

Linking individual demographics to antecedents of mobile banking usage: Evidence from developing countries in South-East Europe

1 Introduction

The rapid expansion of the internet and smartphones enabled individuals to become part of the financial digitalization and financial inclusion worldwide. In this regard, mobile banking is playing an imperative role apart from its primary functions (Asongu and Odhiambo, 2019; Fall et al., 2020; Myovella et al., 2020; Senou et al., 2019). Earlier, to access banking services, e.g., to withdraw cash, a customer has to reach its location, and distance is a problem in typical traditional banking. The advent of information communication technologies (ICT, internet, applications, and smartphones) made it easy for individuals to use digital financial and non-financial transactions in their day to day life, including developing countries (Lwoga and Sangeda, 2019; Mukerjee et al., 2020). Mobile banking provides fast, smooth, and cost-effective services from the service provider. It is easy to reach the remotest customer, and bankers can use it as a competitive edge over competitors (Omotoso et al., 2012). It supports the government to include every individual under the financial inclusion ambit to include them in its financial system (Mago and Chitokwindo, 2014). Therefore, one-way mobile banking plays a significant role in reaching the remotest customer through mobile banking and indirectly helping the government towards financial inclusion. Bankers are also utilizing game dynamics and game machines to make the application attractive, fun-filled, and engaging. It eventually makes usage attractive and easy for consumers to accept mobile banking and can position it as a more comfortable option to execute their daily financial transactions. The mobile banking system is based on four key components: smartphones, wireless internet, banking applications, and human behavior. On one side, ICT innovations are continually improving internet speed and security, smart and efficient devices, and bankers are continuously enhancing their banking applications to provide a wide range of banking services through the mobile interface (Ahmad et al., 2020; Alavi and Ahuja, 2016; Muñoz-Leiva et al., 2017; Tabetando and Matsumoto, 2020). On the other side, the unrelated component is human behavior or precisely consumer behavior. To make it smooth, efficient, safe, and to serve consumers better, there is always a need to study what and how to influence consumers. Therefore, the most dynamic aspects of consumer behavior to improve usage and acceptance of mobile banking are demographic factors as it changes with time and places. It is the area where this study will further investigate.

According to GSMA (2019), almost half of the population has access to mobile internet. Growth in mobile internet access is burgeoning, specifically in low- and middle-income countries because it is the cheapest way to access the internet. The cost of the internet is getting affordable, and the internet is reaching rural areas. Therefore, mobile phone penetration and cheap internet are what consumers need to access mobile banking. It reflects a strong reason to understand the potential of mobile banking. The report also indicates that there is a persistent gender gap regarding mobile internet usage. As per the report, the two major demographic factors influencing mobile internet usage are gender and income level. Another report from ITU (2019) also reveals interesting facts about digital development related to human being and reflects demographic differences. The report indicated that Europeans have the highest Internet usage and mobile phone ownership

rates. Approximately 97 percent of the world's population lives within reach of the mobile cellular signal. People in Europe have easy access to basic requirements to use mobile banking, such as a mobile phone and internet. Thus, if they have easy access to basic needs (ICT), then what else can affect, consequently it can be human behavior. Therefore, there is a logic to study mobile banking usage and adoption behavior in the context of different countries and regions.

The most amazing fact is that the gender difference was not expected for Europe and American regions but all the world regions. But in fact, even Europe has more men than women using the internet. Despite having the highest internet usage and mobile ownership rates, still, gender differences can be traced. It raises an undeniable question, why the difference exists and how vast the difference is. Hence, gender is one factor the present study wants to link and understand why mobile banking usage behavior and adoption differ in men and women. Based on this, the gender difference is still an issue. Moreover, the present study will cover the other demographic factors, such as employment, rural, urban people, etc. The present study identified the critical demographic factors to understand human behavior through the most accepted information technology model (unified theory of acceptance and use of technology, UTAUT). Given by Venkatesh et al. (2012), many researchers applied mobile banking acceptance and usage studies (Baabdullah et al., 2019; Baptista and Oliveira, 2015).

The UTAUT model was first recommended by Venkatesh et al. (2003) to determine the behavioral intention and use behavior about the information system. That is why the current research's theoretical support is based on two standpoints: UTAUT (Venkatesh et al., 2012) and the chosen demographic factors. The UTAUT model (Venkatesh et al., 2003) was established based on eight prominent and preceding theories: the theory of reasoned action (Fishbein and Ajzen, 1975), the technology acceptance model (Davis, 1989), the motivational model (Davis et al., 1992), the theory of planned behavior (Ajzen, 1991), the personal computing utilization model (Thompson et al., 1991), the innovation diffusion theory (Rogers, 1995), the social cognitive theory (Compeau and Higgins, 1995) and the integrated model of technology acceptance and planned behavior (Taylor and Todd, 1995) (see Figure 1). On the other hand, many studies have covered various moderators to identify their impact on the antecedent of mobile banking usage behavior. The models of UTAUT, and its extended version, itself applied a few demographic factors such as gender, age, experience, and voluntariness of use. Subsequently, other authors also applied other demographic factors such as occupation, income, qualification, marital status (Chawla and Joshi, 2018), gender, education, and user experience of ICT (Park et al., 2007). They found these factors do affect mobile banking acceptance to a certain extent. Therefore, based on the discussed literature, the present study has identified four demographic factors such as gender, employment, living settlement (location such as rural or urban), and financial experience. Living settlement and financial experience are not covered yet in any previous study to the extent of the author's best knowledge. The same is the present paper's novelty to showcase how these two new demographic factors can influence the chosen antecedents regarding mobile banking usage.

