

EURASIAN JOURNAL OF BUSINESS AND MANAGEMENT

www.eurasianpublications.com

ANALYZING DEMOGRAPHIC CLUSTERS BEHAVIOR AND PERCEPTIONS TOWARDS eBANKING IN EMERGING FREE-MARKET ECONOMIES SOUTH AFRICA AND UKRAINE

Lutete C. Ayikwa 

Corresponding Author: Tshwane University of Technology, South Africa
Email: AyikwaLC@tut.ac.za

Johan W. De Jager 

Tshwane University of Technology, South Africa
Email: DejagerJW@tut.ac.za

Elizma M. Wannenburg 

Tshwane University of Technology, South Africa
Email: WannenburgEM@tut.ac.za

Received: July 8, 2022

Accepted: September 26, 2022

Abstract

The objective of this study is to portray banking customers' behavior and perceptions towards the use of new technology platforms, apps, services and products, to advise banks in their strategic approach to designing customized digital offers. The analyzed data were collected by means of a questionnaire administered online to 374 participants selected using convenience sampling. The empirical findings demonstrated that eBanking behavior and perceptions differ statistically significantly from one country to another as well as for demographic clusters such as gender, age, level of education, occupation, and digital banking level of knowledge. They confirmed the importance of scrutinizing demographic clusters' behavior and perceptions towards online banking, an area, which is largely under-researched in both South Africa and Ukraine. This study suggested banks elaborate tailored marketing strategies to enhance banking customers' intention to use eBanking and increase their positive perceptions for specific clusters. Providing the in-depth understanding of each demographic cluster's eBanking behavior and perceptions that this study provides will serve banks in their segmentation and targeting strategies to enhance the use of digital platforms and apps, services and products in developing economy countries. Furthermore, they will be adequately informed to design customized eBanking offers.

Keywords: eBanking, Digital Banking, Marketing Digital, South Africa, Ukraine

1. Introduction

In a world resolutely turned towards the digital that took its first steps more than two decades ago, the current health situation marked by the Covid-19 pandemic has accentuated a trend that constitutes both an opportunity and a challenge for the business sector. Information communication technology (ICT) has created the opportunity for increasing production and profit, improving the quality of services and products, the possibility of better targeting the market and customization of the offer, and finally, better satisfaction of customer needs (Oktay and Yetkin Ozbuk, 2020). As for the challenges, they can be summed up in the efforts to be made in terms of investment to meet the technological challenges linked to the obsolescence of production tools and the adoption of the use of its new technologies by customers, particularly in the banking sector (Magotra et al. 2018). Indeed, for banks, eBanking is essential in increasing the performance of banking transactions, reducing the flow of individuals in the various branches, the comfort and confidentiality of customers in the performance of their banking activities as well as improving the quality of the services offered (Abdurrahaman et al. 2021). The advent of eBanking is even more important as it allows individuals to perform bank transactions anytime and anywhere also facilitates eCommerce and eGovernment through online payment made easy (Garín-Muñoz et al. 2019), thereby establishing a relationship between ICT and economic growth in many regions across the world such as the Sub-Saharan region (Haftu, 2019).

In order to position themselves in relation to what is happening elsewhere, to adjust if necessary, developing economy countries' banks need indications on the behavior and perceptions on adoption of eBanking by their customers to design customized digital platforms and apps, services, and products. For this purpose, this study set out to investigate eBanking behavioral intention and attributes, collecting data from South Africa and Ukraine to portray banking customers' eBanking-related behavior and perceptions.

In this study, first the literature provided an overview of ICT adoption specifically in a banking context resolutely turned towards digitalization. It concisely highlighted the evolution of models designed to understand banking customers' behavior in adopting the use of eBanking platforms, apps, services, and products, from traditional behavioral models such as the social cognitive theory (SCT) and the theory of planned behavior (TPB) to the unified theory of adoption and use of technology (UTAUT) via the technology acceptance model.

The objective pursued is to offer a figure of the behavior of bank customers towards eBanking adoption in emerging economies countries as a guideline for banks in designing digital customized offers. The data analyzed using t-Test and ANOVA to reach conclusions have been obtained by means of a questionnaire administered through an online survey to 374 participants selected using convenience sampling. Numerous studies investigating digital banking adoption have been conducted but the present one is unique in highlighting existing differences regarding eBanking adoption among several groups in more than one country. Thus, banks that operate across countries in the world can have an idea on how strategies can be adapted to specific markets rather than designing a unique strategy to be applied everywhere.

In addition to being emerging free-market economies (Intergate Immigration Service, 2022; International Trade Administration, 2022), the choice of both countries was justified by the fact that they have a similar percentage of the population using the internet (75% vs 70%) (The World Bank Group, 2022). Although the ongoing Russia invasion is set to shrink Ukraine economy by half in 2022 (Treisman, 2022), this study was conducted before the advent of this sad event experienced by the Ukrainian people and their homeland.

