DETERMINANTS OF MOBILE INTERNET USAGE AND OPPORTUNITIES FOR M-MARKETING AMONG YOUTH IN THE REPUBLIC OF MACEDONIA

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ABSTRACT

The number of mobile Internet users is growing rapidly worldwide and the use of mobile Internet is changing consumer behaviour. Therefore, companies are extending their marketing opportunities and reaching their audience via mobile devices. Mobile marketing is gaining popularity in the last couple of years, due to the possibilities offered by new technologies embedded in smart phones. There have been several theoretical models that explain technology acceptance. Building on the extensions on UTAUT, consumer use and acceptance of technology led to UTAUT2 model. The aim of the research is to connect use of mobile Internet among young people in the Republic of Macedonia and opportunities of mobile marketing. The penetration rate of smart phones is increasing globally and in the last trimester of 2015 more than 72% of the Internet users in the country used smart phones to access the Internet (DSZ, 2015). The survey was conducted in April /May 2016 among more than 300 young people. Original UTAUT2 model is proposed to examine the influence of several constructs that influence use behaviour (performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, price value, and habit). The factors are explained in the context of the research and attention is paid on habit, hedonic motivation and price value as predictors of the mobile Internet usage. The results of the empirical study are fully supporting the model. Namely, all relationships hypothesized in the model are proved to be significant in our sample. However, the moderators such as age, gender and experience used in the original UTAUT2 model were not included, but are expected to be influential when analysed in larger and more representative sample. The significance of the proposed predictors can help managers formulate their marketing strategies and profound their marketing communication efforts.

KEY WORDS: UTAUT2, mobile marketing, mobile Internet, Republic of Macedonia.

1. INTRODUCTION

As the world becomes interconnected, the rapid technological development in recent years, especially the development of mobile technologies gives new opportunities for all types of organizations to expand their marketing communication channels with their customers and provide new ways of advertising.

In the literature, there are several different terms that define the concept of marketing through mobile media, namely mobile marketing or m-marketing, mobile advertising, wireless marketing, and wireless advertising. According to the Mobile Marketing Association (MMA, 2009) mobile marketing is defined as, "A set of practices that enables organizations to communicate and engage with their audience in an interactive and relevant manner through and with any mobile device or network". Mobile marketing also refers to using a wireless medium to provide consumers with time and location sensitive, personalized information that promotes products, services and ideas, thereby benefiting all stakeholders (Scharl, Dickinger and Murphy, 2005).

Besides the Internet and personal computers, nowadays mobile phones are becoming the new "toy" in marketers' hands because they are extremely popular and offer people the opportunity of immediate access to multiple information sources. Through the introduction of data services, Short Message Services (SMS), Multimedia Message Service (MMS), mobile Internet, etc., mobile phones are rapidly becoming a viable commercial marketing channel (Barutcu, 2008).

The total number of mobile phone users worldwide from 2013 to 2019 has an increasing trend. For example, in 2013 there were 4.01 billion mobile phone users worldwide, 4.23 billion in 2014, while for 2017 the number of mobile phone users is forecasted to reach 4.77 billion worldwide (www.statista.com). Regarding the mobile phone Internet user penetration worldwide, in 2015, 52.7 percent of the global mobile phone population accessed the Internet from their mobile phone. This figure is expected to grow to 61.2 percent in 2018. According to the predictions in the Internet society global Internet report (2015), mobile Internet penetration is predicted to reach even 71 percent by 2019 and the usage per device is forecasted to more than triple by 2019 (Internet society global Internet report, 2015). According to the same report, 192 countries have active 3G mobile networks, which cover almost 50% of the global population. The total number of smartphone users worldwide from 2014 to 2019 is rising as well. For example, in 2014 the total number of smartphone users worldwide has reached 1.59 billion and for 2016 and 2017 it is forecasted to reach 2.08 i.e. 2.29 billion respectively (www.statista.com). Smartphone sales are the majority of mobile handsets sold worldwide; tablet sales will soon exceed the total PC sales. While there are at least five mobile platforms, Android has an 84% share of smartphones, and 72% of tablets. There are well over 1 million apps available, which have been downloaded more than 100 billion times (Internet society global Internet report, 2015).

