

E-Banking Technology Characteristics, Innovative Behaviour and E-Banking Technology Adoption in Vihiga County, Kenya

Kitigin K. Beatrice¹ * Korir Michael² & Chepkwony Kefa¹

¹Department of Quantitative Skills and Entrepreneurship Studies, School of Business and Economics, Moi University, Kenya

²Department of Management Science, School of Business and Economics, Moi University, Kenya

***Corresponding Author's Email Address:** beatricekitigin@gmail.com

Abstract

Technological transformation is gradually shaping the operations of micro and small enterprise sector. The call for e-banking technology adoption has emerged as a result of challenges associated with transactions such as bills payment, funds transfer, deposits, payments of suppliers, receiving payments and maintaining business relationships. Given e-banking technology characteristics, past studies have sought to look into it in relation to e-banking technology adoption. However, to fill the existing gap, the study used innovative behaviour to moderate the link between the study variables. The main objective was to assess the moderating effect of innovative behaviour on relationship between E-banking technology characteristics and E-banking technology adoption in Vihiga County, Kenya. Specifically, the study evaluated the effect of e-banking technology characteristics on e-banking technology adoption; the moderating effect of innovative behaviour on e-banking technology characteristics and e-banking technology adoption. As guided by diffusion of innovation theory, positivism research paradigm and explanatory research design, 5915 MSEs were targeted. Using multi-stage sampling technique, data from 455 Micro and Small Enterprises (MSEs) was analyzed. The findings indicated that there is a significant relationship between e-banking technology characteristics and e-banking technology adoption ($\beta=.798$, $p=.000$ with 64.5% prediction. The moderating variable, innovative behaviour, had an insignificant relationship between e-banking technology characteristics and e-banking technology adoption. Based on these results, it is recommended that the government and the policy makers should formulate regulatory requirements to make entrepreneurs switch from cash to e-banking technology. This will in turn change the mind-set of the entrepreneurs to see technology adoption as a positive move towards enterprise performance. It is expected that the findings of the study should form a basis for policy reviews for government, county and private sector on e-banking technology characteristics and e-banking technology adoption.

Keywords: Innovative Behaviour, E-Banking Technology Characteristics, Adoption, Vihiga, Kenya

INTRODUCTION

The need for e-banking technology adoption in enterprises is gaining popularity alongside advancement in technology. There is a shift from dependence on physical cash to e- transactions, and this has further affected the future of businesses both in developed and developing economies. E-banking technology is the next big wave of business as suggested by (Masinge, 2011). Adoption of e-banking is getting popular due to its time liberty, cost saving, ease of use, swiftness, and convenience of carrying out the transactions. Technological changes are witnessed in the recent studies as

indicated by (Aladwani, 2001) who identified e-commerce as the fastest growing area for enterprises. Furthermore, (Woodward, 2009) indicated that uncertain future of economies with shifts in population demographics and other dynamic forces had transformed the operations of organizations as never before, bringing new challenges and opportunities to the forefront all over the world.

E-banking technology has been recognized as a key determinant for an organization's growth and profitability. According to (Sivabalan, Booth, Malmi, & Brown, 2009), e-banking technology has been related to high firm growth, superior performance, and longevity (Soininen, Puumalainen, Sjögrén, Syrjä, & Durst, 2013). E-banking technology offers various benefits to MSEs such as funds transfers, make payments, pay bills, receive payments, check account balances which in turn reduce transaction costs and establish greater control over bank accounts and maintain relationships with customers (Frank, Kessler & Fink, 2010). The need for e-banking technology is meant to decrease expenses of cash management and increasing efficiency of carrying out transactions hence enablement of conducive environment for growth and survival of enterprises. Bayero (2015) suggested that the prediction of a cashless society was determined by an increased use of internet banking. As indicated by Nweke (2012), practically 97% of transactions were carried out without physical cash and this had enormously decreased cost, corruption, money laundering and tax evasion in the western world. Laoye (2011) suggested that the system is focusing at empowering electronic methods for making payments and not aimed at discouraging cash transactions.