2. Literature review

The internet revolution has brought with it a panoply of technological developments and innovations that are emerging at lightning speed, with no signs of stopping, and that impact almost all life activities, such as economic, social, sports, health and education (Anggraeni et al. 2021). Banks could not stay on the side-lines and legitimately felt the need to follow in the same

footsteps of seeking multiple ICT offers by embarking on the path of digitizing their transactional activities (Malik *et al.* 2022). Thus, the time when bank customers were called upon to visit bank branches across cities to carry out their banking transactions, often remaining in long queues and handling a large mass of money, running various risks, was coming to an end to make way for online transactions (Abdurrahaman *et al.* 2021).

eBanking is simply defined as a potential platform provided by banking institutions to facilitate their customers carrying out transactions by means of multiple devices using internet such as smartphones, tablets, laptops, and desktops (Anggraeni *et al.* 2021; Rehman and Shaikh, 2020). Its adoption by bank customers have been described by means of popular predictive models such as the social cognitive theory (SCT) as well as the theory of reasoned action (TRA) and its extension, the theory of planned behavior (Malik *et al.* 2022). However, noticeably, the most commonly used theoretical framework and model to describe individuals' acceptance of information technology and information systems is the technology acceptance model (TAM) (Oktay and Yetkin Ozbuk, 2020). However, it has been demonstrated in many empirical studies that TAM, including its extended version (TAM2), and the three behavioral models mentioned are inadequate in explaining attitudes and intention to adopt technologies (Rehman and Shaikh, 2020). Attitude was even later excluded from TAM on the basis of findings suggesting that it is insignificantly related to the use of technology (Thompson *et al.* 1991) and discussions were directed towards investigating rather its mediating role between perceived ease of use (PEU) and perceived usefulness (PU) in a non-attitude TAM (Teo *et al.* 2011; Nistor and Heymann, 2010) proposed by Venkatesh and Davis (1996).

TAM posits that behavioral intention, which is the major determinant of performing eBanking, is explained through two components: perceived ease of use (PEU) and perceived usefulness (PU) (Oktay and Yetkin Ozbuk, 2020). It has been later strengthened by adding perceived risk (PR) and innovativeness to form the extended TAM (TAM2), as evidence showed that behavioral intention to use eBanking depends equally on the risk involved in its use while understanding bank customers' adoption or rejection of new technologies. This makes innovativeness a crucial predictor (Anggraeni *et al.* 2021). Further inclusion of performance and effort expectations, social influence and facilitating conditions paved the way for the birth of the unified theory of adoption and use of technology (UTAUT) (Venkatesh *et al.* 2003). Researchers found it necessary over time to further expand TAM to integrate new variables in a quest of better understanding and explaining either eCommerce, Web, mobile banking, and eBanking usage. Thus, perceived enjoyment acknowledged as hedonic motivation, customers' levels of experience called habit and price value were at later stage deemed eligible for inclusion in UTAUT resulting in a newly developed model known as UTAUT2 (Venkatesh *et al.* 2012). Similarly, personal innovativeness and user interface were also added to contribute to the prediction of mobile learning (Joo *et al.* 2014).

There are numerous studies on eBanking or mobile banking that describe, even if it is not their study's primary objective or aim, customers' behavior, attitudes and perceptions in relation to internet banking use or adoption in emerging economy countries. One study portrayed banking customers' attributes toward making electronic payment in India as neither enjoyable, easy to use, nor useful. They believe it is risky and, therefore, important others are not willing to recommend it, though they feel "neutral" about the financial cost that occurs from its use (Mehta *et al.* 2021). Thus, banking customers are reluctant to use electronic payment. Conversely, another study in the same country showed that consumers agree with the use of e-Wallet, due to the high-perceived risk of using cash during the Covid-19 period as well as an increased perception of usefulness of this transactional mode (Vinitha, 2021). In Cambodia, mobile banking customers agree that transactions are completed promptly using the service and its use is stimulated by recommendations to family and acquaintances, though their perceived expectancy is "neutral" (Doa *et al.* 2020). The majority of these customers did not, however, express the intention to make payment by means of mobile banking. Oktay and Yetkin Ozbuk (2020) conducted a study that describe Turkish banking customers' perceptions of eBanking as useful, convenient to use and innovative while they are "neutral" when it comes to the risk involved in using digital banking.

Evidence from South Africa shows that rural eBanking customers find the digital service useful and so trustable that they are committed to continuing its usage, while they perceive its price value as low (Nkoyi et al. 2019). Previously, another study confirmed South African retail banking customers' intention to use internet banking with a positive attitude and belief that it is easy to use and useful. However, they tended to be "neutral" regarding the trust of the internet banking system and inviting important others to use it (Maduku, 2013). Surprisingly, a study comparing new technology adoption in Serbia and Ukraine indicates that online banking and electronic payment have a 10.5% and 9% rate respectively in the Ukraine (James et al. 2009). Recently, another research study that investigated banking customers' shift to virtual banking highlighted that Ukrainians see digital banking as a trend imported from the West, which they think might be successful in the future, but that the majority (50%) trust uniquely traditional banking, while two-thirds of the remaining respondents use both virtual and traditional banking (Zemtsov, 2021). The study also acknowledged also that Covid-19 and quarantine measures taken by the Ukrainian government accelerated the growing pace of virtual banking usage, but could not predict whether this change would be sustainable. It was difficult to the present study to portray Ukrainian banking customers' behavior and perceptions towards eBanking since no studies that investigated these specific aspects were found on the academic platforms used. Thus, it is believed that this study will foster knowledge on this matter by providing Ukraine data.

Everyone knows that for banks success depends on customer satisfaction and loyalty through quality service and value creation (Garín-Muñoz et al. 2019). Therefore, the needed investments required for setting up digital banking platforms and apps should not only bring banks into the era of new technologies to embrace a fashionable trend, but rather bring a superior quality of service and a high level of satisfaction for their customers. It is thus crucial to examine existing differences between demographic clusters with regards to their behavior and perceptions towards eBanking adoption/usage, as part of their segmentation and targeting strategy for designing customer oriented digital products (Dhanya and Velmurugan, 2021). This is what this study intends to do.