These high rates and promising forecasts for the use of mobile Internet and smart phones offer a large mass of potential for all kinds of marketing-related applications, and most important of all, the possibility for marketers to develop and control new types of attitude and consumption habits (Cătoiu and Gârdan, 2010). Opportunities in wireless marketing and advertising have therefore risen a great deal due to higher penetration, also interactions between consumer and advertiser have been increasing rapid and easy (Cătoiu and Gârdan, 2010).

According to the data of the State Statistical Office of the Republic of Macedonia, in the first quarter of 2015, 69.4% of the households had access to the Internet at home. Almost all (99.5%) of the households with Internet access had broadband (fixed or mobile) connection to the Internet. The Internet was mostly used by pupils and students, i.e. 94.7% (DSZ, 2015). 71.2% of the Internet users in the first quarter of 2015 used a mobile phone or a smart phone for accessing the Internet away from home or work (DSZ, 2015). According to the Agency for electronic communications at the first quarter of 2015 in the Republic of Macedonia, there were 2.131.027 registered active users of mobile phones. Almost half of them 48.7% (1.038.620) are users of mobile Internet. Regarding the penetration rate of smart phones which is increasing globally, in the Republic of Macedonia in the last trimester of 2015 more than 72% of the Internet users in the country used smart phones to access the Internet (DSZ, 2015).

Today, mobile advertising is a big business. For example, eMarketer has estimated that in 2016, mobile ad spending worldwide will increase, reaching $100 billion and accounting for 51.0% of all digital ad spending. Between 2016 and 2019, mobile ad spending will nearly double, hitting $195.55 billion to account for 70.1% of digital ad spend as well as over one-quarter of total media ad spending globally. Not surprisingly, this growth in mobile ad spending is being driven by consumer adoption of mobile devices. According to the same source, the 2016 will be the tipping point where mobile ad spending surpasses desktop. And while desktop advertising will remain a significant portion of marketers' budgets, mobile will continue growing in the double digits to gain more and more market share while desktop spending remains flat (eMarketer, 2016).

Having such high prospect of mobile technologies, with emphasize on the rapid development and penetration of smart phones especially among young people, marketers from different types of companies have the ability to communicate offers directly to the target audience whenever and wherever they may be offering much more personalized services. But, as is common with so many digital advertising channels that offer the promise of ever-increasing efficacy, while mobile marketing adoption and acceptance is on the rise, the marketers would have little ability to consistently generate profits without a clear understanding of the elements driving consumer acceptance (Becker, 2005). Therefore analysing the determinants of mobile Internet adoption and the significance of the proposed predictors can help managers formulate their marketing strategies and profound their marketing communication efforts. This counts for companies in the Republic of Macedonia as well.

2. METHODOLOGY AND RESULTS

Technological change and innovation are immanent forces that shape consumer preferences and behaviour, especially in the last decade of the twentieth century and the new era. Needs of the consumers and their wishes and attitudes are in line with the new products that are result of applications of the new technologies. Those words must be understood in the broadest sense from the view point of change – not only technological changes, but new ways of work habits, shopping experiences and patterns of communications are shaping the way consumers are behaving.

Resistance to change is mantra that is not only that – a myth. Resistance to change is everywhere – from the physical world up to the way people as workers and consumers are behaving. Two behavioural dimensions can be analysed –acceptance as a positive attitude a (ranging from high-use to non-use) and resistance even going to aggressive resistance (Van Offenbeek, Boonstra and Seo, 2013). Resistance to change can be resistance of the organization to accept change (of technology that influence it business processes) and resistance of an individual. According to

the latest researches leadership is the most important factor influencing organizational answer to change and is moderated by different factors (Appelbaum et al., 2015). Fresh perspectives for the adoption of innovation are analysed by Oreg and Goldenber (2016). They argue that companies can learn more about their consumers from analyzing the "laggards" who lack positive qualities and attitudes toward the innovativeness in product or service. Innovation and change resistance can be understood only by cross-disciplinary approach. According Oreg and Goldenberg (2016) resistance to change can be analyzed from four perspectives: "(1) individual-level factors include traits such as the tendency to experience anxiety in the face of novelty; (2) practical reasons include switching costs and threats such as the potential loss of one's expertise when an innovation makes it redundant; (3) process factors include, for example, communication and participation; and (4) contextual factors include country-level factors such as the economic situation and culture, as well as more fine-grained matches between the innovation and the context" (cited in Vouri, 2016).