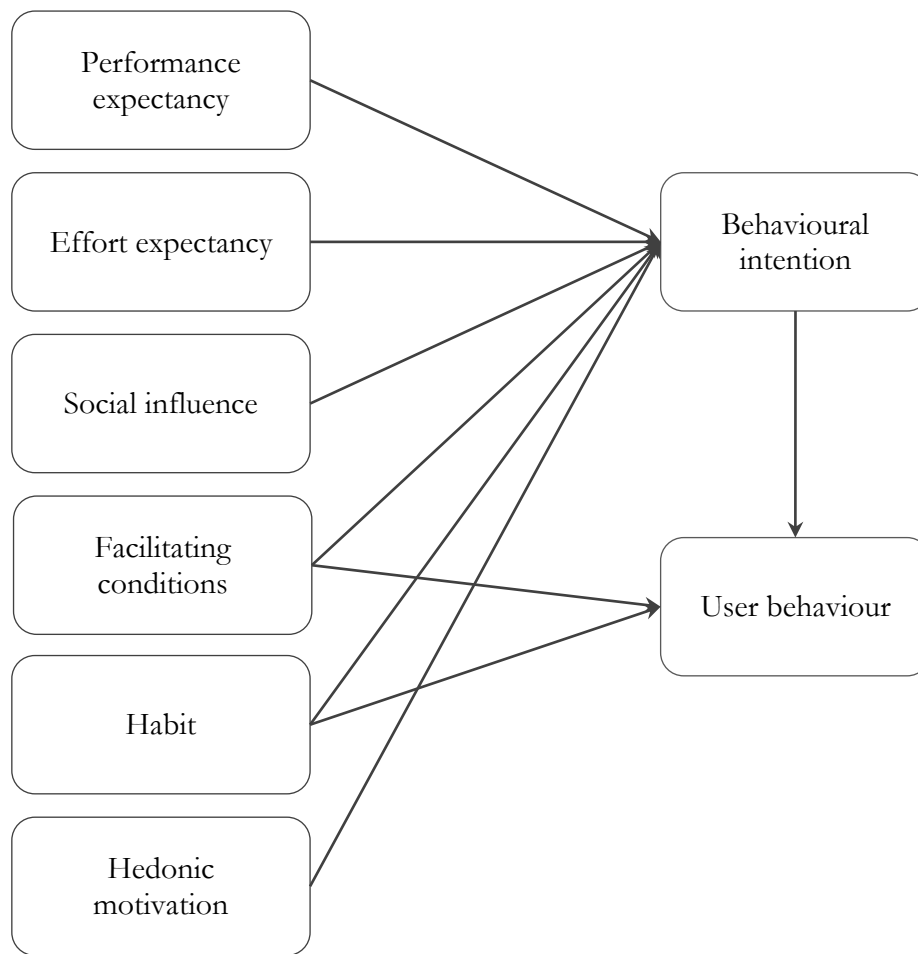


Figure 1. UTAUT2 model. *Source:* Venkatesh et al. (Venkatesh et al., 2012)

The geographical focus of the present study is Southeast European nations. In the recent past, it has been noticed that the Southeast European countries are now taking adequate measures to grow and match with other western European nations (OECD, 2019; Tosheva and Dimeski, 2019). Another research in the Kosovo area suggests a need for training programs for women, as they have shown a slower trend in adopting the technology. The bank can have online and mobile banking trial versions and must enhance the user-friendliness of the apps. The study indicates more studies and more comprehensive research with broader frameworks and more constructs need to be analyzed to clarify the use of online and mobile banking (Prenaj, 2017). Another study on mobile phone penetration and inequality reduction in western Balkan supports that Mobile banking can be used extensively in developing countries to tackle prosperity, inequality, and poverty (Vokshi et al., 2019). Mobile banking is associated positively with inclusive growth. Poverty and inequality in lower-middle-income countries, upper-middle-income countries, and Central and Eastern European countries were negatively associated with the increased usage of cell phones to pay, send, and receive bills (Asongu and Nwachukwu, 2018). These mentioned arguments support the country analysis.

The present study was conducted over a wide geographical area covered Croatia, Serbia, North Macedonia, Albania, and Kosovo. The chosen countries reflect similarities in their cultural aspects, for example, most southeast European countries have similar lingos, and they can comprehend each other as it has many similarities (Vesnic-Alujevic, 2012). People of this region have witnessed

many changes from the communist era to the republic regime. They desire to be part of the European Union except for Croatia, which already has its membership. Western Balkan (located in South-Eastern Europe) states that they are witnessing economic growth, reducing unemployment, and increasing domestic labor demand. They are becoming a trustworthy partner of the European Union through their sustainable economic reforms and constant achievements of favorable results in many areas such as boosting digitalization, innovation, connectivity, and economic growth and employment (Emini et al., 2018). Looking into the existing literature, very few studies have covered such a wide chosen area, and also, the chosen phenomenon is not yet studied in this region. Most of the studies belong to strong economies in the European Union, Gulf countries, etc. Therefore, the chosen territory is still unexplored. The present study's focus is to understand how the selected demographic factors influence mobile banking usage and acceptance (Chawla and Joshi, 2019). The gradual expansion of the internet, and mobile-based internet usage, adoption of western European culture, and lifestyle to be part of the European Union gives enough motivation to study how the peoples' demographic factors affect usage of mobile banking in the chosen region (Sternad Zabukovšek et al., 2019; Vrček and Klačmer, 2014). Surprisingly, according to Kim et al. (2018), consumers' demographic characteristics in developing countries tend to have a negative effect on the adoption of mobile financial services. **A very strong argument forwarded by a study analyzed location, age, gender, and income on information communication and technology acceptance. Several studies encourage further in-depth analysis of location in future research and other socio-demographic variables (Petersen et al., 2020). Several other studies recommend further socio-demographic research in the related field (Niehaves and Plattfaut, 2014; Siregar et al., 2017).** With this in mind, it is worth studying the relationships between UTAUT's constructs and individuals' characteristics in developing countries such as those in southeast Europe. The study's outcome can help the policymakers and corporates towards strategy formulation to improve the acceptance and usage of mobile banking among the people of chosen states.