Studies have indicated that e-banking technology characteristics contribute immensely to e-banking technology adoption which leads to enhanced MSE performance. In Kenya there is consistent increment in use of e-banking technologies such as automated teller machine (ATM), mobile banking and Internet banking, direct electronic funds transfer, bill payments, use of debt and credit cards (CBK, 2010; Gikandi & Bloor, 2010). E-banking is therefore becoming the centerpiece of enterprise selling strategies, with the leading organizations developing new financial services or modifying existing ones to suit customers need to carry out transactions of goods and services without necessarily disrupting the normal functioning in these organizations. However, with exposure to such e-banking services, it is not clear if MSEs are becoming innovative by adopting e-banking technology in their enterprises (Khalifa & Cheng, 2002). For adoption to be effective there is need for innovative behaviour to be the invisible hand driving the decisions made in business. Many enterprises through innovative behaviour, have held competitive advantage over their competitors Ashourizadeh, Chavoushi, and Schøtt (2014). Innovative behaviour is increasingly becoming the single most important element in creating and sustaining competitive advantage (Tidd, 2006). Few studies having looked at direct relationship between e-banking technology characteristics and e-banking technology adoption. However, e-banking technology adoption has attracted attention of many researchers as a dependent variable; (Ovat, 2012; Karjaluo, Koenig-Lewis, Palmer, and Moll (2010); Riquelme, Al-Sammak, and Rios (2010). Prior studies have not employed an intermediate relationship. It is in response to this scenario, that this study proposes the use of innovative behaviour on the relationship between e-banking technology characteristics and e-banking adoption to fill this gap.

THEORETICAL AND LITERATURE REVIEW

Diffusion of Innovation Theory

This study was anchored on Diffusion of Innovation Theory advanced by (Rogers, 2003). The innovation decision process theory was based on five distinct stages. (Nutley, Davies, & Walter, 2002) suggested that the first stage was knowledge. Potential adopters first learnt about the innovation. Second, they were persuaded according to the merits of the innovation. Third, they decided to adopt the innovation. Fourth, once they adopted the innovation, they implemented it. Fifth, they confirmed that their decision to adopt was the appropriate decision. Diffusion results achieved once these stages are accomplished (Rogers, 1995). Basing on (Rogers & Singhal, 2003), factors which impact the diffusion of an innovation includes; relative advantage (the extent to which a technology offers improvements over currently available tools), compatibility (its consistency with social practices and norms among its users), complexity (its ease of use or learning), Trialability (the opportunity to try an innovation before committing to use it), and Observability (the extent to which the technology's outputs and its gains are clear to see). These components are not fundamentally unrelated in this manner unfit to anticipate either the degree or the rate of innovation diffusion. Diffusion innovation theory is based on who adopts the innovation and when. The diffusion of innovation theory has been criticized by several scholars due to possibility that people might reject an innovation even if they fully understood it (Waterman et al., 2007). Similarly, insufficient consideration was given to innovation characteristics and how these characteristics changed over time (Wolfe, 1994). As indicated by (Kole, 2000) it is technology driven because of its pro -innovation bias which implied that all members of a social system adopted innovations and adoption would happen more quickly. (Kole, 2000) likewise demonstrated that first, Diffusion of innovation theory did not consider the fact that diffusion and adoption might fail since it was an impractical notion in the first place; second, that it associated the latest technologies with progress without considering alternatives; and lastly, that it centers on the individual adopter and thereby overlooking social structures. Despite the criticism, diffusion of innovation remained to be the theory that guided this study based on usage and fulfilment in using e-banking technology. The importance of this theory is that adoption of an innovation grows gradually and continuously in the beginning. It then moves to a period of rapid growth since everyone by then will be aware of this technology (Rogers, 2003). The findings of Rogers are in line with this study as it shows the relationship between e-banking technology characteristics and e-banking technology adoption. Anchoring on adoption of e-banking technology created in the process of diffusion of innovation, conceptualization was thus made between e-banking technology characteristics, innovative behaviour and e-banking technology adoption.

Relationship between E-banking Technology Characteristics and E-Banking Technology Adoption

Research on technology suggests that when people perceive usefulness of a new technology over an old one, they tend to adopt it while benefits such as immediacy, convenience and affordability to customers influence adoption in the context of e-banking (Lin, 2011). Further, Davis (1989) proposed the Technology Acceptance Model (TAM) which incorporated characteristics of perceived ease of use and perceived usefulness into a model of technology acceptance. From other studies that have been done by Karjaluoto, Koenig-Lewis, Palmer, and Moll (2010) on factors that influenced the continuation of the use of e-banking services by youth in England and