The phenomenon of acceptance of new technologies is relatively widely elaborated especially in the last two decades. The interest of the researchers towards understanding the factors that influence organizational and individual acceptance of new technologies is nowadays not only general, but also industry or product focused. The beginnings of the theories are mainly based on theories in psychology and sociology. Adoption is an individual process which refers to the stages a person undergoes from first hearing about a product or service to finally adopting the new product or service. Diffusion signifies a group phenomenon, which suggests how an innovation spreads. Davis's technology acceptance model (TAM) is one of the most influential approaches to explain and predict user acceptance of information systems (Davis, 1989). TAM model is based on the Theory of Reasoned Action (TRA) and to some point on the Theory of Planned Behavior as an extension of the TRA proposed by Ajzen (Ajzen and Fishbein, 1980). This theory is a theory of attitude-behaviour correlation that correlates attitudes, subjective norms, behavioural intention and behaviour. " It has been shown that behavioural, normative, and control beliefs provide the basis, respectively, for attitudes toward the behaviour, subjective norms, and perceived behavioural control; that these three factors jointly account for a great deal of variance in behavioural intentions; and that intentions and perceived control can be used to predict actual behaviour. Based on these insights, investigators have been able to design effective behaviour change interventions"(Ajzen, 2012). In the Theory of Behavioural Control another factor is included as variable that is affecting both behavioural intention and behaviour-perceived behavioural control and the more resources and opportunities users think they possess, the greater should be their perceived behavioural control over the behaviour.

The Technology Acceptance Model (TAM) is widely used for explaining the acceptance of ICTs. Four of the most important concepts that have been constantly used in the TAM literature are perceived ease of use, perceived usefulness, behavioural intention and actual usage behaviour. The perceived usefulness of a technology increases with perceived ease of use. The more ease of use a user thinks a new technology is, the stronger his or her intention to use the technology; furthermore, the stronger the usage intention, the greater the actual usage behaviour. TAM model is not a general model; and it is designed to be applied only to computer usage behaviour (Davis, 1989). The original TAM model is extended to explain perceived usefulness and usage intentions in terms of social influence (subjective norms, voluntariness, image) and cognitive instrumental processes (job relevance, output quality, result demonstrability, perceived ease of use). The extended model, referred to as TAM2, was tested in both voluntary and mandatory settings. The results strongly supported TAM2 (Venkatesh and Davis 2000).

Unified Theory of Acceptance and Use of Technology (UTAUT) is formulated in order to incorporate different theories and to construct unified theory (Venaktesh et al., 2003). The role of UTAUT is to fully understand the usage as dependent variable. UTAUT is appropriate model for organizations that are in the process of introducing new IT and their employees are attending training of some sort, investigating both mandatory and voluntary use. The UTAUT methodology is primarily focused on acceptance in organizational context. The extension of UTAUT is UTAUT2 (Venaktesh, Tong and Xu, 2012). In UTAUT2 the theory is tested from consumer viewpoint, focused on consumer technologies. Actually, UTAUT was extended to be applicable to other context, such as the context of technologies for mass consumerism, such as mobile Internet and therefore mobile marketing which is a worldwide trend given the number of intelligent devices, applications, and services (the prediction is that in 2019 there will be more than 5 billion smart phone user in the world; www.statista.com). New contexts actually resulted in several types of important changes. The original UTAUT has been modified by three extensions: (1) investigation of its applicability in the context of new technologies, new user populations and new cultural settings, (2) the addition of new constructs in order to expand the scope of the endogenous theoretical mechanisms outlined in UTAUT and (3) inclusion of exogenous predictors of the UTAUT variables (Venkatesh et al., 2012). In order to use the proposed moderators of the constructs certain preconditions from the methodological viewpoint should be fulfilled. Therefore, in many investigations some constructs were dropped out, and more often some of the moderators due to methodological reasons. The UTAUT2 model is presented on Figure 1 (without moderators). This model is used in our research.