The present study has identified the key variables based on the UTAUT model (Venkatesh et al., 2012), such as performance expectancy, effort expectancy, social influence, facilitating conditions, habit, hedonic motivation, behavioral intention, user behavior, and demographic factors such as gender, employment, living settlement, and financial experience, to investigate the significant demographic factors influencing mobile banking acceptance and usage under the chosen theory in the context of the Western Balkan consumers' mobile banking adaptability and acceptance. To the best of the authors' knowledge, no other study has covered gender, employment, living settlement, and financial experience extensively with UTAUT2 together, representing the present study's core originality. From the managerial and practical implication point of view, the effect of demographic factors on behavioral intention and user behavior in the context of developing countries provides useful insights. The study offers how the chosen demographic factors in each selected state related to the extended UTAUT model (Venkatesh et al., 2012) can help the chosen region to improve its mobile banking acceptance and usage. Adopting this framework would add substantially to the literature, and the outcome will contribute to practical implications. The necessity to understand and investigate the demographic factors that affect behavioral intention and user behavior in referred transition countries motivated to conduct this research. Hence, this study seeks to examine the effect of demographic factors concerning the UTAUT2 model on the intention to

use mobile banking in the context of post-communist transition countries of the Western Balkan states.

2 Literature review

Various studies have been conducted to study the relationship of antecedents of UTAUT2 with demographic factors such as age, qualification, marital status, occupation, etc. but majorly focused as a moderator. The present study sheds light on the relationships between each component of UTAUT2 and the chosen demographic factors such as gender, employment, living settlement, and financial experience. The study's objective is to conclude the severity of selected demographic factors on each construct of UTAUT2 and recommend the policymakers and corporations to focus on those factors specifically to improve mobile banking acceptance and usage among the chosen regional states.

UTAUT2

The UTAUT model was given by (Venkatesh et al., 2003) was developed as an interactive holistic model to understand better the consumers' behavior intention towards new technologies or systems acceptance and adoption. Further, Venkatesh et al. (Venkatesh et al., 2012) UTAUT2, which is currently the latest model, has been increasingly adopted by researchers around the globe to explore the consumers' behavior intention for the adoption of various issues such as self-operative technology, adoption of smartphone devices, acceptance of learning management apps, etc. (Huang and Kao, 2015). UTAUT2 would efficiently illustrate and evaluate people's technology adoption behaviors for new products in information technology (IT). That is the reason the present study implemented UTAUT2 as an analytical model. Looking at the context of UTAUT2, the first antecedent is performance expectancy, which implies the degree to which the use of new technology or the latest technological product will provide customers the benefits of conducting or using particular activities (Venkatesh et al., 2012). The present study considers the performance expectancy a significant antecedent to measure consumer behavioral intention using mobile banking, similar to the other studies (Baptista and Oliveira, 2017; Çera et al., 2020). The second one is effort expectancy, which relates to users' level of convenience connected through a new technology service or product of a technology (Venkatesh et al., 2012). To determine the consumers' behavioral intention, the performance and effort expectancies are among the most significant predictors of technology use and adoption (Baabdullah et al., 2019; Baptista and Oliveira, 2017; Çera et al., 2020). Another antecedent of UTAUT2 is the social influence; it means others acknowledge the extent of the significance of using new technology. The other three antecedents considered in the present framework are facilitating conditions, habits, and hedonic motivation. Facilitating conditions refers to the individuals' belief about the availability of organizational and technology infrastructure support in technology usage (Venkatesh et al., 2003, 2012). Habit, which is about individuals' automatic behavior of using technology, concerns the extent to which consumers use technologies. The last is the hedonic motivation. It is about the fun or enjoyment consumers derived from using technology. It reflects that hedonic motivation plays a vital role in determining acceptance and using a particular technology (Magni et al., 2010; Venkatesh et al., 2012). Considering the objective of the present study, the antecedents of UTAUT2 are useful to determine the consumers' behavioral intention of mobile banking usage like several studies did in the past around the globe (Baabdullah et al., 2019; Baptista and Oliveira,

2017; Çera et al., 2020; Huang and Kao, 2015). Hence the UTAUT2 model has been adopted considering the relevance of the present study.

Linking gender to UTAUT2 constructs

The number of studies on gender states that males and females, to some extent, have different social roles, and personal characteristics. This difference can be traced through their perceptions, information assessment, and information technologies use such as computers, the internet, mobile phones, etc. (Goh and Sun, 2014). Various studies reveal gender differences in the different related fields also. According to Zhang et al. (2014), there are significant gender differences in technology acceptance. A study by Todman (2000), stated that gender differences constantly found regarding technology acceptance as a higher level of computer anxiety and less positive attitude towards technology adoption were found in women than men. Another study supports this claim that women have greater technology anxiety than men (Lee et al., 2010). Hence, it means female might feel more stressed to use technology. Supporting the same argument, another study indicates that there is gender influence on the purchase intentions as the women are more likely to be anxious about products with which they are personally attached (Wekeza and Sibanda, 2019). Several other studies also found gender differences in technology use and adoption, compared to boys girls using less computers and the internet (Vekiri and Chronaki, 2008; Zhang et al., 2014). A study in Nigerian found gender significantly influence banking customers' attitudes to internet banking adoption (Onyia and Tagg, 2011).