further aimed at investigating barriers of e-banking adoption. Their findings showed that compatibility, perceived usefulness, and risk were significant factors that affected the adoption of e-banking. Compatibility had a strong positive effect on the adoption of e-banking. Compatibility was also identified as one of the most important independent variables that affected perceived ease of use, perceived usefulness, and credibility. Sohail and Al-Jabri (2014) after investigating the attitudes of users versus non-users in the adoption of e-banking in Saudi Arabia, identified relative advantage, complexity, compatibility, perceived risk and trial-ability had a significant influence on e-banking adoption. In a study, Afshan and Sharif, (2016) investigated mobile banking acceptance in Pakistan. Concentrating on the technological issues (Davis, 1989), propels the Technology Acceptance Model (TAM). This model relates the peoples' behavioural intentions and their IT use. It is proposed that, the genuine conduct of an individual is dictated by his social expectation to utilize (his behavioural intention to use), which is in turn influenced by user's attitude toward perceived ease of use and perceived usefulness of that technology. The results conclude that e-banking technology characteristics have an effect on e-banking technology adoption.

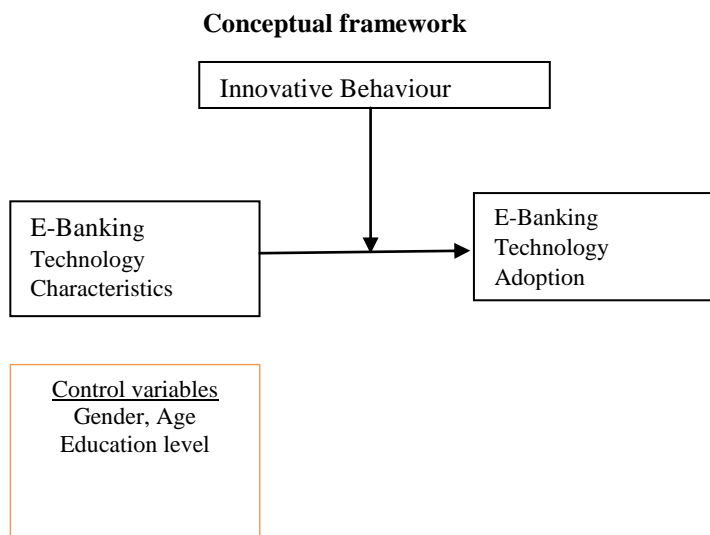
Moderating Role of Innovative Behaviour

Innovation is a crucial aspect to the success of any business (Waterman et al., 2007). For business to realize growth, investment in technology ought to be created so as to cut back prices and increase the amount of sales. In agreement with (Halim, Ahmad, Ramayah, & Hanifah, 2014), innovation and competitive advantage have deep roots within the creation of one new thing, which is completely different and distinctive. An entrepreneur should be confident and motivated enough to continually try new things such as new methods of carrying out transactions like e-banking technology. To this end an entrepreneur would become competitive and equipped with the appropriate knowledge, skills and abilities to effectively create and adopt new ideas as innovation is crucial for the sustainability of any business. Innovative behaviour is defined as the process of creating new ideas and their implementation (Liedholm & Mead, 2013). Innovative behaviour ranges from a disposition to try new products or services, to a commitment to be at the cutting edge of practice moving beyond the current state of the art (Dess & Lumpkin, 2005). It is demonstrated by problem solving, finding artistic solutions, and developing new products and services (Borland, Barrera Zambrano, Ceusters, & Shorrock, 2011) through the support of experimentation. Since organizations use innovation as a tool to influence environment, Innovative ideas such as e-banking technology can be implemented either during a series of steps or in one vast leap towards desired results. According to (Haroon Hafeez, Shariff, Noor, & Mad Lazim, 2012), innovation is regarded as an engine for driving economic growth. Role of innovation becomes of even greater importance in the context of the business environment of developing countries such as Kenya, where most of the enterprises do not embrace rigorous innovation and at the same time there is lack of sufficient support to encourage innovation. Based on the above discussion, we argue that innovative behaviour has a moderating effect on the relationship between e-banking technology characteristics and e-banking technology adoption.

Based on the literature reviewed, this study proposed the following hypotheses:

- i. E-banking technology characteristics have no significant effect on banking technology adoption in Vihiga County, Kenya.

- ii. Innovative behaviour has no moderating effect on the relationship between e-banking technology adoption and MSE performance in Vihiga County, Kenya.



Source: Researcher, 2019

METHODOLOGY

Design and participants

This study adopted explanatory research design. The design was used to identify any causal links between the variables that pertained to the research question. This design allowed the collection of quantitative data using multi-stage sampling techniques in selecting respondents respectively. Before administering the questionnaire, permission was sought from National Commission for Science, Technology and Innovation and subjected to authority from the County Director Education, Vihiga County, Kenya. The researcher with the help of research assistants administered the questionnaires to MSEs. Respondents were informed that their participation in the study was voluntary and their protection was guaranteed through anonymity. The survey instrument was taken after completion. Primary data were collected using closed-ended self-administered questionnaire. A sample size of 455 MSEs were selected from a target population of 5915 consisting of Micro and Small Enterprises located in Vihiga County, Kenya as shown in table 1 below.