Figure 1. The Research Model (based on UTAUT2 model)
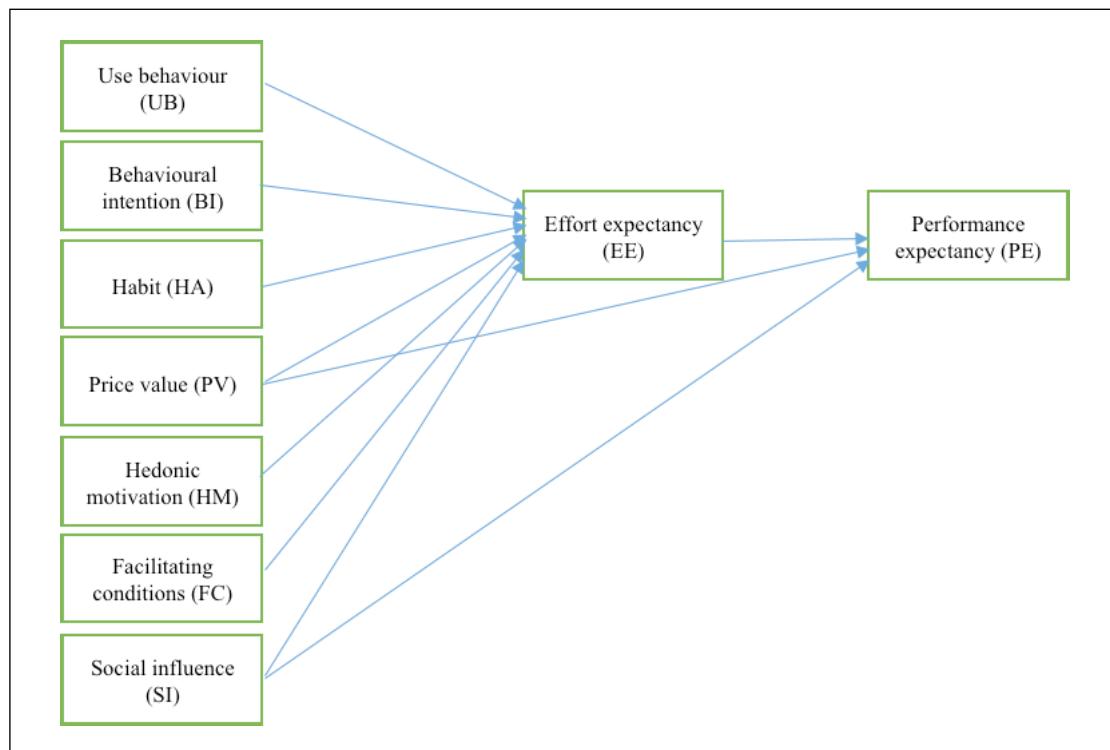
Source: Adapted from Venkatesh, V., Tong, J., Xu,W. (2012.) Consumer Acceptance And Use Of Information Technology: Extending the Unified Theory of Acceptance and Use of Technology, *MIS Quarterly,* 36(1), pp. 157-178., p.160.

There are 9 constructs and 3 moderators. Performance expectancy (PE) is defined as the degree to which using a technology will provide benefits to consumers in performing certain activities; effort expectancy (EE) is the degree of ease associated with consumers' use of technology; social influence (SI) is the extent to which consumers perceive that important others (e.g., family and friends) believe they should use a particular technology; and facilitating conditions (FC) refer to consumers' perceptions of the resources and support available to perform a behaviour (e.g., Brown and Venkatesh 2005). Performance expectancy, effort expectancy, and social influence are expected to influence behavioural intention to use a technology, while behavioural intention and facilitating conditions determine technology use. In UTAUT2 three more constructs are added –hedonic motivation, habit and price value.

Hedonic motivation (HM) can be briefly defined as the "fun" dimension of the attitude (Bruner and Kumar, 2005). The growth of mobile technology and smartphones allow users to control when, where, and how they engage in chosen activities that serve their needs, saving time, completing a task (utilitarian), entertain them (hedonic), or connect with others (social). Findings indicate that mobile users' engagement motivations including hedonic motivation do influence perceived value, satisfaction and mobile engagement intention (Kim et al., 2013). More precisely, hedonic motivation can be defined as "the fun or pleasure derived from using a technology" and it has been shown to play an important role in determining technology acceptance and use (Brown and Venkatesh 2005). Hedonic and utilitarian purpose of the mobile

devices determine how the nature of the device influences user beliefs and hedonic or utilitarian orientation of the mobile technologies (and mobile Internet) has implications for maximizing use (Wakefield, Whitten, 2006). Therefore, hedonic motivation is predictor of consumers' behaviour and use of technology.

Price value (PV) is specific predictor for consumer technologies because consumers as individuals bear the costs unlike workers as employees. The prices and overall costs usually have important influence on the consumers' intention to use a technology. For example, the result of an online survey among consumers of two most popular shopping websites in Taiwan shows that e-store image influences purchase intention through perceived value and utilitarian value exerts a larger influence than hedonic value (Chang and Tseng, 2013). Venkatesh (2012) is explaining that price value can be viewed as a "consumers' cognitive tradeoff between the perceived benefits of the applications and the monetary cost for using them". From the individual consumer view point price value of using the new technology is good when the perceived benefits of using the technology are greater than the real costs of obtaining it. In that case, price value has positive impact on the actual intention to use the technology.

