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DETERMINANTS OF M-PESA PAYBILL ADOPTION AMONG SAFARICOM M-PESA CUSTOMERS IN MIGORI TOWN, KENYA

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ABSTRACT

The study sought to investigate the determinants of M-Pesa pay bill adoption in Migori Town. The research objectives were to investigate the effect of literacy level on M-Pesa pay bill adoption, the effect of customer awareness on M-Pesa pay bill and the effect of perceived security on M-Pesa pays bill adoption. It was expected that the adoption of M-Pesa pay bill would reduce the institutions overhead cost, queue and reduce time wastage used while travelling to the institutions, though the observation reveals that majority still prefer paying bills directly over the counter. The specific objectives include; establishing the relationship between the literacy level, awareness level and perceived security and M-Pesa pay bill adoption in Migori Town. Explanatory design was appropriate as it allowed the researcher to collect data from respondents and make inferences from the data. Data was analyzed using Multi-Regression tests generated from SPSS version 23. From the study findings, literacy level had a negative effect on M-Pesa pay bill adoption with coeffienct of -0.268 and p-value of 0.00, while customer awareness had positive effect on M-Pesa pay bill adoption with beta coeffiecient of 0.278 p-value of 0.00. However perceived security had no significantly effect on M-Pesa pay bill adoption with p-value more than 0.05. It is important for safaricom to improve on the M-Pesa pay bill user interface. Customers should understand the risk areas and the precautions set by the institutions to protect the users.

Keywords: *m-pesa, paybill*

I. INTRODUCTION

Mobile money providers such as Safaricom, Airtel and others, develop new services to satisfy their clients and create new adopters to use the technology. Such innovation includes M-Pesa and M-Pesa pay bill technology in the mobile money sector. Despite the availability of devices that support M-Pesa pay bill, people are yet to adopt the services due to challenges that are yet to be investigated deeply (Safaricom, 2017). Fishbein and Ajzen (1988) suggest that one's attitude determines whether one may or may not adopt the technology. Amin (2010) added that social influence as a factor shaping people attitude in the social class is very effective. The social influence includes awareness of the idea through social class. Davis (1989) found that comforts when using technology use and benefits offered by the technology, determines the technology adoption. The more technology makes work easier the more people will adopt it.

The major objectives of introducing M-Pesa pay bill was to reduce congestions in the institutions and improve service delivery. Introducing M-Pesa pay bill was strategically proposed to reduce organizational overhead cost, ensure efficient management of cash flow, to improve customer service delivery, however challenge that organizations adopted mobile money, while the intended users were not adopting (Safaricom, 2009). Despite the availability of devices that support M-Pesa pay bill, people are yet to adopt the services due to challenges that are yet to be investigated deeply (Safaricom, 2017)

II. Theories of Technology Adoption

Theory of Reasoned Action (TRA) originated from Fishbein and Ajzen (1988). TRA Theory argues that there is correlation between behavioral intention and individual's action. Behavioral intention is the attitude attained voluntarily through process of convincing one to either change the behavior or maintain the same behavior. From this theory one may derive an argument that for any behavior there must be some things that first shape the attitude. Shaping attitude may demand for awareness. Fred Davis (1989) proposed Technology Acceptance Model theory in his Ph.D. class work. The TAM theory consist of two independent constructs, perceived comfort to use and perceived value of the technology in terms advantages to determines technology adoption. Rogers (1983) is the proponent of innovation diffusion theory; the theory is based on the Gaussian distribution where the greatest value is at the center, this means the information will pass to the people at center of the social class. As the information passes over, it multiplies too many people in the social class. It was later modified by Rogers (2003), who conceptualized how technology gained momentum through social systems. The adoption of one person's idea passes on to many through diffusion.

III. DATA AND METHODOLOGY

This study adopted an explanatory survey design. The randomly sampled population was undertaken within the town, market places, juakali places where Safaricom M-Pesa has staged their M-Pesa agents. Questionnaires were given to Safaricom agents circulated within Migori town. Out of the 400 questionnaires of which were sent out, 255 questionnaires were returned. Cronbach's alpha was used to determine data reliability. In this study Cronbach Alpha obtained is 0.5 for all the independent variable and dependent variable. Hence the data collected are slightly consistency. To ensure the content validity is attained, questionnaires were cross-checked for completeness and pilot testing conducted to reveal the mischief. Face validity was checked by presenting the questionnaire to the two experts assigned during the research proposal stage. The study applied multiple regression analysis since it enables a researcher to predict the value of one variable based on the value of two or more other variables.