On the other hand, anxiety is a behavioral state of humans (Steimer, 2002). Studies have exposed that females are usually less confident in technology usage than men (Goh and Sun, 2014). Having higher anxiety and less confidence, which forms behavior, can affect purchase intentions. It has been found that fear, emotions etc., influence purchase intentions (Hutjens, 2014; Pappas et al., 2014). The theory of planned behavior says attitude is related to behavioral intentions (Ajzen, 1991), and the theory of reasoned action by Fishbein in 1967 states that intentions have a strong relation with behavior and behavioral performance. It was found that the performance or non-performance of a given behavior is determined by the strength of an individual's intention to do it (Fishbein, 2008). In short, emotions impact purchase intentions and several studies found gender difference using theory of planned behavior to determine individuals purchase intentions (Pappas et al., 2014; Wekeza and Sibanda, 2019). Based on the consumer behavior theories mentioned above, several variables affect the consumer purchase intentions, gender, employment status (Wekeza and Sibanda, 2019). Therefore, it can be summarized in simple words that anxiety, confidence, attitude, etc., influence females' behavioral intention. The previous studies' claims that there are significant gender differences towards acceptance of technology or internet banking seem logical. Therefore, it is relevant to find the differences regarding mobile banking acceptance too. Based on this, the literature review further identifies the relationship between gender and UTAUT2 components. The study also related each component with gender differences found in related fields.

According to Venkatesh et al. (2003), the relationship between behavioral intention and performance expectancy, effort expectancy, and social influence individually are moderately influenced by gender difference, and the designed model confirmed gender as an integral part of UTAUT. Social norms affect acceptance more powerfully among female respondents than male (Riquelme and Rios, 2010). Hence, proving the relevance of gender to determine technology usage

and acceptance. Similarly, other studies that adapted and applied UTAUT and/or UTAUT2 also confirmed that gender has a significant moderate influence on user adoption (Park et al., 2007) as well as performance expectancy and effort expectancy on behavior intention have a moderate impact of gender (Warsame and Ileri, 2018). Behavioral intention is more positively influenced by personal innovativeness for males than females (Liu et al., 2015). A study reflects users' gender has a significant moderating impact on social media sites' evaluation and usage behavior (Lim et al., 2017). Another study concluded that hedonic shopping among female consumers is predominantly higher in comparison to men. Thus, hedonic shopping behavior differs according to gender (Kirgiz, 2014).

Some research denied the moderate influence of gender between the elements of mobile technology adoption and behavioral intention. It also tested the moderate effect of gender between the relationship of facilitating conditions on behavioral intention (Jambulingam, 2013). Another study claims that there are no gender differences concerning mobile phone usage in the educational process (Ashour et al., 2012). Therefore, based on this mixed result, where various authors found gender has a significant moderate impact, and few reject it. In this scenario, the present study tried to investigate the direct effect on the factors of the UTAUT2 model. Rowntree's (2019) report reveals that the gender gap regarding mobile ownership and mobile internet usage is lowest in Europe compared to eighteen low and middle-income countries worldwide. Hence, it also supports investigating the gender difference specifically towards mobile banking in selected eastern European countries. Pieces of evidence identify a lack of information on how gender influences the acceptance, adoption, and usage of mobile banking, especially in the Balkans states context. **Even studies found that specifically for mobile banking use, there is a gender difference in mobile banking usage. The female intention to use mobile banking is significantly affected by perceived usefulness, which is part of performance expectancy (Hyde-clarke and Mnisi, 2015; Jamal Haider et al., 2016). Based on the above,** the present paper is intended to scout the gender differences related to the UTAUT2 model.

Linking employment to UTAUT2 constructs

Very few studies have considered employment a vital demographic variable, and it failed to attract the researcher's attention. Neither quantitative nor qualitative studies are much available regarding mobile banking that analyzes mobile banking acceptance from occupational perspectives such as full-time employees or full-time students (Bhatiasevi, 2016). It is probably the first-time employment will be considered a potential factor to measure the effect antecedents of UTAUT2. To the extent of the authors' knowledge, only two studies were traced: Onyia and Tagg (2011) about internet banking adoption where employment status reflected the significant impact on Nigerian customers' attitude and intention towards internet banking acceptance. Another study by Chawla and Joshi (2018) considered occupation as a moderator but included both professionals and students **and found the occupation moderates between the antecedents and behavior intention. Another study conducted a comparison between different occupations and found that occupation affects internet banking usage. Some occupations have higher internet usage, and some have less (Jayasiri et al., 2016). It becomes imperative to re-examine occupation as an independent variable to determine how employment affects consumers' mobile banking usage behavioral intention.** The present study considers only full-time employment status and will be a value addition in the literature as it is not yet covered, and the same is the novelty of the present paper.