Experience and habit (HA) are related predictors that are shaping user adoption of technology. Experience is measured in quantity of time of operational usage of certain technology by an individual. The more experienced the customer is, the higher is the possibility for him to have positive attitude towards using a new technology. Habit has been defined as the extent to which people tend to perform behaviours automatically because of learning

(Limayem et al., 2007) Habit is understood as "learned sequences of acts that become automatic responses to specific situations which may be functional in obtaining certain goals or end states" (Verplanken et al., 1997). Some authors stress out that intention is the main causal mechanism behind the enactment of behaviour (Ajzen, 2002). Limayem et al. (2003) defined IS habit as "the extent to which using a particular IS has become automatic in response to certain situations." The key word in this definition is automatic, while habit is logically connected with prior behaviour, as well. Experience may, or may not result in the formation of habit. Passage of time can result in the formation of differing levels of habit depending on the extent of interaction and familiarity that is developed with a target technology (Venkatesh et al., 2012).

In this context, habit is a perceptual construct that reflects the results of prior experiences. Kim and Malhotra (2005) and Limayem et al. (2007) found empirical evidence that prior use was a strong predictor of future technology use. In their research, Wang, Harris and Patterson (2013) concluded that experience accumulates, customers' continued use of a certain technology is initially largely rational driven (self-efficacy), then largely emotional driven (satisfaction), and, finally, habitual (habit). Over time, habit completely mediates the impact of intentions on future usage.

For the purposes of this research i.e. to analyse the determinants of mobile Internet usage and opportunities for m-marketing among youth in the Republic of Macedonia, a survey was performed based on the previously prepared questionnaire consisting of 35 questions. The questions (3-4 per construct) were based on the UTAUT2 Venkatesh's model and the answers were measured on a 5 level Likert scale (strongly disagree, ..., strongly agree). The survey was conducted in April /May 2016 among more than 350 young people, mostly students. The total number of received answers was 352, but after filtering of the data, 35 questionnaires were excluded from further analysis due to the missing data (more than 10%) and low standard deviation in answers (Hair, 2010) i.e. the total number of the sample is 317. The demographic characteristics of the sample are presented in the Table 1. The demographics of the sample is representing pretty well the population of young people in the country.

Table 1. Demographic characteristics

Demographic characteristic	Item	Percentage
Gender	Male	37.2
	Female	62.8
Citizenship	Skopje (the capital)	54.3
	Other	45.7
Nationality	Macedonian	88.9
	Other	11.1

Before testing the hypotheses based on the proposed research model, we performed a validity and reliability analysis. For the data sets of the constructs, Cronbach's alpha as a measure of internal consistency is 0.891 and it is satisfactory. The measures of internal consistency for the constructs are presented in the Table 2 below. Those results are considered to be a good measure of scale reliability.

Table 2. Cronbach's alpha for the constructs

Constructs	Cronbach's alpha
PE	0.713
EE	0.787
SI	0.904
FC	0.790
HM	0.790
PV	0.877
HA	0.826
BI	0.799

Regarding the last construct (Use behaviour) the measure of the scale reliability is 0.571 which is considered satisfactory (Chakrapani, 2004).

We would like to point out that for the purpose of this research, although demographic factors are considered important moderating factors influencing technology use (Venkatesh, 2012), we concluded that for our sample those factors are not significant. This is so because we examined only young people, so the comparison of age was not an issue. Gender is not important moderator for young population, so the gender factor was not involved in the analysis as well. Based on the discussion above, and the proposed research model as presented in Figure 1, the following research hypotheses were set:

H1: Performance expectancy will positively influence behavioural intention.

H2: Effort expectancy has a positive effect on behavioural intention.

H3: High social influence will lead to increased behavioural intention.

H4: Facilitating conditions have a positive effect on behavioural intention.

H5: High hedonic motivation will lead to increased behavioural intention.

H6: Higher value-price ratio has positive effect on behavioural intention.

H7: Habit has a positive effect on behavioural intention.

H8: Facilitating conditions have a positive effect on use behaviour.