Table 3: Target Population

Sub County	Population
Emuhaya	579
Hamisi	1561
Luanda	1176
Sabatia	1234
Vihiga	1365
Total	5915

Source: County Government of Vihiga (2018)

The researcher employed Yamane's (1967) formula to determine the sample size. The sample size was determined based on 5% margin of error/ level of precision and 95% level of confidence. The formula is as follows:

$$n = \frac{N}{1 + N(e^2)}$$

Where,

n is the desired sample size

N is the finite population which is 5915 SMEs

e is the margin error/ level of precision taken as 0.05

The formula can be substituted as:

$$n = \frac{5915}{1 + 5915(0.05^2)} = 455$$

Based on a target population of 5915 enterprises, a sample of 455 enterprises was arrived at.

The study employed multi-stage sampling technique which involved clustering the sub counties. The study further employed proportionate stratified sampling technique to select MSEs to participate in the study. With reference to Table 2 below, the population was put into five clusters representing the five sub counties in Vihiga County. This is dividing the study population into homogenous groups known as clusters. Proportionate stratified sampling technique was used to select the respondents in each sub county as was classified into various MSE sector according to (Kenya, 2005). Thereafter, the study picked the owner or the manager in each of the sampled units as the unit of analysis. The key reason being that IT related decisions are often the preserve of the two. For instance, the researcher began by selecting MSEs to participate in study from Emuhaya where out of the total 579 MSEs, only 44 were selected. Proportionate to each sector, out of 53 MSEs in manufacturing sector, 4 were selected to participate in the study. The procedure was repeated for the other three sectors; service, traders and agribusiness for Emuhaya. Thereafter the researcher proceeded to the second Sub County until the last one. The advantage of this method was that it allowed the researcher to obtain a sample that best represented the entire population under study (Neuman, 2014).

Table 4: Sampling Frame

Sub County	MSE Sectors								Total (n)
	Manufacturing		Traders		Services		Agri-business		
	N	n	N	n	N	n	N	n	
Emuhaya	53	4	168	13	107	8	251	19	44
Hamisi	153	12	432	33	355	27	621	48	120
Luanda	160	12	349	27	261	20	406	31	90
Sabatia	123	9	372	29	236	18	503	39	95
Vihiga	143	11	385	30	426	33	411	32	106
Total	632	48	1706	132	1385	106	2192	169	455

Key: N- Target Population, n-Sample Size

Source: County Government of Vihiga (2018)

Measures

E-banking technology adoption

An e banking technology eliminates the usage of money as a medium of exchange for goods and services by allowing electronic transfer payments. The study measured adoption using 9 items adopted from (Rawashdeh, 2015) with few modifications to suit the current study. Its constructs include the following: usage and frequency of use. It will be measured using indicators such; “I use e banking to pay my utility bills”, “I use e banking to transfer money”. Each question was assessed on a Likert scale of 1–5 ranging from 5- strongly agree to 1- strongly disagree.

E-banking Technology Characteristics

The dimensions of e-banking technology included perceived ease of use and perceived usefulness. Perceived ease of use was measured using 9 items adopted from (Wang, Rau, & Salvendy, 2011) with modifications to suit this study while perceived usefulness was measured using 9 items in section C of the questionnaire. Indicators for perceived ease of use included; “Using electronic banking requires little mental effort”, “Learning to operate electronic banking is easy for me”.

Innovative Behaviour

Data on innovative behaviour was generated using a set of 13 items in section E of the questionnaire. Innovative behaviour in MSEs involved generation of new ideas and their implementation (Blattman, Fiala, & Martinez, 2014). Its constructs were as follows: uniqueness and new ways of transactions adopted from (Lumpkin & Dess, 1996) and modified to fit this study. The measurement was conducted using indicators such as; “new methods and services are always worth trying even if they may prove risky”, “I involve current and potential customers to identify areas that need improvement”.

Control Variables

The study controlled gender, age and education level of the MSE owner/manager to eliminate their adverse influence on e-banking technology characteristics, e banking technology adoption and innovative behaviour. For example age has been found to have an effect on decision making (Lee & Swaminathan, 2000). Age was measured as below 25, 26–30, 31–35, 36-40, over 40 years. Gender was measured using male and female and education level was measured at post graduate, bachelors, diploma, certificate, secondary, primary and none.