Linking living settlement to UTAUT2 constructs

Another chosen demographic factor is the living settlement, chosen based on the living settlement to determine the effect of living location in two different urban and rural segments on the antecedents of mobile banking acceptance and usage. A study in Iran stated that the digital gap between urban and rural societies is alarming. As ICT plays a noteworthy role in rural growth processes, it must reach rural areas (Moghaddam and Khatoon-Abadi, 2013). No other prior study so far has covered the living location urban and rural in their research to measure its influence on the factors of UTAUT2 in terms of mobile banking usage and acceptance. Few countries witness the fast conversion of rural areas into urban or rapid migration of rural people towards the urban area. It becomes easy to adopt the urban style of living where the penetration of mobile ownership and internet usage is better (GSMA, 2019). Many studies related to ICT usage and acceptance, mobile ownership, and internet usage in rural and urban areas, but no study has ever covered living location as a factor affecting mobile banking usage and acceptance. Another study in South Africa by Ramavhona and Mokwena (2016) stated that in rural areas, people are reluctant to adopt internet banking because of low awareness about its benefits, wrong perception about its conveniences, and fear of fraud. Also, poor infrastructure support regarding internet access and computer availability is the reason for not accepting internet banking. In simple words, the acceptance and usage of internet banking in rural areas of South Africa is low because of poor infrastructure and people's wrong perceived intentions. **The bank-led mobile banking model is seen as a useful and easy-to-use tool by people in unbanked and underbanked rural areas (Mtambalika et al., 2016). Therefore it is needed to know more about how location can impact the mobile banking usage intention. Based** on these, it sounds logical to apply the rural and urban location factors to investigate the impact on the antecedents of mobile banking usage in the context of eastern European nations. It could be an exciting area, especially for policymakers and the business community.

Linking financial experience to UTAUT2 constructs

According to Chawla and Joshi (2018), the experience was explained as the accumulated practical contact with and observation of facts or events that the person gains while working in a particular job, profession, place, or project. Another study stated that no precise definition of the experience is available; therefore, it will be useful to consider domain-specific conceptualization of experience and user experience related to technology as the study was related to technology acceptance (Sun and Zhang, 2006). The experience is about the extent of familiarity and knowledge (Sun and Zhang, 2006). The experience was used as a moderator in earlier studies of technology acceptance (Venkatesh et al., 2003, 2012) and gave significant results and stated its importance as a moderator. Before the advent of UTAUT, Agarwal and Prasad (1999) stated that individual differences such as education level or the extent of prior experience have a substantial influence on TAM's beliefs. No preliminary research about mobile banking usage and acceptance has ever considered financial experience effects. Mobile banking includes banking services provided through the internet, based on an application, and used through electronic devices. People who have financial work experience may find it easy to do a financial transaction online. Work experience may improve knowledge. OECD (2018) also stated that consumers with a lower level of financial knowledge, should not be provided with a complicated or high worth transaction through online platforms. It is a risk as well as it can disengage the consumer from the usage.

There is an effect of experience, such as work experience, for example, individuals working in IT field or social media might have a different approach. Those users with experience in mobile applications, whether banking or any other, may have a different perception about the risks associated, improve their perception of utility and promote their usage overtime on an ongoing basis. Factors such as consumers' personality, comparable experiences, and individuals' shopping orientation might reflect significant aspects of the technology acceptance model and online retailing (O'Cass and Fenech, 2003). The situational variables, attitude, and demographics of users helped to accept innovations (Alavi and Joachimsthaler, 1992). The personal experience continues to be a central factor in the use of Online retail (O'Cass and Fenech, 2003). Therefore, mobile banking usage for the financial transaction seems reasonable to investigate how experience in the financial domain can affect mobile banking use and acceptance. The present study is about how the financial experience effects, as scholars have not yet researched this area. The current research believed that the insight into how financial experience affects mobile banking usage antecedents would open a new research domain. Today, the financial market cannot work alone without ICT support. It makes it relevant and useful for policymakers and business houses.

3 Methods and procedures

Data and variables

To investigate possible linkages between the individuals' demographics and UTAUT2 constructs, a questionnaire in the English language was designed and reviewed for content validity by academics of the field. It was then translated into the four local languages: Albania, Serbian, Croatian, and Macedonian. The questionnaire was selected as a data collection tool, as it was suggested by prior studies (Baptista and Oliveira, 2017). The questionnaire consists of two sections: the demographic profile of the respondents and the UTAUT2 constructs. Besides user behavior, all other UTAUT2 constructs were adopted from Venkatesh et al. (2012). The scale of Martins et al. (2014) was used to measure user behavior, pointing at the frequency of the use of mobile banking: 1 = 'once a year', 2 = 'once in six months', 3 = 'once in three months', 4 = 'once a month', 5 = 'once a week', 6 = 'once in 4-5 days', 7 = 'once in 2-3 days', 8 = 'almost every day', 9 = 'every day', 10 = 'several times a day'.

To achieve the respondents, **the university alumni databases were used**. Thus, the target individuals consist of those older than 18 years old who had a mobile phone/tablet connected to the internet and have at least one bank accounts. To ensure consistency and revise the translation's accuracy, a pilot test with few respondents was done in each country. The phase of the data collection took place in March-May 2019. After cleaning the dataset, the final sample consists of 959 valid records. In Table 1 is shown the sample profile, breakdown of each country.

Table 1. Sample characteristics (number of respondents)

		Country				Total
		Croatia	Serbia	North Macedonia	Albania	
Gender	Male	75	55	68	128	326
	Female	132	124	98	279	633
Education	High school or less	54	29	61	65	209

level	University	41	99	75	204	419
	Post-university or more	112	51	28	138	329
Occupation	Public sector	61	22	65	44	192
	Private sector	88	93	56	182	419
	Both	15	5	17	13	50
	Non-active labour	43	59	28	168	298
Total		207	179	166	407	959

Data analysis

The partial least square method of structural equation modelling (PLS-SEM) was performed to create the constructs. There were two reasons why PLS-SEM was selected as a method: firstly, the selected constructs were not normally distributed and, secondly, the present study requires latent variable scores to follow-up analyses (Hair et al., 2019). PLS-SEM was run in SmartPLS 3.0 (Ringle et al., 2015). Table 2 informs on the creation of the constructs. Some items were deleted due to problems with multicollinearity. According to Cronbach's alpha test, all constructs manifested good internal consistency reliability. The generated (latent) variables were imported to SPSS 23 for further analyses.

