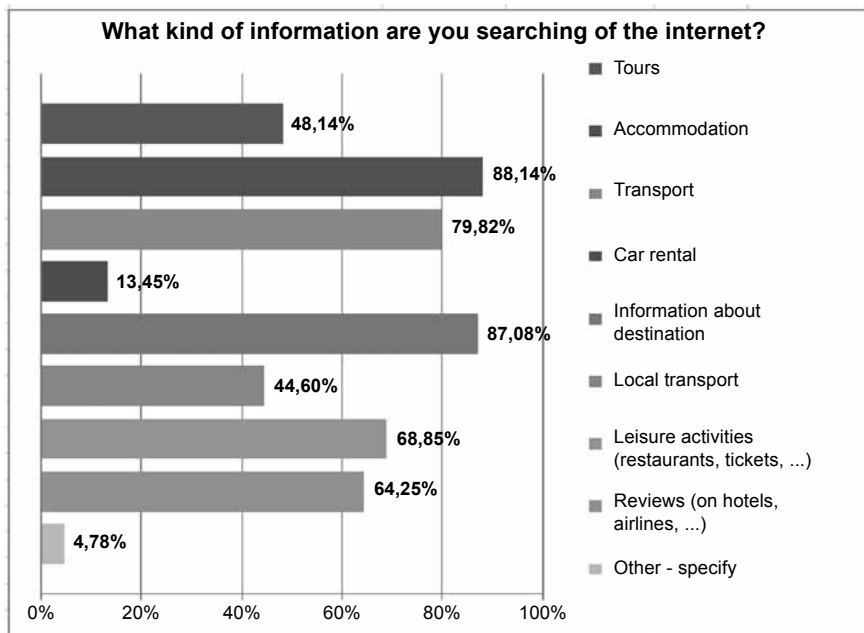


Source: Own research

On the other hand, we can also see a relatively high percentage of mobile devices, which corresponds with a similar trend abroad. Tablets and smartphones are used, again, more by men than women.

Respondents browse the Internet especially for information about accommodation, transport and destination itself (Fig.3). The spectre of interest is, however, rather wide – they are also interested in Internet reviews, optional tours, car rentals, information about local transport, climate, weather, visa requirements and the like. Although respondents enjoy searching (64 %) and then they exploit the Internet reviews about the providers and the intermediaries of travel services, then after the trip, they do not bother to write such reviews, as we can see from the results of this research.