IV. RESULSTS AND DISCUSSION

To check the correlation for the independent variables and dependent variable Pearson's product Moment Correlation Coefficient was conducted, the results shown in (table 1). M-pesa pay bill adoption is negatively correlated to literacy level (r = -0.330and p value 0.000) meaning that as literacy level increases M-Pesa pay bill adoption decrease. Awareness level was positively correlated to M-Pesa pay bill adoption (r = 0.339 and p value 0.000) this means that as awareness level increases, m-pesa pay bill adoption increases. Perceived security is insignificant to M-Pesa pay bill adoption (r = 0.163 and p value 0.10).

Table 1: Pearson's Product Moment Correlations Coefficients

	M-Pesa pay bill adoption	Literacy level	Awareness level	Perceived security
M-pesa pay bill adoption	1			
Literacy Level	-0.33**	1		
Awareness level	.339**	.071	1	
Perceived security	.163	.087**	0.342**	1

** Correlation is significant at the 0.01 level (2-tailed)
(Source: Survey Data)

The study hypotheses were tested using multiple regression analysis to determine the relationship between literacy level, awareness level and perceived security on M-Pesa pay bill adoption. R in (table 4.3) shows the correlation between the observed and the predicted values of dependent variable. R value in (table 4.3) is 0.497 which shows that there is moderate correlation between what was observed and what was predicted before the research was done. R square shows how much of change in the m-pesa pay bill adoption variable is accounted for by the changing literacy level, customer awareness level and perceived security, where 24.7% change of the m-pesa pay bill adoption is significantly explained by the changes in literacy level, customer awareness level and perceived security, otherwise 75.3% is explained by other independent variables not included in this study (table 2).

Table 2: Multi-Regression Model Summary

Model	R	R square	Adjusted R square	Std. error of the estimate	Durbin-Watson
1	.497[a]	.247	.238	.68003	1.284

(Source: Survey Data)

a. Predictors: (Constant), Perceived Security, Literacy level, Awareness level
b. Dependent Variable: M-Pesa pay bill adoption

To show the joint significant of the independent variables, F statistics was used. F statistics shows incase Literacy level, customer awareness level and perceived security are jointly insignificant or significant and whether the regression model occurs by chance or not. The results shows the variance explained by independent variables is 37.345 while the variance not explained by the same variables is 113,759, P value is less than 0.05 (table 4). This means our predictors (literacy level, awareness level and perceived security) are able to account for a significant amount of m-pesa pay bill adoption) hence the regression model is significant (F (37.345, 113.759) =26.919 $P< 0.05$, $R^2 = 0.247$).

Table 4: Regression ANOVA (Analysis of Variance)

Variable		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	37.345	3	12.448	26.919	.000[b]
	Residual	113.759	246	.462		
	Total	151.104	249			

(Source: Survey Data)

a. Dependent Variable: M-Pesa pay bill adoption
b. Predictors: (Constant), literacy level, awareness level, perceived security

The finding on regression coefficients shows that literacy level is significant to m-pesa pay bill adoption and the null hypothesis was rejected (β_1 = -0.268, p-value =0.000). Hence, increase in literacy level decreases m-pesa pay bill adoption rate (table 4.5). The finding was supported by Njenga (2013), Jack (2013) and Seckfall (2015) and opposed by Margaret (2013).

The findings for the second objective show that customer awareness is significant to m-pesa pay bill adoption and the null hypothesis was also rejected (β_1 = 0.278, p-value =0.000) (table 5). This implies that increase in customer awareness level will increases M-Pesa pay bill adoption. The findings was supported by Namirembe (2007), Agwu (2014) and opposed by Bauer (1967) who believes on the nature of information, and concluded that if information is negative then awareness level will impact negatively to technology adoption.

Perceived security has no significant effect to m-pesa pay bill adoption, where the null hypothesis was accepted (β_1 = 0.076, p-value =0.181 which is more than α =0.005) (table 5). Therefore, security issues have no effect on m-pesa pay bill adoption. The findings was supported by the work of Sathye (1999), Oluoch (2012) and Hong (2012) all these scholars pegged security effect on the institutions not individual users, but opposed by Amin (2010).