Table 2. Constructs and their items

Construct and source		Loading	CA
Behavioral intention (Martins et al., 2014; Venkatesh et al., 2012)			0.860
bi1	I intend to continue using mobile banking in the future	0.895	
bi2	I always try to use mobile banking in my daily life	0.899	
bi3	I intend to consult the balance of my account on the app of mobile banking	deleted	
bi4	I intend to perform a transfer on the app of mobile banking	0.857	
Effort expectancy (Venkatesh et al., 2003, 2012)			0.895
ee1	Learning how to use mobile banking services was easy for me	0.949	
ee2	My interaction with mobile banking services is clear and understandable	0.953	
Facilitation conduction (Venkatesh et al., 2003, 2012)			0.890
fc1	Mobile banking saves me time by avoiding going to the bank branches, waiting in the queue	0.908	
fc2	I have the necessary resources to use mobile banking services	0.917	
fc3	I have the necessary knowledge to use mobile banking services	deleted	
fc4	Mobile banking is compatible with other technologies I use	0.890	
Habit (Venkatesh et al., 2012)			0.796
hb1	The use of mobile banking services has become a habit for me	0.910	
hb2	I am addicted to using mobile banking services	0.676	

hb3	I feel like I must use mobile banking services	deleted
hb4	Using mobile banking has become natural to me	0.910
	Hedonic motivation (Lin, 2011; Venkatesh et al., 2012)	0.832
hm1	My curiosity is often stimulated by mobile banking app	0.819
hm2	I enjoy using mobile banking	0.894
hm3	While using mobile banking, I felt a sense of adventure	0.768
hm4	I use mobile banking to keep up with the trends	0.717
	Performance expectancy (Venkatesh et al., 2003, 2012)	0.879
pe1	Mobile banking services are very useful in my daily life	0.923
pe2	Using mobile banking services increases my productivity	0.872
pe3	Using mobile banking services helps me accomplish things more quickly	0.896
	Social influence (Venkatesh et al., 2003, 2012)	0.784
si1	People who are important to me suggested using mobile banking services	0.869
si2	My co-worker suggested using mobile banking services	0.834
si3	Mobile banking services use is a status symbol in my environment	0.798
si4	I believe that companies should support the use of mobile banking	deleted

Note: CA, Cronbach's alpha.

To investigate the linkages of the above constructs with the individuals' demographics, a nonparametric test was used because the composed constructs were not normally distributed, as Kolmogorov-Smirnov and Shapiro-Wilk tests demonstrated (Meyers et al., 2013). As our demographic variables were dummy variables, the Mann-Whitney test was employed (Gravetter and Wallnau, 2017). The latter test analysis the difference only between the two groups. It converts the scores on the continuous variable to ranks across the two groups. It then evaluates whether the ranks for the two groups differ significantly (Pallant, 2016). Its effect size can be calculated as the z score division with the square root of the sample size. The non-parametric tests were performed in SPSS 23.

4 Results

After generating the latent variables related to the UTAUT2 model, they were investigated whether they had any linkage with demographic variables (gender, being employed, living settlement, and having financial experiences) or not. In Table 3 there are shown the results of the Mann-Whitney test for gender. The test revealed that gender reflected a significant difference in half of the variables. Hence, according to the results of the latter test, in comparison to males, females scored significantly higher in effort expectancy ($U = 93041.5$, $z = -2.579$, $p < 0.05$, $r = 0.083$), facilitation conditions ($U = 93620$, $z = -2.425$, $p < 0.05$, $r = 0.078$), hedonic motivation ($U = 93736$, $z = -2.325$, $p < 0.05$, $r = 0.075$), and social influence ($U = 93383$, $z = -2.413$, $p < 0.05$, $r = 0.078$). The other constructs (behavioral intention, habit, performance expectancy, user behavior) did not show any statistical gender difference. Considering these results, it can be concluded that gender is an important individual characteristic that links with half of the UTAUT2 constructs. Compared to

males, females scored higher in effort expectancy, facilitation conditions, hedonic motivation, and social influence.

Table 3. Results of the Mann-Whitney test for gender

	Mean rank (gender)		Mann-Whitney			
	Female ($n = 633$)	Male ($n = 326$)	U	ζ	p	r
Behavioural intention	486.68	467.03	98951.5	-1.049	0.294	0.034
Effort expectancy	496.02	448.90	93041.5	-2.579	0.010	0.083
Facilitation conditions	495.10	450.68	93620	-2.425	0.015	0.078
Habit	491.21	458.24	96085	-1.748	0.080	0.056
Hedonic motivation	494.92	451.03	93736	-2.325	0.020	0.075
Performance expectancy	489.52	461.51	97152	-1.502	0.133	0.048
Social influence	495.48	449.95	93383	-2.413	0.016	0.078
User behaviour	476.94	485.94	101242.5	-0.482	0.630	0.016

The employment status of the respondent was the second individual demographic taking into the analysis. Table 4 summarizes the results of the Mann-Whitney test for employment status (being employed, including self-employed, or not). The test showed that employment status does link with almost all the UTAUT2 constructs. The only construct that reflected no statistical difference in terms of employment status was hedonic motivation ($U = 97683.5$, $\zeta = -0.203$, $p > 0.05$, $r = 0.007$). The strongest effect size was recorded for user behaviour ($U = 69628.5$, $\zeta = -7.347$, $p < 0.001$, $r = 0.237$), habit ($U = 73672.5$, $\zeta = -6.259$, $p < 0.001$, $r = 0.202$) and behavioural intention ($U = 79114$, $\zeta = -4.921$, $p < 0.001$, $r = 0.159$). According to Cohen's (Cohen, 1988) benchmarks, the above effect sizes were small to medium effect. The other constructs manifested a small effect size in employment status differences (see the last column of Table 4). As has been noted, those who had a job (including self-employed) scored significantly higher in almost all the UTAUT2 constructs, indicating the role of employment status in the technology adaption such as mobile banking.