Statistical analysis

First, descriptive statistics for the variables of interest were calculated, followed by correlation analysis to determine the associations among these variables. Secondly, the study sought to examine the relationship between e-banking technology characteristics and e-banking technology adoption. Finally, the study sought to examine the moderating effects of innovative behaviour on the relationship between e-banking technology characteristics and e-banking technology adoption. This study analyzed data using multiple regression.

RESULTS

Demographic Profile of Respondents

The information of demographic profile of the respondents includes; age, gender, level of education, designation and business ownership. Results are presented in table 3 below.

Table 3: Demographic Profile of Respondents

Profile	Description	Frequency	Percent
Gender	Female	208	51.7
	Male	194	48.3
	Total	402	100.0
Age	Below 25	66	16.4
	26-30	98	24.4
	31-35	81	20.1
	36-40	70	17.4
	Above40	87	21.6
	Total	402	100.0
Education level	None	5	1.2
	Primary	53	13.2
	Secondary	132	32.8
	Certificate	80	19.9
	Diploma	70	17.4
	Bachelor	41	10.2
	Postgraduate	21	5.2
	Total	402	100.0
Business ownership	Sole Proprietorship	284	70.6
	Partnership	72	17.9
	Company	46	11.4
	Total	402	100.0
Designation	Owner	309	76.9
	Manager	93	23.1
	Total	402	100.0

Source: Researcher (2019)

As indicated in Table 3, majority of the MSEs owners/ managers were females with a proportion of 208 (51.7%), while males constituted 194 (48.3%), which means that although the majority of respondents are female, the population of males is more than one third of the sample population. In terms of age of respondents, who were the owners/ managers of MSEs, the results indicated that 66 (16.4%) were below 25 years of age, 98 (24.4%) were between 26 to 30 years, 81 (20.1%) were between 31 and 35 years, 70 (17.4%) were between 36-40 years and 87 (21.6) were above 40 years of age. This reveals that majority of respondents for this study are at the youthful stage which is an age full of energy, and thus the MSEs are at the right stage to make decisions that can enhance performance of their enterprises. Education level has an impact on how people respond to different opinions. The study sought to find out the education level of the respondent where 4.2, 5 (1.5%) of the respondents had no education, 53(13.2%) were primary school leavers, majority 132 (33.9%) were secondary school leavers, 80 (19.4%) certificate level, 70 (16.9%) diploma level, 41(10.4%) bachelor's degree and 21 (5.1%) postgraduate level. This implies that majority of the respondents had tertiary level education (colleges and polytechnics and university level education, then secondary level). Therefore, we make the general conclusion that a large percentage of the entrepreneurs were well educated and as a consequence, would be able to choose and adopt e-banking technology in their enterprises. The study further sought to identify business ownership, findings indicated that 284 (70.6%) of the MSEs were solely owned, 72 (17.9%) was a partnership while 46 (11.4) were companies. This implies that Most of the MSEs in Vihiga County were privately owned. Finally, 309 (76.9%) were the actual MSE owners and 93 (23.1%) were MSE managers. This was advantageous as having more owners resulted in a higher level of validity of the

information received as these were well versed with all the challenges they go through while doing the business since its inception.

Descriptive Statistics for E-banking Technology Characteristics, E-banking Technology Adoption and Innovative Behaviour

Table 4: Means, standard deviations, reliability and correlation results

Variables n=402	M	SD	Reliability(α)	Correlation1	2
E- banking technology adoption (ETA)	4.21	.873	.888		
E- banking technology charact. (EBT)	4.21	.893	.888	.905**	
Innovative behaviour(IB)	4.17	.862	.888	.719**	.679**

** . Correlation is significant at the 0.01 level (2-tailed).

Source: Researcher (2019)

The above table indicates the means, standard deviations, and correlation results for all variables of the study. The findings indicate that both e-banking technology adoption and e-banking technology characteristics has the highest mean of 4.21 with a standard deviation of .873 and .893 respectively, while innovative behaviour had the least mean of 4.17 and a standard deviation of .862. Furthermore, the scale reliability was in the accepted range as the Cronbach' Alpha was above .7 for all variables. Correlation analysis was meant to basically indicate the strength as well as the direction of association of the study variables. Results of correlation shows that all variables were positively associated with e-banking technology adoption, with e-banking technology characteristics having the highest relationship with $r = .905$, $p < .01$, followed by innovative behaviour with $r = .679$, $p < .01$.