**Figure 3.** Information searched on the Internet



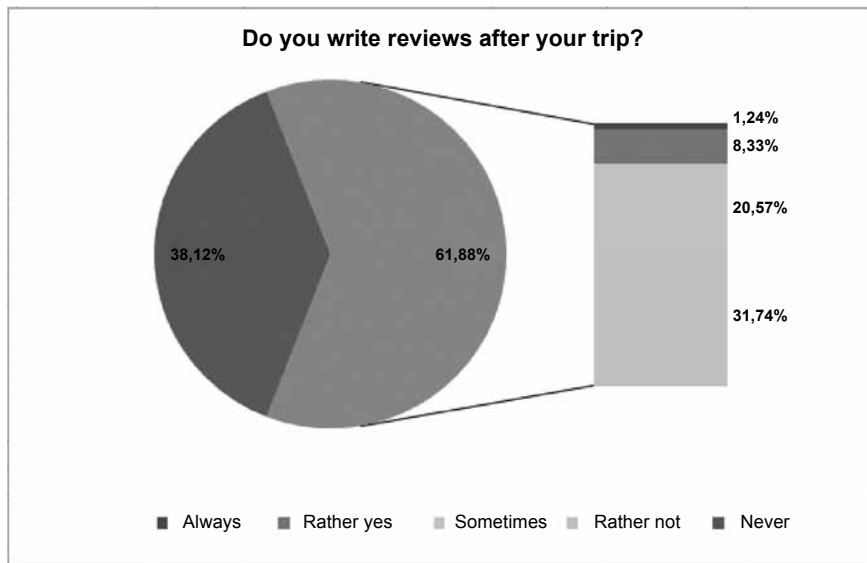
Source: Own research

When choosing services, the most frequently used sources of information are Internet search engines like Google.com or the Czech Seznam.cz. The runners up are service provider websites, i.e. hotels, airlines and other. Here we have to point out that there is a difference in the information sources used for the selection of services and for their purchase. Many people choose services via Internet search engines, but then, they make the purchase through a travel agent. Or vice versa - they use Booking.com to find a hotel, and then they contact the hotel directly and buy the service directly from the provider. As the number of compared online resources for the selection of the route is concerned, almost 60 % respondents used the information from three to five different sources. A quarter of them tried six or more resources and less than a fifth selects a maximum of two sources. As follows from the previous questions, it is mostly about information related to accommodation, transport, destinations themselves and leisure options. That shows some experience in using the Internet for purchases of travel services – again, the Internet users follow the European trend.

In the shopping process, consumers are already sure when and where they want to go. But the decision where they will buy the service, it is not so clear - at the age of the Internet, the possibilities are many. When purchasing most Internet users (72 %) visit a particular provider website directly, where they do the purchase. Less than a half of respondents purchase desired services as a package in the form of a trip from a travel agent. Frequent are also purchases through intermediary services, such as Booking.com or Kayak.com. Mobile applications are used for purchases by only 8 % respondents. Comparison of the planning and purchasing phases shows that, when choosing a trip, respondents try more sites, but they purchase mainly from one. The difficulty here might be the lack of trust in online payments. Some respondents therefore stated that they do not buy on the Internet, they only book. During their stay itself, again, 75 % respondents go online mainly to Google or Seznam to look for information. Less than a half of the Internet users find useful destination websites and online tourist guides. While mobile applications are not much used when buying the journeys, a greater percentage of uses was observed during the stay – here again, unlike the shopping phase, we are talking about offline maps, navigation and traffic information. Part of the answer to the question respondents were asked was, that they do not use online resources during the stay because most of the information has already been found in advance, or they prefer asking locals for advice or they use printed materials. This can be explained by the high price of mobile connection, especially abroad, and also the commitment to the Internet resources provided free of charge by the providers of tourism services. The least percentage is represented by the information from travel agents and tour operators (3.5 %).

As already noted, although Czech Internet users plan their journeys using the experience of others on review sites, they are not very active themselves (Fig.4). In this respect, the Czech consumers compared to other countries lack behind a little, as almost 40 % of respondents have never written a review, and 30 % more often than not write them. Those who are willing to share their impressions of the visited destinations rather use service provider sites directly, then Booking.com, intermediaries' (travel agents or tour operators) sites or Tripadvisor.com. Less popular are Orbion, Holidaycheck, Zoover or social networks.