Table 1. Definition of ITC adoption attributes and Behaviour intention

Attributes	Definitions
<i>Perceived Ease Of Use (PEU)</i>	The degree of ease associated with the use of a specific technology or system (Chao, 2019).
<i>Perceived Usefulness (PU)</i>	The degree to which using specific technology will provide benefits to users in performing certain activities (Venkatesh et al. 2012)
<i>Effort Expectations (EE)</i>	The degree to which using specific technology will provide benefits to users in performing certain activities (Venkatesh et al. 2012)
<i>Social Influence (SI)</i>	The degree to which an individual perceives that important others believe he or she should use a specific technology (Venkatesh et al. 2003)
<i>Subjective Norms (SN)</i>	Something that refers to the perceived social pressure to do or not do the behavior (Ham et al. 2015)
<i>Perceived Digital Banking Services Quality (QU)</i>	The ability of the organization to meet or exceed customer expectations (Browne and O'Donnabhain, 2000). It is the difference between customer expectations of service and perceived service.
<i>Hedonic Motivation (HM)</i>	The fun or pleasure derived from using a specific technology and it has been proved to provide a vital role in determining technology adoption and use (Venkatesh et al. 2012)
<i>Customer Experience (CE)</i>	The customer's direct and indirect experience of the service process, the organization, the facilities and how the customer interacts with the service firm's representatives and other customers (Shojaei, 2022). These in turn create the customer's cognitive, emotional, and behavioral responses and leave the customer with memories about the experience.
<i>Behavioral Intention to Use (BI)</i>	A person's perceived likelihood to engage in a given behavior Oktay and Yetkin Ozbuk (2020)

This study opted for an extended TAM model that considered the following ITC adoption attributes in addition to behavior intention: performance expectations, effort expectations, perceived ease of use, social influence, subjective norms, perceived digital banking services quality, hedonic motivation and customer experience as explained in Table 1.

3. Methodology

3.1. Data collection and instrument design

The study questionnaire was made up of validated measurement items previously used in many regions of the world. It consisted of three main sections, of which the first asked participants about their digital banking behavior and the second inquired about their perceptions. The third section recorded the demographic characteristics of participants. A convenience sampling strategy was adopted as recommended for banking and segmentation studies (Baabdullaha *et al.* 2019). Data were collected through an online questionnaire that started with a filtering question that asked if participant made use of eBanking or not, which allowed this study to exclude the datasets where the response was “no” from further analysis. All perceptions attributes were measured on a seven-point scale ranging from “strongly agree” (1) to “strongly disagree” (7) and questions were chosen from Oktay and Yetkin Ozbuk (2020), Anggraeni *et al.* (2021), Doa *et al.* (2020), Malik *et al.* (2022), etc. As the data were gathered simultaneously in South Africa and Ukraine, a quota was set to retain the same number of correctly completed questionnaire to make each country contribute 50% of the final dataset. Thus, the first 187 usable questionnaires in each country’s dataset were considered for further analysis to make the total sample size 374. Participants needed on average seven minutes to fully complete the online questionnaire and were duly informed on the first page, prior to accessing the questions, about the objectives of the study and assured that all information collected would remain confidential and anonymous. The questionnaires were administered to eBanking customers aged at least 18 years old and residing in South Africa’s city of Tshwane and Ukraine’s Kiev from March to April 2021 in collaboration with colleagues from Kiev University of Technology.

3.2. Data analysis

Prior to deciding on the statistical tests to be conducted to analyze significance of differences between demographic clusters, the study’s final dataset underwent a screening procedure to determine whether the distribution followed a normal curve or not. Results suggested that parametric tests were suitable. Hence, independent-samples t-Test was used to compare difference within demographic characteristics comprising two clusters, while analysis of variance test (ANOVA) was better indicated for comparing differences for demographic characteristics including more than two clusters. Besides, descriptive statistics were also performed through mean and standard deviation.

3.3. Participants

South Africans and Ukrainians each made up half (50%) of the total dataset. The male participants came to 58.6% and 41.4% were female. Out of 374 participants, about 51.3% were aged between 18 and 25 years old, 21.4% between 26 and 35 years old, 15.2% between 36 and 45 years old, 7.2% between 46 and 55 years old, and 4.8 were aged over 56 years old or more. Most of the participants (40.1%) hold a certificate, followed by a graduate degree (31.6%), high-school graduates (15.8%), post-graduate degree (9.6%), doctorate degree (2.4%), and primary graduates (0.5%). Among the participants, about 44.4% were full-time students, 18.7% worked in the private sector and 15.0% in the public, 12.8% exercised occupational activities in the informal sector, 8.0% were unemployed, and 1.1% were self-employed.

Regarding participants’ reasons for using eBanking, 59.4% replied that they use it to pay bills, 52.1% to transfer money, 33.2% to top up their digital money, 23.8% for a savings account and deposits, 7.2% for loan related purposes, and 10.7% for other reasons. As for the

duration of using new banking technologies and apps, 53.2% indicated that they have been using them for more than two years, 30.7% between one and two years, 12.3% since seven to eleven months, and 3.7% for up to six months. Details of the above are provided in Table 2.

Table 2. Demographic Profile of the Participants (n = 374)

Bio-characteristics	Frequency	Percent	Bio-characteristics	Frequency	Percent
<i>Country</i>			<i>Level of education</i>		
South Africa	258	50.0	Primary Education	2	0.5%
Ukraine	258	50.0	High School Education	59	15.8%
Total	314	100.0	Certificate Education	150	40.1%
<i>Gender</i>			Degree Education	118	31.6%
Male	219	58.6%	Post-graduate Education	36	9.6%
Female	155	41.4%	Other	9	2.4%
Total	314	100.0	Total	314	100.0
<i>Duration of using e-banking</i>			<i>Age</i>		
0 to 6 months	14	3.7%	18 - 25 years old	192	51.3%
7 to 11 months	46	12.3%	26 - 35 years old	80	21.4%
1 – 2 years	115	30.7%	36 - 45 years old	57	15.2%
More than 2 years	199	53.2%	46 - 55 years old	27	7.2%
Total	314	100	56 years old and older	18	4.8%
<i>Occupation</i>			Total	314	100.0
Student	166	44.4%	<i>What do you use e-banking for?</i>		
Employed in the private sector	70	18.7%	Transfer Money	195	52.1%
Employed in the public sector (Government)	56	15.0%	Saving account and Deposit	89	23.8%
Unemployed	30	8.0%	Top up my digital money	124	33.2%
Pensioner	4	1.1%	Loan	27	7.2%
Self employed	48	12.8%	Pay Bills	222	59.4%
Other	166	44.4%	Other	40	10.7%
Total	314	100.0			