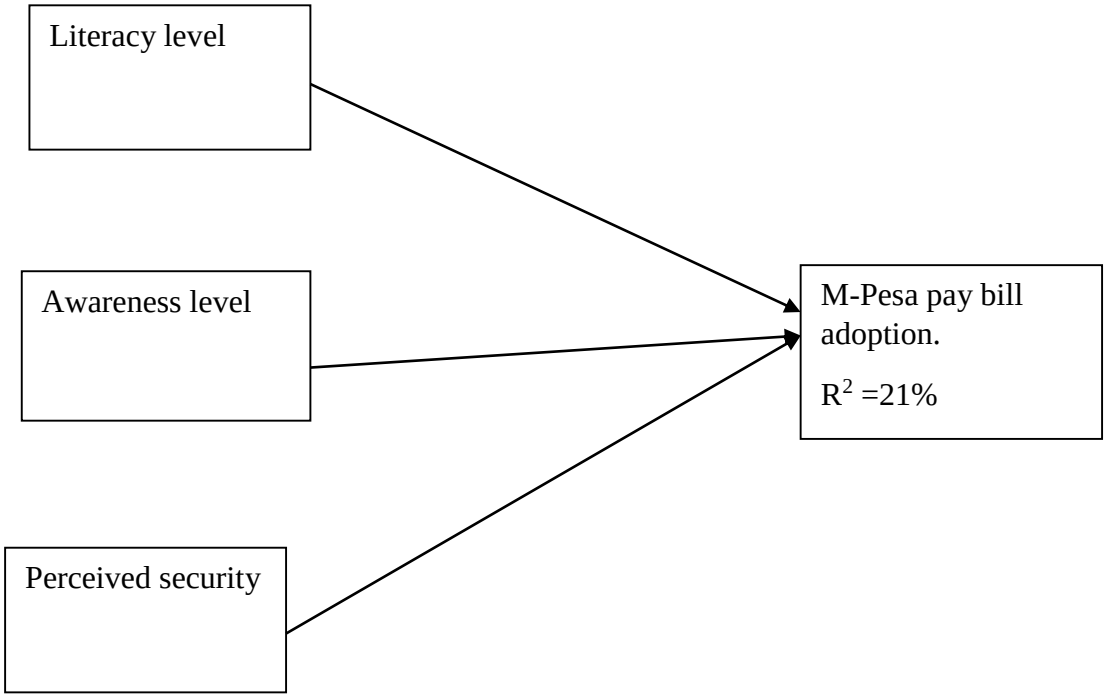
Table 5: Regression Coefficients

Model		**Unstandardized Coefficients**		**Std. Coefficients**	**T**	**Sig.**
		B	Std. error	Beta		
1	(Constant)	2.831	.246		11.520	.000
	Literacy level	-.268	.041	-.362	-6.503	.000
	Awareness level	.278	.048	.339	5.746	.000
	Perceived Security	.076	.057	.079	1.342	.181

(Source: Survey Data)

a. Dependent Variable: M-Pesa pay bill adoption

Figure 1: Analyzed Research Model



V. CONCLUSION

From the results, it is important for safaricom to improve on the M-Pesa pay bill user interface; this will attract the learned class when the user interface is easy to handle. Safaricom need to improve on network to ensure that hanging and delayed feedback that agitate the users are either reduces or done a way with. The uncertainty caused by delayed feedback message seems to disturb the learned than the illiterate. Though the illiterate are curious and take prestige of using M-Pesa pay bill platform.

Customers should understand the risk areas, and the precautions set by the institutions to protect the users. The institutions should engage more on risk management to ensure that people only get positive information about the institutions using M-Pesa pay bill. This will entrust customers faith on institutions using M-Pesa pay bill platform. The institutions and Safaricom should conduct more of M-Pesa pay bill services and benefits awareness campaign on local radios and televisions for the poor and illiterate to get to know, what M-Pesa pay bill offers. Each company using M-Pesa pay bill platform should ensure that security measures are well taken care of, to sustain the use of M-Pesa pay bill by their customers.

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REFERENCES

Agwu, E. C., & Adele, L. (2014). Mobile banking in Nigeria: Benefits, problems and prospects. International Journal of Business and Commerce, 3, 50-70.

Ajzen, I. (1988). Attitudes personality and behavior. Chicago: Dorsey press.

Aker, J. A. (2010). M (Aker, 2010)mobile phones and Economic Development in Africa. Retrieved from https://dx.doi.org.

Al-Ashban, A. A. (2001) (Aker, 2010). Customer adoption of tele-banking technology. International Journal of Bank Marketing, 19, 191-200.

Amin, & Ramayah, (2010). Impact on adoption of mobile banking. technology .

Bauer, R. (1967). Risk taking and information handling in consumer behavior. Cambridge: Havard University.

Black, N. (2001). Modelling consumer choice of distribution channels :An illustration from financial services. International Journal of Bank Marketing. 20, 390-398.

Blumberg, B. A. (2008). Business Research Methods (2 ed.). London: Mc Graw-Hill.

Cruz, P. L. (2011). Mobile banking rollout in emerging markets: Evidence from Brazil. International Journal of Bank marketing, 28, 342-371.

Cull, R. (2010). M-pesa: Mobile payments, improved lives for Kenyans. Research at the World Bank .

Davis, F. (1989). Perceived usefulness, perceived ease of use and acceptance of information technology. IS Quarterly , 13, 318-339.

Featherman, M. (2001). Extending the technology acceptance model by inclusion of perceived risk. Association for Information System , 148.

Forrester Research. (2013). Forrester.com. Retrieved from https://www.forrester.com

Gates, I. M. (2010). Mobile Payments go viral M-Pesa in Kenya. Safaricom .