Hypothesis testing

Hypothesis H_1 stated that e banking technology characteristics had no significant effect on e-banking technology adoption. The findings in the table 5 reveals that gender $\beta = -.032$, $p > .05$ and education $\beta = -.068$, $p > .05$ were found to be insignificant while age $\beta = -.053$, $p < .05$ was found to significantly have an effect on e-banking technology adoption. The study further indicates that this model explains 64.5% of the variance on e-banking technology adoption with $R^2 = .645$, $\Delta R = .645$, $F = 180.489$, $p < .05$. The ΔR^2 of .645 indicates that e-banking technology characteristics contribute 64.5% of the variance on e-banking technology adoption while holding constant control variables. Furthermore, the findings indicate that e banking technology characteristics had a positive and significant effect on e-banking technology adoption with coefficient estimates of .798 with $p < .05$ thus the null hypothesis was rejected.

Table 5: Results for E-Banking Technology Characteristics on E- Banking Technology Adoption

Model		Unstandardized		Standardized		Sig.
		Coefficients		Coefficients		
		B	Std. Error	Beta	T	
1	Gender	-.065	.061	-.032	-1.065	.287
	Age	-.049	.022	-.068	-2.256	.025
	Education	-.037	.021	-.053	-1.736	.083
	E-banking technology characteristics	.798	.052	.798	26.581	.000
	R^2	.645				
	ΔR	.645				
	F	180.489				

Source: Researcher (2019)

Moderating Effect of Innovative Behaviour on E-Banking Technology Characteristics and E Banking Technology Adoption

Hypothesis H₂ stated that innovative behaviour has no moderating effect on e banking technology characteristics and adoption. The control variables (gender, age and education) were included in the model. Age ($\beta=.044$ $p<.05$) as a control variable significantly affected e banking technology adoption while gender ($\beta=. -043$, $p>.05$) and education ($\beta=-.030$ $p>.05$) were insignificant. Furthermore, e-banking technology characteristics had a positive and significant effect ($\beta=.645$, $p<.05$) on e-banking technology adoption while innovative behaviour had a positive and significant effect ($\beta=.202$, $p<.05$) on e-banking technology adoption. However, innovative behaviour did not moderate the relationship between e-banking technology characteristics and e-banking technology adoption. The model explains 66.6% of the variance between e-banking technology characteristics and e-banking technology adoption with ($R^2=.666$, $\Delta R^2=.000$, $F=131.486$, $p<.05$). Additionally, innovative behaviour had no contribution to the model as indicated in table 6 the regression coefficient of the interaction term of e-banking technology characteristics and innovative behaviour is ($\beta=-.026$, $p=.499$). The beta weight suggests that the interaction of e-banking technology characteristics and innovative behaviour had no effect on e-banking technology adoption, hence the influence was not significant. Therefore, innovative behaviour does not significantly moderate the relationship between e-banking technology characteristics and e-banking technology adoption. Thus, we fail to reject this hypothesis.

Table 6: Moderating effect of innovative behaviour on E banking technology characteristics and adoption

Variables	Model 1 Coeff	(ETA) <i>pv</i>
Gender	-.043	.472
Age	-.044	.040*
Education	-.030	.144
E banking technology characteristics	.645***	.000
E banking technology adoption	-	-
Innovative Behaviour	.202***	.000
E banking techno char ×Innovative behavior	-.026	.499
R ²	.666	
ΔR ²	.000	
F	131.486	.000

Source: Researcher (2019). Note: * $p<.05$, ** $p<.01$, *** $p<.001$

DISCUSSION

In testing for hypothesis 1, the study anticipated that e-banking technology had no significant relationship with e-banking technology adoption. The findings from this study reveal that e-banking technology characteristics have an effect on e-banking technology characteristics adoption. The findings are supported by literature and past research findings. For instance, (Tobbin & Kuwornu, 2011) combined TAM and DoI to investigate key factors that influenced Ghanaian consumers' acceptance and use of mobile money transfer. Perceived ease of use and perceived usefulness were found to be the most significant determinants of behavioural intention to use mobile money transfer in Ghana. Perceived trust, trailability and perceived risk were also found to

significantly affect behavioural intention. Kiwanuka and Machethe (2016) examined the key innovation drivers in the adoption of e-banking practices in Kenya: a case study of NIC Bank Kenya Ltd. The study found that innovation for convenience, innovation for ease of use, innovation for safety, and innovation for reliability are fundamental in driving adoption of e-banking practices. Past research had found that relative advantage of an innovation was positively related to the rate of adoption (Rogers, 2003). Research suggested that when people perceive usefulness of a new technology over an old one, they tend to adopt it while benefits such as immediacy, convenience and affordability to customers influenced adoption in the context of mobile banking (Lin, 2011). Their findings by (Karjaluoto et al., 2010) showed that compatibility, perceived usefulness, and risk were significant factors that affected the adoption of M-banking.