4. Findings

Mean differences in eBanking behavior and perceptions between South Africans and Ukrainians shown in Table 3 suggested that South Africans used eBanking less for money transfer ($\Delta M = -0.81$), to top up digital money ($\Delta M = -0.34$) and pay bills ($\Delta M = -0.22$) than Ukrainians. Contrariwise, South Africans described themselves as more knowledgeable about e-banking ($\Delta M = 0.28$) than Ukrainians and use the digital service more for other reasons ($\Delta M = 0.12$) than the aforementioned ones. Similarly, they scored closer toward “strongly agree” with statements based on performance expectations ($\Delta M = -0.38$), effort expectations ($\Delta M = -0.42$), perceived ease of use ($\Delta M = -0.47$), social influence ($\Delta M = -1.02$), subjective norms ($\Delta M = -1.56$), perceived digital banking services quality ($\Delta M = -0.67$), hedonic motivation ($\Delta M = -0.68$), customer experience ($\Delta M = -0.60$), and behavior intention ($\Delta M = -0.53$) than Ukrainians. A previous study comparing Serbians and Ukrainians adoption rates of internet-related technologies highlighted insignificant differences between individuals from both countries regarding internet banking though Ukrainians displayed a higher rate (James et al. 2009).

Table 3. Independent samples t-Test

Demographic	Country					Gender				
	South Africa	Ukraine	t-test for Equality of Means			Male	Female	t-test for Equality of Means		
	Mean (SD)	Mean (SD)	Mean Difference	t (df)	p-value	Mean (SD)	Mean (SD)	Mean Difference	t (df)	p-value
Transfer Money	0.12 (0.32)	0.93 (0.26)	-0.81	-26.47 (357.75)	0.00**	0.68 (0.47)	0.30 (0.46)	0.38	7.88 (372.00)	0.00**
Savings account and Deposit	0.21 (0.41)	0.26 (0.44)	-0.05	-1.09 (370.20)	0.28	0.28 (0.45)	0.18 (0.39)	0.10	2.26 (358.26)	0.02*
Top up my digital money	0.16 (0.37)	0.50 (0.50)	-0.34	-7.53 (341.33)	0.00**	0.39 (0.49)	0.25 (0.43)	0.15	3.08 (354.49)	0.00**
Loan	0.09 (0.29)	0.05 (0.23)	0.04	1.40 (351.68)	0.16	0.05 (0.23)	0.10 (0.30)	-0.04	-1.48 (275.77)	0.14
Pay Bills	0.48 (0.50)	0.71 (0.46)	-0.23	-4.53 (368.88)	0.00**	0.62 (0.49)	0.56 (0.50)	0.06	1.07 (372.00)	0.29
Other	0.17 (0.3)	0.05 (0.21)	0.12	3.74 (297.05)	0.00**	0.08 (0.28)	0.14 (0.35)	-0.06	-1.77 (280.34)	0.08
Duration of using e-banking	3.33 (0.84)	3.34 (0.83)	-0.01	-0.19 (372.00)	0.85	3.36 (0.80)	3.30 (0.88)	0.06	0.73 (372.00)	0.47
Describe your level of knowledge about e-banking?	4.95 (1.26)	4.67 (1.02)	0.28	2.34 (356.10)	0.02*	4.81 (1.08)	4.82 (1.25)	-0.01	-0.09 (372.00)	0.93
PE	2.40 (1.40)	2.78 (1.66)	-0.38	-2.41 (362.12)	0.02*	2.61 (1.53)	2.55 (1.57)	0.06	0.38 (372.00)	0.71
EF	2.29 (1.34)	2.71 (1.62)	-0.42	-2.71 (359.80)	0.01*	2.45 (1.44)	2.57 (1.59)	-0.12	-0.78 (372.00)	0.43
EOU	2.21 (1.37)	2.68 (1.81)	-0.47	-2.82 (346.61)	0.01*	2.42 (1.66)	2.48 (1.56)	-0.06	-0.30 (372.00)	0.77
SI	2.51 (1.27)	3.53 (1.34)	-1.02	-7.60 (372.00)	0.00**	3.20 (1.40)	2.77 (1.37)	0.43	2.97 (372.00)	0.00**
SN	2.38 (1.51)	3.94 (1.97)	-1.56	-8.60 (348.18)	0.00**	3.41 (1.96)	2.80 (1.80)	0.61	3.09 (372.00)	0.00**
QU	2.01 (1.19)	2.68 (1.64)	-0.67	-4.57 (339.55)	0.00**	2.41 (1.51)	2.25 (1.42)	0.16	1.00 (372.00)	0.32
HM	2.45 (1.41)	3.13 (1.46)	-0.68	-4.58 (372.00)	0.00**	2.87 (1.46)	2.69 (1.48)	0.18	1.15 (372.00)	0.25
INT	1.16 (0.76)	1.69 (1.46)	-0.53	-4.35 (279.98)	0.00**	1.47 (1.28)	1.36 (1.06)	0.11	0.91 (362.27)	0.36
CE	2.22 (1.12)	2.82 (1.70)	-0.60	-4.01 (322.74)	0.00**	2.54 (1.54)	2.48 (1.36)	0.06	0.40 (372.00)	0.69

Note: **The mean difference is significant at the $p \leq 0.01$ level; * The mean difference is significant at the $p \leq 0.05$ level.