**Figure 4.** Writing reviews after journey



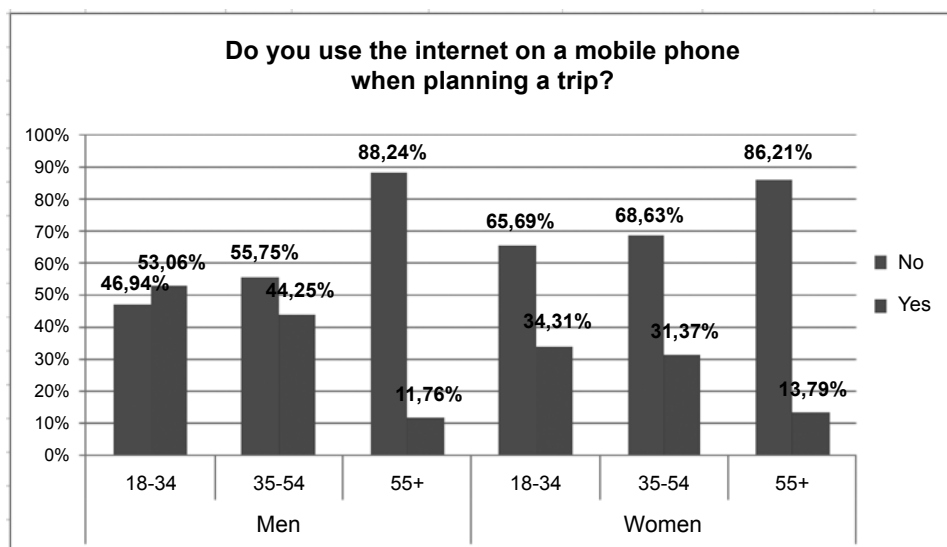
Source: Own research

***Influence of mTourism on consumer behaviour***

The rise of smart phones has greatly affected the tourism market, too. Consumers use paper maps and printed guides less and less and they favour Internet in mobiles phones conveniently available anywhere in the world. Current smartphones and applications can quickly translate unknown words, help with transportation or locate you anywhere in the world. They work as boarding passes, make dinner reservations for you and help you find accommodation. This part of the survey gives an insight into the frequency and the possibility of using mobile phones not only for planning and purchase of trips and services during their stay, but also when using mobile applications.

Mobile devices are used for planning trips by around 40 % of Internet users of this survey (Fig.5). In the chart below we can see that the mobile phone for these purposes is favoured by predominantly male population.