The results from the study further indicated that innovative behaviour had no moderating effect on e-banking technology characteristics and e-banking technology adoption. Age as a control variable significantly affected e-banking technology adoption. The explanation could be that for any technology to be adopted, there are many factors that necessitate the adoption process, as has been posited by Rogers, (2003). Adoption is a decision of full use of an innovation as the best course of action available. On the other hand, rejection is a decision not to adopt an innovation, which, in this case, might be that e-banking technology characteristics might not necessitate e-banking technology adoption. The current research findings therefore confirm that innovative behaviour does not moderate the relationship between e-banking technology characteristics and e-banking technology adoption. Based on the findings of the study, we argue that the moderating effect of innovative behaviour on the relationship between e-banking technology characteristics and e-banking technology adoption in the study provides new knowledge in the entrepreneurship research field.

CONCLUSION

From the study results, e-banking technology characteristics had a positive and significant effect on e-banking technology adoption. The moderating effect of innovative behaviour on the relationship between e-banking technology characteristics and e-banking technology adoption was insignificant. Since the relationship was negative, an increase in innovative behaviour leads to a decrease in both e-banking technology characteristics as well as e-banking technology adoption. Therefore, innovative behaviour manifests no moderation with regard to e-banking technology characteristics and e-banking technology adoption. The findings of this study can assist entrepreneurs to make decisions with regard to adoption of e-banking system due to its benefits as well as ease of use. The findings of this study further provide an insightful explanation to entrepreneurs to embrace emerging technologies such as e-banking technology in their enterprises as part of their strategy towards obtaining competitive advantage over their competitors.

RECOMMENDATIONS

The above conclusions show that the government and the policy makers should formulate regulatory requirements to make entrepreneurs switch from cash to e-banking technology. This will in turn change the mind-set of the entrepreneurs to see technology adoption as a positive move towards enterprise performance. The study also recommends that service providers of e-banking technology should put in place

measures to ensure that they safeguard, enhance and introduce online financial support systems that are appropriate in the market in order to support entrepreneurs to accept the adoption process of new technologies in their enterprises.