It has been observed that eBanking adoption cannot be assumed similar even for countries with a similar internet penetration rate and economic classification. Hence, strategies to be adopted from banks in designing digital offers need to be adapted in accordance with each country's internet banking related behavior.

Mean differences displayed in Table 3 suggested that males used eBanking more for money transfer ($\Delta M = 0.38$), savings account and deposit ($\Delta M = 0.10$), and to top up digital money ($\Delta M = 0.15$) than females. On the contrary, females scored closer toward "strongly agree" with statements than males based on social influence ($\Delta M = 0.43$), and subjective norms ($\Delta M = 0.61$). However, a previous study conducted in India concluded that no statistically significant difference exists regarding dimensions of mobile banking adoption with respect to gender (Tamilselvi and Balaji, 2019). Notwithstanding this observed difference, the two studies came to the same conclusion of the non-existence of a statistically significant difference regarding marital status.

One-way ANOVA results (Table 4) demonstrated a statistically significant difference between age clusters based on: transfer money: $F(4,369) = 24.89$, $p = 0.00$; top up my digital money: $F(4,369) = 4.48$, $p = 0.00$; loan: $F(4,369) = 5.20$, $p = 0.00$; pay bills: $F(4,369) = 4.36$, $p = 0.00$; duration of using e-banking: $F(4,369) = 3.74$, $p = 0.01$; social influence: $F(4,369) = 7.55$, $p = 0.00$; subjective norms: $F(4,369) = 7.45$, $p = 0.00$; perceived digital banking services quality:

F(4,369) = 3.02, p = 0.02; hedonic motivation: F(4,369) = 4.23, p = 0.00; customer experience: F(4,369) = 3.21, p = 0.01; and behavior intention: F(4,369) = 3.00, p = 0.02. The Tukey post hoc test (Table 5) showed that overall generation Z (born after 2000) and Y (born 1980-2000) have statistically significantly a higher propensity of using eBanking than generation X (born 1965-1980). These results corroborate Burak and İpek (2021) findings. Hence, bank marketers must consider generation Y and Z customers as their emerging market regarding digital offers.

Table 4. one-way ANOVA

Demographic	Age		Educational Level		Occupation		Duration of using e-banking		Describe your level of knowledge about e-banking?	
	F (df)	p-value	F (df)	p-value	F (df)	p-value	F (df)	p-value	F (df)	p-value
Transfer Money	24.89** (4,369)	0.00	19.01** (5,368)	0.00	19.42** (5,368)	0.00	0.53 (3,370)	0.66	1.21 (6,367)	0.30
Savings account and Deposit	0.48	0.75	1.31 (5,368)	0.26	1.12 (5,368)	0.35	0.15 (3,370)	0.93	1.70 (6,367)	0.12
Top up my digital money	4.48** (4,369)	0.00	4.31** (5,368)	0.00	5.72** (5,368)	0.00	0.81 (3,370)	0.49	0.44 (6,367)	0.85
Loan	5.20** (4,369)	0.00	0.84 (5,368)	0.52	4.27** (5,368)	0.00	1.38 (3,370)	0.25	0.20 (6,367)	0.98
Pay Bills	4.36** (4,369)	0.00	1.00 (5,368)	0.42	3.49** (5,368)	0.00	1.34 (3,370)	0.26	0.74 (6,367)	0.62
Other	1.34 (4,369)	0.26	2.36* (5,368)	0.04	1.49 (5,368)	0.19	1.06 (3,370)	0.37	1.15 (6,367)	0.33
Duration of using e-banking	3.74* (4,369)	0.01	2.16 (5,368)	0.06	4.33** (5,368)	0.00			5.13** (6,367)	0.00
Describe your level of knowledge about e-banking?	2.18 (4,369)	0.07	1.60 (5,368)	0.16	1.76 (5,368)	0.12	2.26 (3,370)	0.08		
PE	1.75 (4,369)	0.14	0.69 (5,368)	0.63	1.25 (5,368)	0.29	2.47 (3,370)	0.06	1.21 (6,367)	0.30
EF	1.10 (4,369)	0.36	1.17 (5,368)	0.33	1.50 (5,368)	0.19	2.06 (3,370)	0.11	3.23** (6,367)	0.00
EOU	1.00 (4,369)	0.41	0.90 (5,368)	0.48	1.19 (5,368)	0.31	1.80 (3,370)	0.15	1.95 (6,367)	0.07
SI	7.55** (4,369)	0.00	3.34* (5,368)	0.01	6.69** (5,368)	0.00	2.42 (3,370)	0.07	1.07 (6,367)	0.38
SN	7.45** (4,369)	0.00	7.14** (5,368)	0.00	9.13** (5,368)	0.00	0.76 (3,370)	0.52	1.85 (6,367)	0.09
QU	3.02* (4,369)	0.02	0.49 (5,368)	0.78	0.66 (5,368)	0.65	1.64 (3,370)	0.18	1.72 (6,367)	0.11
HM	4.23** (4,369)	0.00	1.25 (5,368)	0.28	1.65 (5,368)	0.15	0.94 (3,370)	0.42	1.29 (6,367)	0.26
INT	3.00* (4,369)	0.02	2.08 (5,368)	0.07	0.92 (5,368)	0.47	0.40 (3,370)	0.75	2.12* (6,367)	0.05
CE	3.21* (4,369)	0.01	1.48 (5,368)	0.19	0.95 (5,368)	0.45	2.26 (3,370)	0.08	1.69 (6,367)	0.12

Note: **The mean difference within the groups is significant at the $p \leq 0.01$ level. * The mean difference within the groups is significant at the $p \leq 0.05$ level.