Gopi, ,. R. (2007). Applicability of the theory of planned behavior, in prediction intention to trade online some evidence from the developing country. International Journal of Emerging Markets, 2, 348-360.

Greener, S. (2008). Business Research Methods. Ventus Publishing:

Hanafizadec, P. & Koshksarey, A. A. (2014). Mobile banking adoption by Iranian bank clients. Telematics and Informatics, 31, 62-78.

Hayness, D. (2002). Internet management. Idea Group.

Hong, Z. L. (2012). Influence of perceived risk in consumer online purchasing decision. SciVerse Science Direct, 24, 1304-1310.

Hughes, N. (2013). M-PESA: Mobile money for the "unbanked" turning cellphone into 24- hour tellers in Kenya. Innovation Technology Governance Globalization , 63-81.

Jack, W. (2013). The economics of M-Pesa : Mobile money for unbanked turning cellphone into 24-hour tellers in Kenya. Innovations: Technology, Governance, Globalization .

Karunya School of Management. (2014). Factors Influencing Consumers Adoption of Internet Banking in India.

Kothari, C. (2004). Research Methodology.

Laforet, S. X. (2005). Consumers attitude towards online and mobile banking in China. The International Journal of Bank Marketing, 23, 362-378.

Lee, M. (2009). Factors influencing the adoption of internet banking. Electronic Commerce Research and Applications, 8, 130-140.

Lwanga, M. M. (2016). Mobile money and individual saving. Economic Policy .

Margaret, M. (2013). Socio-demographic factors influencing adoption of internet banking in Zimbabwe. 15.

Masamil, B. (2014). international journal of network security. state of mobile banking in Tanzania and security (6).

Masinge, K. (2010). Factors influencing the adoption of mobile banking services at bottom of the pyramid South Africa. Gordon Institute of Business Science, Business Science.

Migori County. (2013). Migori County Integrated Development Plan 2013-2017.

Miller B. & Robert L (2003).The A-Z of Social Research, London

Namirembe, E. (2007). Influence of ICT on the banking industry. The Case of Kampala .

Ndubisii, ,. A. (2007). Consumer attitudes, systems characteristics and internet banking adoption in Malaysia. Management Research News, 1, 16-27.

Newby, P. (2010). Research Methods for Education.

Njenga, A. D. (2014). Mobile phone banking.

Okenyuri, N. (2015). Effect of security of mobile phone bill payment system on efficiency of customer bill payment. International Journal of Arts and Commerce, 4.

Okoegwale. (2008, July 22). challenges of Nigeria Mobile Banking. Nairaland Forum .

Oluoch, R. A. (2012). Factors affecting adoption of mobile banking technology in Kenya. Asian Journal of Business and Management Sciences, 2, 1-13.

Polatoglu, V. A. (2001). An emperical investigation of the Turkish consumers acceptance of internet banking services. International Journal of Bank Marketing, 19, 156.

Porteous, D. (2006). The enabling environment for mobile banking in Africa. Reports Commissioned by Department for International Development, 3, .

Radcliffe, I. M. (2011). Mobile payments go viral M-pesa in Kenya.

Rajaseke, S. P. (2006). Research Methodology. Taminada, India.

Rodgers, E. M. (1962). Diffusion of innovations. New York: The Free Press.

Rogers, E. (1983). Diffusion of innovations. New York: Free Press.

Rogers. (2003). Diffusion of innovations. New York: Free Press.

Rumanyika, J. D. (2015). Obstacles towards adoption of mobile banking in Tanzania. International Journal of Information Technology and Business Management, 35,.

Safaricom. (2017). Safaricom Annual Report .

Safaricom Ltd. (2014, March-May). Lipa na M-PESA. Safaricom M-PESA Newsletter, 17.

Safaricom. (2014). M-pesa Assessment and Annual report. Annual report .

Safaricom. (2009). M-pesa Customers to withdraw from Pesa point ATMS. Retrieved from http://www.safaricom.co.ke

Sathye, M. (1999). Adoption of internet banking by Australian consumers. Journal of Bank Marketing, 17, 324-334.

Saunders, M. T. (2009). Research Methods for Business Students (5 ed.). Pearson Education Limited.

SeckFall, F. (2015). Analysing the mobile banking adoption process among low income population. Economic Bulletin, 35,.

Tanzania Investo. (2016, June 23). Retrieved from https://www.tanzaniainvest.com

Taylor, S. T. (1995). Assessing IT usage. MIS Quarterly , 19, 561-570.

Venkatesh, V. (2000). Determinants of perceived ease of use. Information System Research, 11.

Zumbo, B. (2000). Scale of measurement and the relationship between parametrick and Non parametric statistical tests. Advances in Social Science Methodology .