**Figure 5:** Usage of the Internet in mobile phones for trip planning by gender and age.

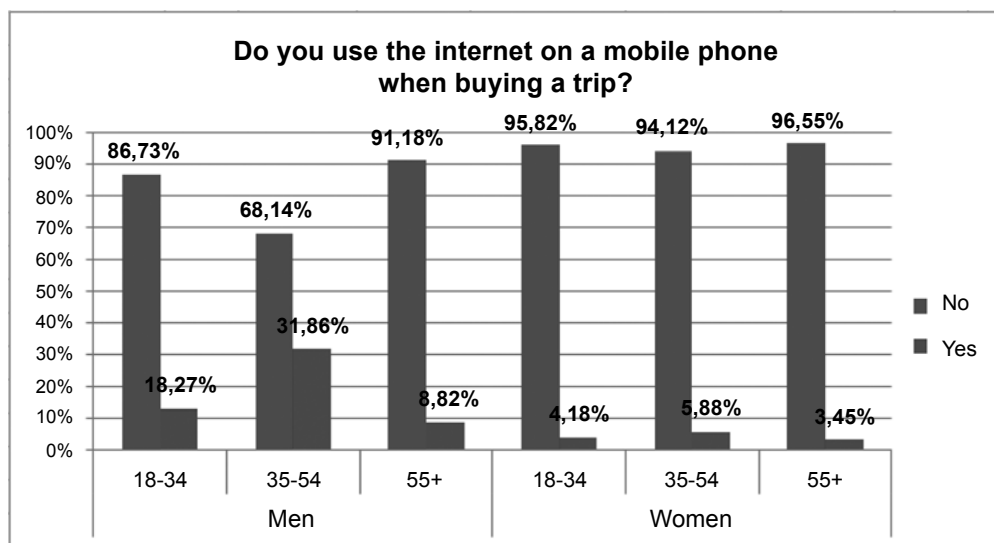


Source: Own research



Significant differences were observed in comparison with the shopping phase. In this case, the respondents used mobile phones more cautiously. When buying their journeys only 10 % of respondents trust purchasing via mobile phone. Most frequently they buy accommodation (79 %), airline tickets (70 %), bus tickets (62 %), train tickets (35 %) and local transport tickets in the destination (28 %). The graph below shows an interesting aspect in the category of 35-54-year-old males, where 32 % of respondents purchase services through mobile phones, a ratio very different from the remaining categories (Fig.6). The most common reason why respondents would not buy their trips through mobile phones is the poor readability and clarity on the small screen. Other reasons for the reluctance to pay via mobile phone is slow loading pages, lack of confidence in the safety of the reservation, expensive connection and inability of the mobile version of the site to make such reservation. Some respondents stated that they do not have or use the Internet in the mobile phone. While purchasing by mobile phone is used by the minimum number of respondents, during the stay in the destination the number increases significantly, up to 51 %. Most frequently maps are used and then the respondents seek further information about local transport, particular attractions, restaurants and tours. Less frequently mobile phones are used for restaurant bookings and tickets as well as online flight checking-in or boarding passes. As most other respondents stated, they used mobile phones to stay connected with family and friends, both through email and social networks, they are also interested in domestic affairs or seek information about the weather.

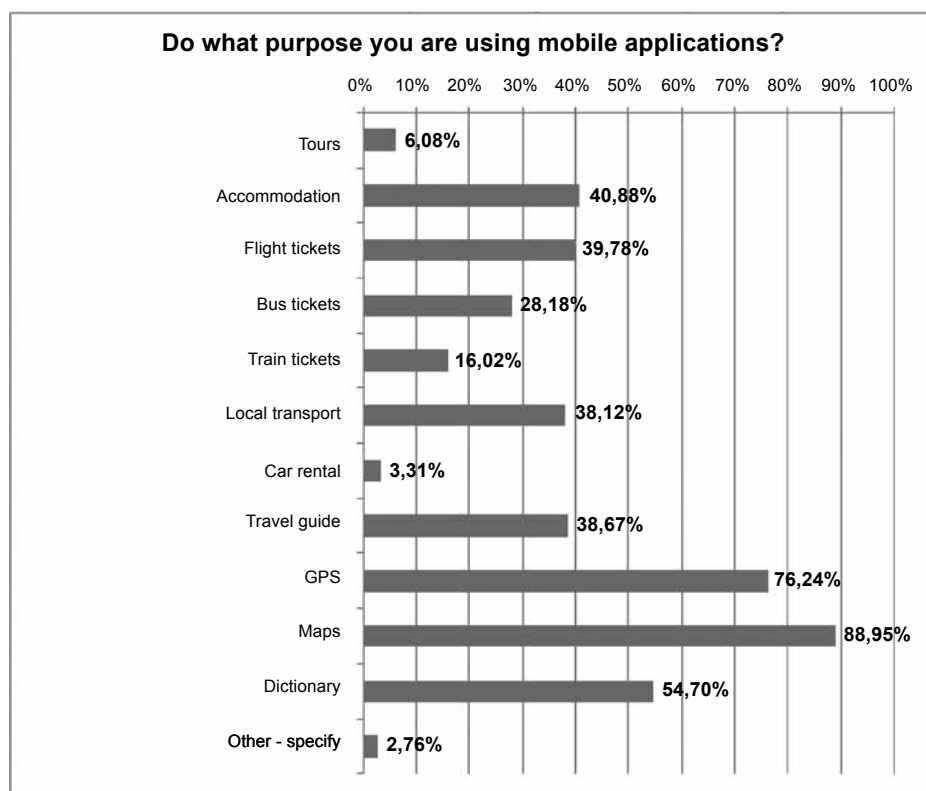
Figure 6. Usage of the Internet in mobile phone for buying of the trip



Source: Own research

Despite the fact that smartphones are owned by an increasing percentage of the population, travel-related mobile applications are used by only 32 % respondents. The biggest complication is the need of mobile applications online access, which is not affordable for most consumers abroad. Therefore, more and more respondents are interested in offline applications that can be downloaded before the trip, which are then used in large numbers. At the same time the research shows that of the respondents who said they use the Internet in the mobile phone during their stay in the destination, only less than 48 % of them also use also mobile applications (Fig. 7) associated with travelling. Specific examples of widely used applications associated with travel include maps, navigation, airlines' applications, dictionaries, timetables, weather, Booking.com, Tripadvisor, Michelin Travel, Tabletenky etc. Most respondents found their applications at the App Store/Obchod Play or they downloaded them on the recommendation of friends and people they know.