A statistically significant difference was found between educational level clusters as demonstrated by one-way ANOVA results (Table 4) based on: transfer money: F(5,368) = 19.01, p = 0.00; top up my digital money: F(5,368) = 4.31, p = 0.00; other: F(5,368) = 2.36, p = 0.04; social influence: F(5,368) = 3.34, p = 0.01; and subjective norms: F(5,368) = 7.14, p = 0.00. The Tukey post hoc test (Table 5) indicated that individuals with a medium level of education use eBanking more than highly educated individuals who are believed to wonder

more about security and trust of using digital banking leading to their reluctance to adopt ICT services and products as pointed out by Tamilselvi and Balaji (2019).

Table 5. Tukey post hoc

Demographic	Age			Educational Level			Occupation		
	Clusters	Mean Difference	p-value	Clusters	Mean Difference	p-value	Clusters	Mean Difference	p-value
Transfer Money				2 – 4	0.4322**	0.00	1 – 2	0.4041**	0.00
	1 – 2	0.4969**	0.00	2 – 5	0.4510**	0.00	1 – 3	0.3541**	0.00
	1 – 3	0.4186**	0.00	2 – 6	0.7288**	0.00	1 – 4	0.6803**	0.00
	1 – 5	0.5677**	0.00	3 – 4	0.4167**	0.00	1 – 6	0.3512**	0.00
	2 – 4	-0.2810*	0.04	3 – 5	0.4356**	0.00	3 – 4	0.3262*	0.02
				3 – 6	0.7133**	0.00	4 – 5	-0.9333**	0.00
Top up my digital money							1 – 2	0.2217*	0.01
	1 – 2	0.2469**	0.00	3 – 4	0.1924*	0.01	1 – 4	0.3217*	0.01
				3 – 5	0.2522*	0.04	2 – 5	-0.8000*	0.01
							3 – 5	0.6786*	0.05
							4 – 5	-0.9000**	0.00
Loan	1 – 3	-0.1371**	0.00				5 – 6	0.6875*	0.05
	1 – 4	-0.1644*	0.02				1 – 2	-0.1225*	0.01
Pay Bills	1 – 5	0.4340**	0.00				1 – 3	-0.1189*	0.03
	4 – 5	0.4815*	0.01						
Other				3 – 5	-0.1689*	0.04	1 – 6	0.2701*	0.01
Duration of using e-banking	1 – 3	-0.4252*	0.01						
Describe your level of knowledge about e-banking?							1 – 2	-0.3659*	0.02
EF							1 – 6	-0.4624*	0.01
SI							1 – 2	0.7147**	0.00
	1 – 2	0.7683**	0.00	2 – 4	0.6610*	0.03	1 – 3	0.7440*	0.01
	1 – 5	1.2694**	0.00				1 – 4	0.7776*	0.05
							1 – 6	0.6768*	0.03
							2 – 5	-2.1171*	0.03
							3 – 5	-2.1464*	0.03
							4 – 5	-2.1800*	0.03
							5 – 6	2.0792*	0.04
SN	1 – 2	1.0141**	0.00	2 – 4	1.5381**	0.00	1 – 2	0.9683**	0.00
	1 – 3	0.9437**	0.00	2 – 5	1.3117*	0.01	1 – 3	1.0648**	0.00
	1 – 5	1.5460**	0.00	3 – 4	0.9542**	0.00	1 – 4	1.0731*	0.04
							1 – 5	-3.0602*	0.01
							1 – 6	1.0856**	0.00
							2 – 5	-4.0286**	0.00
							3 – 5	-4.1250**	0.00
							4 – 5	-4.1333**	0.00
QU	1 – 2	0.6477*	0.01				5 – 6	4.1458**	0.00
HM	1 – 2	0.6205*	0.01						
	2 – 4	-1.0574*	0.01						
INT	1 – 2	0.5184*	0.01						

Notes: **The mean difference between the groups is significant at the $p \leq 0.01$ level. * The mean difference between the groups is significant at the $p \leq 0.05$ level. Legend of clusters by demographic characteristics: Age: (1) 18-25 years old; (2) 26-35 years old; (3) 36-45 years old; (4) 46-55 years old; (5) 56 years old and older. Education Level: (1) Primary; (2) High School; (3) Certificate; (4) Degree; (5) Post-graduate; (6) Other. Occupation: (1) Student; (2) Employed in the private sector; (3) Employed in the public sector; (4) Unemployed; (5) Pensioner; (6) Self-employed; (7) Other. Knowledge Level: 1) Zero knowledge; (2) Poor; (3) Little; (4) Average; (5) Fair; (6) Knowledgeable; (7) Expert

One-way ANOVA results (Table 4) demonstrated a statistically significant difference between occupation clusters based on: transfer money: $F(5,368) = 19.42, p = 0.00$; top up my digital money: $F(5,368) = 5.72, p = 0.00$; loan: $F(5,368) = 4.27, p = 0.00$; pay bills: $F(5,368) = 3.49, p = 0.00$; duration of using e-banking: $F(5,368) = 4.33, p = 0.00$; social influence: $F(5,368)$

= 6.69, $p = 0.00$; and subjective norms: $F(5,368) = 9.13$, $p = 0.00$. The Tukey post hoc test (Table 5) demonstrated that students and pensioners experienced statistically significantly more social pressure to adopt eBanking than other occupational categories. Students are found to be more active in transferring money, topping up digital money and paying bills through eBanking platforms, while unemployed people are almost inactive. Likewise, Tamilselvi and Balaji (2019) deemed occupation as an important demographic characteristic for bank marketers as well.