Table 4. Results of the Mann-Whitney test for employment status

	Mean rank (employed)		Mann-Whitney			
	No ($n = 298$)	Yes ($n = 661$)	U	ζ	p	r
Behavioural intention	414.98	509.31	79114	-4.921	0.000	0.159
Effort expectancy	454.05	491.70	90754.5	-2.014	0.044	0.065
Facilitation conditions	435.57	500.03	85248.5	-3.439	0.001	0.111
Habit	396.72	517.54	73672.5	-6.259	0.000	0.202
Hedonic motivation	477.30	481.22	97683.5	-0.203	0.839	0.007
Performance expectancy	441.29	497.45	86952.5	-2.942	0.003	0.095
Social influence	449.06	493.95	89267.5	-2.325	0.020	0.075
User behaviour	383.15	523.66	69628.5	-7.347	0.000	0.237

The third individual demographic considered in the current research is where individuals live, known as the living settlement. Table 5 summarises the results of the Mann-Whitney test for this demographic variable. It was found that the place where people live does matter in technology acceptance, including mobile banking. Indeed, the respective test showed that living settlement does associate with almost all constructs of the UTAUT2 model. The only two constructs that reflected no statistical difference in terms of living settlement were hedonic motivation ($U = 68702$, $\zeta = -0.421$, $p > 0.05$, $r = 0.014$) and social influence ($U = 68894.5$, $\zeta = -0.363$, $p > 0.05$, $r = 0.012$). The strongest effect size among the other constructs were found for effort expectancy ($U = 59333.5$, $\zeta = -3.326$, $p < 0.001$, $r = 0.107$), and facilitation conditions ($U = 59800.5$, $\zeta = -3.173$, $p < 0.05$, $r = 0.102$). According to the benchmarks proposed by Cohen's (Cohen, 1988), the above effect sizes were small to medium effect. The rest of the UTAUT2 constructs manifested a small effect size in terms of the living settlement differences. Moreover, the analysis showed that those who lived in urban areas scored significantly higher in almost all the constructs of the UTAUT2 model, signalling that technology adaption and acceptance, including mobile banking, have higher chances to occur in urban areas than in rural ones.

Table 5. Results of the Mann-Whitney test for living settlement

	Mean rank (living settlement)		Mann-Whitney			
	Rural area ($n = 877$)	Urban area ($n = 229$)	U	ζ	p	r
Behavioural intention	425.12	492.68	60231	-2.974	0.003	0.096
Effort expectancy	420.13	493.83	59333.5	-3.326	0.001	0.107
Facilitation conditions	422.73	493.23	59800.5	-3.173	0.002	0.102
Habit	422.75	493.23	59805	-3.081	0.002	0.099
Hedonic motivation	487.82	478.19	68702	-0.421	0.674	0.014
Performance expectancy	439.82	489.28	62877.5	-2.186	0.029	0.071
Social influence	486.75	478.44	68894.5	-0.363	0.716	0.012
User behaviour	436.15	490.13	62216.5	-2.382	0.017	0.077

The last demographic variable considered in the present study is financial experience, meaning whether individuals had any financial experience working for financial institutions or not. Table 6 reported the results of the Mann-Whitney test for the latter demographic variable and the UTAUT2 constructs. It was found that the place where people do matter in technology acceptance, including the intention and use of mobile banking. The performed test showed that people that had an experience working/internship in the financial sector (bank, exchange office, microfinance institution, pension funds, insurance company, financial office, consultant, cashier, stock exchange etc.) reflected higher scores in the habit ($U = 94573$, $\zeta = -3.617$, $p < 0.001$, $r = 0.117$), hedonic motivation ($U = 93805.5$, $\zeta = -3.797$, $p < 0.001$, $r = 0.123$), social influence ($U = 89742.5$, $\zeta = -4.769$, $p < 0.001$, $r = 0.154$), and user behaviour ($U = 98568.5$, $\zeta = -2.687$, $p < 0.01$, $r = 0.087$). The behavioral intention was at the edge of acceptance as a construct that showed a significant difference between those who had financial experience and those who had not ($U =$

101859, $z = -1.889$, $p = 0.059$, $r = 0.061$). For the other constructs, it was found no significant difference between the two groups of individuals classified based on their financial experience. Furthermore, the test revealed that those individuals who had financial experience scored significantly higher in the latter constructs, meaning that technology adaption and acceptance, including intention and use of mobile banking, have higher chances of being used by those who had the financial experience.

Table 6. Results of the Mann-Whitney test for financial experience

	Mean rank (financial experience)		Mann-Whitney			
	No ($n = 582$)	Yes ($n = 377$)	U	z	p	r
Behavioural intention	466.52	500.82	101859	-1.889	0.059	0.061
Effort expectancy	476.11	486.01	107443	-0.559	0.576	0.018
Facilitation conditions	469.64	496.00	103676.5	-1.484	0.138	0.048
Habit	454.00	520.14	94573	-3.617	0.000	0.117
Hedonic motivation	452.68	522.18	93805.5	-3.797	0.000	0.123
Performance expectancy	475.69	486.66	107196.5	-0.607	0.544	0.020
Social influence	445.70	532.96	89742.5	-4.769	0.000	0.154
User behaviour	460.86	509.55	98568.5	-2.687	0.007	0.087

5 Discussion

The present research has shown insights regarding the association between the UTAUT2 constructs and the individuals' demographics (gender, employment status, living settlement, and prior financial experience). The evidence showed that these constructs do significantly associate with individuals' characteristics. However, these findings should be discussed a bit more carefully. Hence, in the following paragraphs, the above linkages are discussed in the context of the Western Balkan.