REFERENCES

- Afshan, S., & Sharif, A. (2016). Acceptance of mobile banking framework in Pakistan. *Telematics and Informatics*, 33(2), 370-387.
- Aladwani, A. M. (2001). Online banking: a field study of drivers, development challenges, and expectations. *International journal of information management*, 21(3), 213-225.
- Ashourizadeh, S., Chavoushi, Z. H., & Schött, T. (2014). People's confidence in innovation: a component of the entrepreneurial mindset, embedded in gender and culture, affecting entrepreneurial intention. *International Journal of Entrepreneurship and Small Business*, 23(1-2), 235-251.
- Bayero, M. A. (2015). Effects of Cashless Economy Policy on financial inclusion in Nigeria: An exploratory study. *Procedia-Social and Behavioral Sciences*, 172, 49-56.
- Blattman, C., Fiala, N., & Martinez, S. (2014). Generating skilled self-employment in developing countries: Experimental evidence from Uganda. *The Quarterly Journal of Economics*, 129(2), 697-752.
- Borland, A. M., Barrera Zambrano, V. A., Ceusters, J., & Shorrocks, K. (2011). The photosynthetic plasticity of crassulacean acid metabolism: an evolutionary innovation for sustainable productivity in a changing world. *New Phytologist*, 191(3), 619-633.
- CBK, C. (2010). Bank supervision annual report: Central Bank of Kenya Nairobi.
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS quarterly*, 319-340.
- Dess, G., & Lumpkin, G. (2005). Entrepreneurial orientation as a source of innovative strategy. *Innovating strategy process*, 1, 3-9.
- Gikandi, J. W., & Bloor, C. (2010). Adoption and effectiveness of electronic banking in Kenya. *Electronic commerce research and applications*, 9(4), 277-282.
- Halim, H. A., Ahmad, N. H., Ramayah, T., & Hanifah, H. (2014). The growth of innovative performance among SMEs: Leveraging on organisational culture and innovative human capital. *Journal of Small Business and Entrepreneurship Development*, 2(1), 107-125.
- Haroon Hafeez, M., Shariff, M., Noor, M., & Mad Lazim, H. (2012). Relationship between entrepreneurial orientation, firm resources, SME branding and firm's performance: is innovation the missing link? *American Journal of Industrial and Business Management*, 2(04), 153-159.
- Karjaluoto, H., Koenig-Lewis, N., Palmer, A., & Moll, A. (2010). Predicting young consumers' take up of mobile banking services. *International Journal of Bank Marketing*.
- Khalifa, M., & Cheng, S. K. (2002). *Adoption of mobile commerce: role of exposure*. Paper presented at the Proceedings of the Annual Hawaii International Conference on System Sciences.
- Kiwanuka, R. N., & Machethe, C. (2016). Determinants of smallholder farmers' participation in Zambian dairy sector's interlocked contractual arrangements. *Journal of Sustainable Development*, 9(2), 230-245.
- Kole, E. (2000). Connecting Women from Developing Countries to the Internet: Searching for an.
- Laoye, J. (2011). Benefits of cashless economy by experts. Retrieved online at <http://www.zumalist.com> on the 10.
- Lee, C. M., & Swaminathan, B. (2000). Price momentum and trading volume. *the Journal of Finance*, 55(5), 2017-2069.
- Liedholm, C. E., & Mead, D. C. (2013). *Small enterprises and economic development: the dynamics of micro and small enterprises*: Routledge.
- Lin, H.-F. (2011). An empirical investigation of mobile banking adoption: The effect of innovation attributes and knowledge-based trust. *International journal of information management*, 31(3), 252-260.
- Lumpkin, G. T., & Dess, G. G. (1996). Clarifying the entrepreneurial orientation construct and linking it to performance. *Academy of management Review*, 21(1), 135-172.
- Masinge, K. (2011). *Factors influencing the adoption of mobile banking services at the Bottom of the Pyramid in South Africa*. University of Pretoria.
- Neuman, W. L. (2014). *Basics of social research*: Pearson/Allyn and Bacon.
- Nutley, S., Davies, H., & Walter, I. (2002). Conceptual synthesis 1: learning from the diffusion of innovations. *St Andrews: Research Unit for Research Utilisation, Department of Management, University of St Andrews*.
- Rawashdeh, A. (2015). Factors affecting adoption of internet banking in Jordan. *International Journal of Bank Marketing*.
- Rogers, E. M. (1995). Diffusion of Innovations: modifications of a model for telecommunications *Die diffusion von innovationen in der telekommunikation* (pp. 25-38): Springer.
- Rogers, E. M. (2003). Diffusion of innovations/everett m. rogers. NY: *Simon and Schuster*, 576.

- Rogers, E. M., & Singhal, A. (2003). Empowerment and communication: Lessons learned from organizing for social change. *Annals of the International Communication Association*, 27(1), 67-85.
- Sivabalan, P., Booth, P., Malmi, T., & Brown, D. A. (2009). An exploratory study of operational reasons to budget. *Accounting & Finance*, 49(4), 849-871.
- Sohail, M. S., & Al-Jabri, I. M. (2014). Attitudes towards mobile banking: are there any differences between users and non-users? *Behaviour & Information Technology*, 33(4), 335-344.
- Soininen, J. S., Puumalainen, K., Sjögrén, H., Syrjä, P., & Durst, S. (2013). Entrepreneurial orientation in small firms—values-attitudes-behavior approach. *International Journal of Entrepreneurial Behavior & Research*.
- Tidd, J. (2006). A review of innovation models. *Imperial College London*, 16.
- Tobbin, P., & Kuwornu, J. (2011). Adoption of mobile money transfer technology: structural equation modeling approach. *European Journal of Business and Management*, 3(7), 59-77.
- Wang, L., Rau, P.-L. P., & Salvendy, G. (2011). Older adults' acceptance of information technology. *Educational Gerontology*, 37(12), 1081-1099.
- Waterman, H., Marshall, M., Noble, J., Davies, H., Walshe, K., Sheaff, R., & Elwyn, G. (2007). The role of action research in the investigation and diffusion of innovations in health care: the PRIDE project. *Qualitative Health Research*, 17(3), 373-381.
- Wolfe, R. A. (1994). Organizational innovation: Review, critique and suggested research directions. *Journal of management studies*, 31(3), 405-431.
- Woodward, R. (2009). *The organisation for economic co-operation and development (OECD)*: Routledge.