H9: Habit has a positive effect on use behaviour.

H10: Behavioural intention will lead to increased use behaviour.

In the Table 3, we summarize the findings regarding the research hypotheses based on the model presented in Figure 1.

Table 3. Hypotheses results

Hypotheses	Variable	β	Significance
H1	PE à BI	0.546	0.000
H2	EEà BI	0.415	0.000
H3	SI à BI	0.465	0.000
H4	FCà BI	0.506	0.000
H5	HMà BI	0.484	0.000
H6	PVà BI	0.337	0.000
H7	HAà BI	0.535	0.000
H8	FCà UB	0.246	0.000
H9	HAà UB	0.161	0.004
H10	BIà UB	0.281	0.000

The results are fully supporting the model. Namely, all relationships are proved to be significant in our sample. The well elaborated results in the literature were confirmed for the sample of young people in the Republic of Macedonia. From our sample we can derive conclusions about the importance of the previously explained predictors on the use behaviour towards technology use i.e. mobile Internet use of young population. However our sample is not representative enough to make conclusions for the whole population of the Republic. In order to perform such an extensive research, as in the original UTAUT2 model, bigger and more comprehensive sample is needed. Still, this research can be considered as a motive to perform comprehensive research for the whole population of the Republic of Macedonia where moderators can be investigated and their influence explained.

CONCLUSION

The aim of this research is to analyse the determinants of mobile Internet adoption among young people in the Republic of Macedonia. The significance of the proposed predictors can help managers formulate their marketing strategies and profound their marketing communication efforts. From the analysis of the results and secondary data obtained the following conclusions can be noted.

- Mobile Internet is widely adopted, especially among young people. Availability of smart phones and the price of mobile Internet are not obstacles and that was proved from the results.

- From the survey, it can be concluded that performance expectancy (average score 4.17) is rated very high. Effort expectancy to use mobile Internet is considered as negligible and not significant. Also, facilitating conditions (necessary knowledge, resources, and compatibility of mobile Internet with other technologies) are perceived as easily available and not an important obstacle at all.

- On the other side, social influence in our sample measured by opinion and influence of people important to the respondent doesn't have strong impact on the user behaviour of the young people.

- Hedonic motivation to use mobile Internet is extremely important (average score 4.19). Using mobile Internet for young people is considered as fun, enjoyable and very entertaining.

- The effect of price value on behaviour intention in our sample is moderate. In the context of young people the effect of price value is complex. Most of our respondents were students and therefore unemployed and their answers showed that price is relatively significant factor. Our empirical findings support the hypothesis about the implications of price value on pricing strategy of the vendors of consumer mobile applications for marketing purposes.

- Not surprisingly, the use of mobile Internet is a habit for young people in our sample. They feel that they are addicted to mobile Internet and that they must use it.

- Behavioural intentions i.e. the intention to continue using mobile Internet in the future and in a daily life , are considered very important, because most of the respondents answered that they have firm intention to use mobile Internet in the future (average score 4.48).

- When discussing usage frequency i.e. use behaviour (UB) of the respondents, this construct was measured by the frequency of using SMS, MMS, ringtone download, java games, browse websites and mobile e-mail. As expected, the results are more inclined to the use of mobile Internet. Namely, the average values for the usage frequency for browsing websites and mobile e-mail are very high (4.68 and 4.04 respectively) in comparison to the rest of the variables in the construct (SMS, MMS, ringtone download, java games). This is mainly because, online there are more free applications and/or platforms available (like Facebook, Viber etc.) that provide young people a medium for sharing messages and/or media (pictures, videos etc.). As mentioned, young people in the Republic of Macedonia, are more frequent users of smartphones and mobile Internet technologies. Almost 95% of age group 15-24 are active users of Internet on daily basis (DZS, 2015).

Regarding the moderating effects of age, gender and experience, included in the original UTAUT2 model, in our sample these individual differences were not taken into consideration since the sample was consisted mostly of students, whose age and experience does not differ much. However, the typical demographic characteristics such as gender, age, education level, and experience should be analysed in further research since this constructs

are considered to have strong moderating effects on behavioural intention and technology use in the original model (Venkatesh, et al., 2012).

Overall, our study confirmed the important roles of defined determinants in influencing technology use i.e. use of mobile Internet. This could help marketers to better formulate their strategies towards use of m-marketing strategies and extend their marketing communication channels based on the increasing trend in the use of mobile Internet and smartphones among young people.

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