The first tested relationship was the one that links the UTAUT2 constructs and gender. It was found that gender does associate with effort expectancy, facilitation conditions, hedonic motivation, and social influence. Moreover, evidence showed that, compared to males, females scored higher on the latter constructs, consistent with prior studies conducted in a similar field (Goh and Sun, 2014; Lim et al., 2017; Sun and Zhang, 2006). However, the data showed that behavioral intention, habit, performance expectancy, and user behavior do not associate with gender (see Table 3), which goes in line with what previous studies have demonstrated (Baptista and Oliveira, 2017; Chawla and Joshi, 2018; Venkatesh et al., 2012). As a result, gender does not associate with all UTAUT2 model's constructs. Therefore, considering the latter findings, technology acceptance and usage do not differ in terms of gender for Western Balkan people.

The second tested linkage was between the UTAUT2 model's constructs and the employment status of the individuals. Evidence has supported the above associations stressing the importance of being employed in accepting and using technology, including mobile banking. As discussed in the literature review section, this study is among the first to consider employment status as a

potential individual demographic linked to the UTAUT2 model's constructs. In conducting the present research, existing literature and prior studies support the importance of employment status on an individual's technology adaption (Elmi and Ngwenyama, 2020; Leppäniemi and Karjaluoto, 2008; Onyia and Tagg, 2011). **However, the current research results contradict Moghaddam and Khatoon-Abadi's (2013) finding regarding the association between living settlement and the UTAUT2 model's construct.**

The third tested association was between living settlement (the place where the individuals live: urban or rural area) and the UTAUT2's construct. As in the employment status case, this paper is among the first, which links living settlement to the UTAUT2 model's constructs. Excluding hedonic motivation and social influence, all the other constructs reflected a significant relationship with the area where people live. Contrary to Moghaddam and Khatoon-Abadi (2013), the present study demonstrated substantial evidence supporting the above association. Thus, as expected, those who live in urban areas scored higher in the UTAUT2 constructs, which is in line with Ramavhona and Mokwena's (2016) research. Hence, it can be concluded that people living in rural areas are reluctant to adopt internet banking due to low awareness about its benefits, wrong perception about its conveniences, and fear of fraud.

The final investigated relationship in the current paper is the one that links an individual's financial experience to the UTAUT2 model's constructs. Findings show that people who had prior experience working/internship in the financial sector, such as in a bank, exchange office, microfinance institution, pension funds, the insurance company, financial office, consultant, cashier, stock exchange, etc., scored higher in the habit, hedonic motivation, and of course in the acceptance and usage of mobile banking. This lead to the fact that having experience working or doing the internship in a financial institution increases the chances to use mobile banking, which goes in line with Agarwal and Prasad's (1999) claim, emphasizing that individual differences, including the extent of prior experience, have a substantial influence on TAM's beliefs. It is among the first study linking the individuals' previous financial experience to the UTAUT2 model's construct to the best of the authors' knowledge.

6 Research implications and limitations

Considering the benefits of technology usage, including mobile banking, for the society and financial industry, academicians, policymakers, and managers have a constant interest in understanding the linkages between the individual demographics and technology adoption aspects. In this way, every effort to explain technology acceptance is motivated among scholars (Chaouali et al., 2017; Dahlberg et al., 2015; Ege Oruç and Tatar, 2017; Lwoga and Sangeda, 2019; Shaw and Kesharwani, 2019). In light of this need, the current paper investigates how the individual demographics link to the UTAUT2 model's constructs.

This study made an effort to explore whether the individual demographics are linked to the UTAUT2 model's constructs or not in the context of four developing countries in the Western Balkan (Albania, Croatia, North Macedonia, and Serbia). Although there are studies that investigated the associations of individual demographics and technology acceptance (Chawla and Joshi, 2018; Goularte and Zilber, 2018; Hoque et al., 2019), yet there are relationships not covered. The present research contributes in this regard by offering new insights by introducing new individual demographic variables such as employment status, living settlement, and financial

experience. To the best of the authors' knowledge, this paper is among the first which investigates the linkages between the latter variables and the UTAUT2 model's constructs. Consequently, the study contributes to a better understanding of the technology acceptance puzzle. It suggests extending the number of moderating factors, which leads to a more comprehensive conceptual framework.

From the managerial point of view, bank managers are in favour of offering services remotely, as it reduces operational costs. For the financial sector, technological advancements create competitive advantages by allowing firms to focus on improving the services. Banks in transition countries like in the Western Balkan are advised to follow similar tendencies in advanced economies regarding mobile banking services, as it benefits both banks and clients. An enhanced bank strategy may need to be adjusted according to the individual demographics, as the current research emphasized. Following the suggestion of Hanafizadeh, Khosravi, and Badie (2019), while framing policies, it is also needed to focus on local issues and concerns, as it might be supportive to governments to implement ICT plans.

Even though the objectives of the study were achieved, there are still some limitations. Although there are four countries included in the sample size, other developing countries from the Western Balkan were not part of this project, such as Bosnia and Hercegovina, Kosovo, and Montenegro. However, based on the economic development level, they are in the same stage as those in the present analysis. Therefore, it is believed that findings are not affected, and the generalization of the results to other contexts is not limited. Nevertheless, the latter limitation can be overcome by further research. **Another limitation deals with the distribution of the final sample. Even though non-parametric statistical methods were applied in this work, it would still be preferred to analyze a sample that satisfies the standard assumptions. The sample distribution is skewed regarding education and gender. This limitation can be overcome by applying restrictions in the sample design stage.**

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