Figure 7. Purposes of usage of mobile applications



Source: Own research

#### 4. Conclusions

The market analysis shows that the Czech Republic is now a territory which benefit from high-tech level and user maturity of its consumers, just as the developed countries of Western Europe. At the same time it can be assumed that their consumer behaviour is strongly influenced by the high penetration of mobile phones in particular, when a role is also played by a social aspect and a higher commitment by Czech consumers for the fashion brand. From the perspective of online resources used in planning and own travel (or place of stay), can be observed rather slightly different representation, however, the same trend. Also, as in other European countries, such as France or Germany, there are probably reflected some experience in the use of online resources, which is reflected in the way the Internet users in the CR approach to search and purchase travel services. The overall level of services used and the information shows the growing importance of mobile technology for the tourism sector. Looking at the releasing mobile services market in the Czech Republic can be expected an increasing demand for mobile Internet and consequently an increase in the use of mobile applications, mobile web and tourism services in general.

Despite the overall high use of social networks in the Czech Republic, it is clear that the Czech Internet users like to be influenced by these resources, but do not tend yet to share their experiences within different review systems. Also, it can be stated that a relatively high percentage of Internet users use mobile Internet and applications at target destination. However, it is expected that abroad rather will be used within the free connection to Wi-Fi networks of tourism services providers as wider use will probably still impeded by the high price strategies of domestic mobile data services providers.

In the introduction it was stated, that this research was inspired by similar researches from abroad, mainly by research of the company PhoCusWright's from 2012. This part will be dedicated to comparing the situation in the Czech Republic with the European trend. In general it is obvious, that the situation in the Czech Republic copies the European average, although one can encounter several partial differences.

When planning and purchasing trips, people still tend to prefer using computers because they find them more comfortable. Also, it is clearer and safer for them, mainly in payment operations, in comparison with smartphones and tablets. 60 % of Czech Internet users compare 3 to 5 different sources when planning a trip. Only one third uses more than 6 different sources. In Europe, more than 6 resources are used only by about 14 % of travellers. On the other hand, one third of Europeans compare only 1 to 3 sources, which is considerably higher percentage than in the Czech Republic. When selecting the journey most of the Europeans use the Internet search engines, the second most preferable way are websites of travel agents and tour operators. Here another slight difference is visible – people in the Czech Republic are increasingly turning directly to the service providers – hotels, airlines, etc. Both Czech and Europeans pay attention to travel websites providing information and reviews on travel-related businesses. Unlike Europeans, Czechs unfortunately don't participate in writing reviews.

Smartphones and tablets are more used during the stay in the destination, where the people don't have computers and prefer to be more mobile. These devices are then used more by men than women. There are several reasons for that. The research has shown that smartphones are used especially by business travellers, who are mostly men, and men are also bigger fans of modern technologies. Also, the age is an important indicator – the older the Internet user is, the less they use the Internet in mobile phones. This trend, however, is changing, and according to research work in the world, from year to year there are more and more people older than 55 years using Internet in mobile phones. In the future this increase is expected to continue, which corresponds hand in hand with the aging of the current Internet population.

Czech Internet users differ from Europeans also in the usage of smartphones during their stay in a destination. While Czechs use their mobile phones mostly for maps and dictionaries, Europeans in general, besides maps, they look for restaurants, cultural events, hotels or flight tickets. The most used mobile applications are maps in the first place, both in the Czech Republic and Europe. Offline applications are especially popular with travellers. Those are downloaded at home or in the hotel, therefore they don't need Internet connection, which may be abroad relatively expensive. Sustainable development of tourism is dependent on level of cybersecurity and possibilities to develop of e-tourism in the future.

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