A statistically significant difference was found between eBanking level of knowledge clusters as demonstrated by one-way ANOVA results (Table 4) based on: duration of using e-banking: $F(6,367) = 5.13$, $p = 0.00$; and effort expectations: $F(6,367) = 3.23$, $p = 0.00$. The Tukey post hoc test (Table 5) demonstrated that eBanking expert customers have statistically significantly used digital banking for longer than poorly ($p = 0.01$), littlely ($p = 0.02$) and moderately knowledgeable customers ($p = 0.01$). Similarly, customers knowledgeable about eBanking have statistically significantly used digital banking for longer than moderately knowledgeable customers ($p = 0.01$). Furthermore, eBanking knowledgeable customers did not statistically significantly found performing online transactions less beneficial than poorly ($p = 0.02$) and little knowledgeable customers ($p = 0.05$). These results are much in line with the study conducted by Oktay and Yetkin Ozbuk (2020) in Turkey.

For convenience's sake, only statistically significant results have been reported in this study. All comparisons of mean results of online banking related behavior and perceptions not herein reported were found statistically insignificant.

5. Conclusion

Communication technologies are developing so fast that ignoring or hesitating to keep in step with the trends they bring can cost a business bankruptcy, especially in the financial sector where banks play a role. However, the switch to eBanking has value only if digital platforms and apps, services and products carry customer value and a greater level of satisfaction to banking customers. Hence, efforts should be made to design banking digital offers using segmentation and targeting strategies. This requires scrutinizing demographic clusters behavior and perceptions toward the adoption of new technologies.

This study relied on enhanced TAM model attributes such as behavior intention, performance expectations, effort expectations, perceived ease of use, social influence, subjective norms, perceived digital banking services quality, hedonic motivation and customer experience to portray individuals' behavior and perceptions toward eBanking. A questionnaire made up of validated items was set and administered online to assess the considered variables as well as behavioral and demographic characteristics of eBanking customers in South Africa and the Ukraine, two developing free-market economies with quite similar accessibility to internet for their population. Data collected were analyzed using descriptive and inferential statistics. An independent-samples t-Test was performed to compare difference between demographic characteristics including two clusters, while the one-way ANOVA and Tukey post hoc tests were used for those comprising more than two groups.

Despite being both ranked as emerging economies, statistically significant differences on eBanking behavior and perceptions were found between South Africans and Ukrainians as was the case in the study conducted by James *et al.* (2009) that compared Ukraine with Serbia. Likewise, statistically significant difference regarding attributes to adopt eBanking and behavior intention to use it was found between clusters with respect to gender, age, education, occupation, and level of knowledge. These results were in accordance with the findings of similar research conducted in other emerging countries such as India and Turkey by Tamisselvi and Balaji (2019), Burak and İpek (2021) and Oktay and Yetkin Özbük (2020).

The Covid-19 pandemic and the restrictive measures taken by authorities played a role in boosting digital banking, but banks need to benefit for it to sustain customers' newly acquired banking behavior and habits. Therefore, bank marketers are invited to avoid underscoring crucial information profiling digital banking users as the one provided in the present study.

References

- Abdurrahaman, D. T., Sharubutu, M. S., Sabiu, T. T., Adam, S. B., Ibrahim, M. G. and Udu, A. A., 2021. Examining the determinants of eBanking adoption: evidence from Nigeria. *Technium Social Sciences Journal*, 22(1), pp. 463-482.
- Anggraeni, R., Hapsari, R. and Muslim, N. A., 2021. Examining factors influencing consumers intention and usage of digital banking: evidence from Indonesian digital banking customers. *Asia-Pacific Management and Business Application*, 9(3), pp. 193-210. <https://doi.org/10.21776/ub.apmba.2021.009.03.1>
- Baabdullah, A. M., Ranab, N. P., Alalwanc, A. A., Islamd, R., Patile, P. and Dwivedie, Y. K., 2019. Consumer adoption of self-service technologies in the context of the Jordanian banking industry: examining the moderating role of channel types. *Information Systems Management*, 36(4), pp. 286-305. <https://doi.org/10.1080/10580530.2019.1651107>
- Browne, M. and O'Donnabhain, S., 2000. The assessment of client satisfaction in the client-project manager relationship: an expectations - artefact model. *Project Management*, 5(1), pp. 42-49.
- Burak, E. I. and Ipek, A.-F., 2021. Covid-19's impact on attitude & intention to use mobile banking applications. *International Journal of Recent Technology and Engineering*, 10(2), pp. 135-144. <https://doi.org/10.35940/ijrte.B6226.0710221>
- Chao, C.-M., 2019. Factors determining the behavioral intention to use mobile learning: an application and extension of the UTAUT model. *Frontiers in Psychology*, 16 July. pp. 1-14. <https://doi.org/10.3389/fpsyg.2019.01652>
- Dhanya, B. K. and Velmurugan, V. P., 2021. Influence of demographic variables on customer satisfaction on e-Banking in public sector banks. *Elementary Education Online*, 20(5), pp. 1774-1781.
- Doa, N. H., Thama, J., Azama, S. M. F. and Khatibia, A. A., 2020. Analysis of customer behavioral intentions towards mobile payment: Cambodian consumer's perspective. *Accounting*, 6, p. 1391–1402. <https://doi.org/10.5267/j.ac.2020.8.010>
- Garín-Muñoz, T., López, R., Pérez-Amaral, T., Herguera, I. and Valarezo, A., 2019. Models for individual adoption of eCommerce, eBanking and eGovernment in Spain. *Telecommunications Policy*, 43(1), pp. 100-111. <https://doi.org/10.1016/j.telpol.2018.01.002>
- Haftu, G. G., 2019. Information communications technology and economic growth in Sub-Saharan Africa: A panel data approach. *Telecommunications Policy*, pp. 88-99. <https://doi.org/10.1016/j.telpol.2018.03.010>
- Ham, M., Jeger, M., Ivković & Frajman, A., 2015. The role of subjective norms in forming the intention to purchase green food. *Economic Research-Ekonomska Istraživanja*, 28(1), pp. 738-748. <https://doi.org/10.1080/1331677X.2015.1083875>
- Intergate Immigration Service, 2022. *South Africa shines as emerging economy*. [online] Available at: <<https://www.intergate-immigration.com/blog/south-africa-shines-as-emerging-economy/#:~:text=South%20Africa%20is%20the%20leading,destination%2C%20a%20rport%20has%20found>> [Accessed on 24 February 2022].
- International Trade Administration, 2022. *Ukraine - country commercial guide*. [online] Available at: <<https://www.trade.gov/country-commercial-guides/ukraine-market-overview>> [Accessed on 17 March 2022]
- James, W., Torres-Baumgarten, G., Petkovic, G. and Havrylenko, T., 2009. A psychographic profile of users of internet related technologies in Serbia and the Ukraine. *Journal of East-West Business*, 15(2), pp. 119-140. <https://doi.org/10.1080/10669860903133435>
- Joo, Y. J., Lee, H. W. and Ham, Y., 2014. Integrating user interface and personal innovativeness into the TAM for mobile learning in Cyber University. *Journal of Computing in Higher Education*, 26, pp. 143–158. <https://doi.org/10.1007/s12528-014-9081-2>
- Maduku, D. K., 2013. Predicting retail banking customers' attitude towards Internet banking services in South Africa. *Southern African Business Review*, 17(3), pp. 77-100.

- Magotra, I., Sharma, J. and Sharma, S. K., 2018. Investigating linkage between customer value and technology adoption behaviour: A study of banking sector in India. *European Research on Management and Business Economics*, 24(1), p. 17–26. <https://doi.org/10.1016/j.iedeen.2017.11.001>
- Malik, G., Singh, D. and Stakić, N., 2022. Understanding the behavioural intention to adopt internet banking: An indian perspective. *The European Journal of Applied Economy*, 19(1), pp. 110-120.
- Mehta, P., Singla, H., Saha, R. and Tyagi, S., 2021. A pathway to technology integration: eliciting consumer's behavioural intention to use Paytm services. *Paradigm*, 25(1), p. 7-24. <https://doi.org/10.1177/09718907211003712>
- Nistor, N. and Heymann, J. O., 2010. Reconsidering the role of attitude in the TAM: An answer to Teo (2009a). *British Journal of Educational Technology*, 41(6), p. E142–E145. <https://doi.org/10.1111/j.1467-8535.2010.01109.x>
- Nkoyi, A., Tait, M. and Van derWalt, F., 2019. Predicting the attitude towards electronic banking continued usage intentions among rural banking customers in South Africa. *South African Journal of Information Management*, 25(1), p. a1016. <https://doi.org/10.4102/sajim.v21i1.1016>
- Oktay, B. and Yetkin Ozbuk, U. R. M., 2020. Segmentation of customers based on behavioral intention to use multi-channel banking and experience. *Pazarlama İçgörüsü Üzerine Çalışmalar*, 4(1), pp. 13-26.
- Rehman, Z. U. and Shaikh, F. A., 2020. Critical factors influencing the behavioral intention of consumers towards mobile banking in Malaysia. *Engineering, Technology & Applied Science Research*, 10(1), pp. 5265-5269. <https://doi.org/10.48084/etasr.3320>
- Shojaei, A. S., 2022. Does digital transformation impact customer experience? In: C. A. Santos, B. Barbosa, and S. Filipe, eds. 2022. *Handbook of research on smart management for digital transformation*. Hershey: IGI Global, pp. 210-232. <https://doi.org/10.4018/978-1-7998-9008-9.ch010>
- Tamilselvi, R. and Balaji, P., 2019. The key determinants of behavioural intention towards mobile banking adoption. *International Journal of Innovative Technology and Exploring Engineering*, 8(10), pp. 1124-1130. <https://doi.org/10.35940/ijitee.J8891.0881019>
- Teo, T., Faruk Ursavas, O. and Bahcekapili, E., 2011. Efficiency of the technology acceptance model to explain pre-service teachers' intention to use technology. *Campus-Wide Information Systems*, 28(2), p. 93–101. <https://doi.org/10.1108/10650741111117798>
- The World Bank Group, 2022. *Individuals using the Internet (% of population)*. [online] Available at: <<https://data.worldbank.org/indicator/IT.NET.USER.ZS>> [Accessed on 08 April 2022].
- Thompson, R. L., Higgins, C. A. and Howell, J. M., 1991. Personal computing: Toward a conceptual model of utilization. *MIS Quarterly*, 15(1), pp. 125-143. <https://doi.org/10.2307/249443>
- Treisman, R., 2022. *Russia's war could shrink the Ukrainian economy by 45% this year, the World Bank says*. [online] Available at: <<https://www.npr.org/2022/04/11/1092032051/russia-war-shrink-ukraine-economy-world-bank>> [Accessed on 25 May 2022].
- Venkatesh, V. and Davis, F. D., 1996. A model of the antecedents of perceived ease of use: development and test. *Decision Sciences*, 27(3), pp. 451-481. <https://doi.org/10.1111/j.1540-5915.1996.tb01822.x>
- Venkatesh, V., Morris, M. G., Davis, G. B. and Davis, F. D., 2003. User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 27(3), pp. 425-478. <https://doi.org/10.2307/30036540>
- Venkatesh, V., Thong, J. Y. and Xu, X., 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. <https://doi.org/10.2307/41410412>
- Vinitha, K., 2021. A model of behavioural intention on usage of e-Wallet amid the pandemic Covid-19. *Natural Volatiles & Essential Oils*, 8(5), pp. 9909-9919.
- Zemtsov, M., 2021. Bachelor thesis. Vienna: Modul University.