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IMPACT OF MOBILE BANKING ON CUSTOMER SATISFACTION: A STUDYWITH SPECIAL REFERENCE TO ADDIS ABABA, ETHIOPIA

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ABSTRACT

The purpose of this study expected to add to the existing knowledge in the electronic banking field of study. To help the banks and policymakers have a better understanding of the Mobilebanking dimensions and their contributions towards customer satisfaction. Especially since not much research has been done in this regard in Addis Ababa, Ethiopia, which has becomethe hub of e-banking development after the recent demonetization by the present government, enabling people to go cashless and enhance a digital economy. A descriptive survey with the help of a Likert based questionnaire was conducted to investigate the impactof Mobile Banking service on customer satisfaction in Addis Ababa. Multi-stage sampling wasused and various kinds of Mobile banking customers were approached in Addis Ababa. Data were collected from a sample of 450 Mobile banking customers.The major finding was that there is a significantrelationship between customer satisfaction and Mobile banking service in Addis Ababa with related to Security, Privacy, Ease of use, Perceived usefulness, Accessibility and Awareness factors.

Keywords: Mobile Banking, E-Banking, Customer Satisfaction, Technology-based Options

INTRODUCTION

A customer is a person who brings us his/her wants and/orthe recipient of goods or services, products or ideas obtained from a seller, vendor, or supplier via financial transactions or exchanges for money or some other valuable considerations (Kotler, 2003). The strengths and the pillars of business organizations are their customers. The necessity for studying customer satisfaction arises because of the fact that in today's dynamic business environment, customers are 'Kings'. The organization's successes or failures are determined by the customers. Unless the organizations are able to satisfy their customers, they cannot survive and run their business in the world where the competition is very high. Chanderasekar (2010)stated that customer satisfaction is used to capture the idea of measuring how satisfied an enterprise customer is with the organization's effort in the market. Thus, satisfaction is the ultimate concern for organizations to sustain and to be profitable in the market.

Bowen and Hedges (1993) point out that more than 70 percent of the defection of customersin the financial service sector is due to the existing customer dissatisfaction. Meanwhile, dueto the advent of new products and options for various channel delivery through Information Technology (IT) application, service delivery has emerged as an important attribute in satisfying customers (Heskett et al. 1997). Girish and Preetha(1997) also argued that technology in banks would help to upsurge the level of yield and customer satisfaction.

Mobile banking is one of the technology in banking that has been growing at a rapid pace.It is true that Mobile banking helps banks cut costs, increase revenue and become more convenient and create a conducive environment for customers. Although the Mobile banking service is rapidly growing, there are factors like not using the advanced technology well and lack of awareness that leads customers to limited for widely using it. Therefore, keeping this in view, the study is aimed to assess the impact of Mobile banking on customer satisfaction with particular reference of at comparing customer satisfaction on e-banking in Trivandrum

and in Addis Ababa.

MOBILE BANKING IN ETHIOPIA

In Ethiopia, sixteen private and one state-owned commercial banks are operating until the end of December 2017. Despite a rapid increase in the number of financial institutions since financial liberalization, the Ethiopian banking system is still immature compared to the rest ofthe world (Biritu No. 120, 2015).Concerning mobile banking development in Ethiopia, even ifthere is an attempt, it is at theinitial stage. Ethiopian banks currently launch mobile banking systems that are used to access the core banking system within the bank. Hence, customers of a given bank can access some banking services via their mobile phones. Until 2012, there were only six commercial banks that had gotten alicense to operate mobile and agent banking services as per the Directives No. FIS /01/2012. As of December 2014, there are about 151,425 active number of mobile banking service customers in these six banks (Birritu no.119, 2015). Nevertheless, through time the number of banks that provide mobile banking services has increased. The mobile banking development in Ethiopia is not full-fledged in terms of thoroughly exploiting all the mobile services one can get although the number of mobile phone users has increased at analarming rate.

MOBILE BANKING SERVICES:

Mobile banking is the act of doing financial transactions on a mobile device (cell phone, tablet, etc.). This activity can be as simple as a bank sending fraud or usage activity to a client's cell phone or as complex as a client paying bills or sending money abroad. Mobile banking is usually available on a 24-hour basis. In these days, mobile banking services classified into three types.

A. Mobile Banking over Wireless Application Protocol (WAP): - It is a service that allows accessing bank account details and transacting over the internet through a mobile banking application. Now-a-days Mobile Banking is using either mobile data services (2G, 3G or even 4G in certain regions) or Wi-Fi. Mobile banking applications are optimized for iOS, Android and Blackberry phones.

B. Mobile Banking over SMS: - Mobile Banking via Short Message Service (SMS) services, it does not require downloading any application; it is the most common types of mobile banking service. SMS services are available on all phones whether smartphone or not, with or without General Packet Radio Service (GPRS) connectivity. As Mobile Banking via SMS works like any other SMS service. To get updates on customers' bank account, it required to **send a text message** to a specified number and receive instant replies as per customer request.

C. Mobile Banking over Unstructured Supplementary Service Data(USSD): - A convenient form of Mobile Banking based on Unstructured Supplementary Service Data (USSD) was introduced targeting the rural areas. The services of Mobile Banking through USSD can be reached any individual with any mobile phone whether smartphone or not, with or without a GPRS connection. Mobile Banking over USSD, contrasting with the SMS, is based on real-time interaction between a customer and the bank. Though the service is free of charge from the bank, other charges by the mobile network provider may be applicable.

TECHNOLOGY-BASED OPTIONS

Technology is a fundamental source of competitiveness in the banking industry since it reduces labor-intensive activities and processing costs, whilst fostering innovation and more delivery systems that are convenient for the users. In this study, the researcher attempt to emphasize those options would be getting by the use of technology as a delivery channel through Mobile Banking. Thus, Security, Privacy, Ease of use, Perceived usefulness, Accessibility and Awareness were used as Technology-based Options in this particular research.Hence, this particular study emphasized the attributes as technology-based option of **Security**: a person wants to safeguard their own money and banks their own exposure and **Privacy**: is the bank's duty of confidentiality protections all customers' information about their accounts. According to Davis, et, al., (1989), perceived **ease of use** designates that the degree to which a person considers that using a particular system would be free of effort. Besides, **Perceived Usefulness**also wereenlightened that the subjective probability that using the technology would improve the way a user could complete a given task. Another measurement technology based option dimension for customer satisfaction on Mobile Banking is **Accessibility**: it is the simplicity with which individual can locate a specific productor service. This is closely related to **Awareness**: is knowledge of something existing to implement or uses the existing products.

OBJECTIVE OF THE STUDY

The study seeks to:

I. Examine the relationship between customer satisfaction and Mobile banking servicesin specific Technology-Based option dimensions in Addis Ababa, Ethiopia.
II. Identify the predictive factors of customer satisfaction on Mobile banking services in Addis Ababa, Ethiopia.

HYPOTHESISOF THE STUDY

Based on the above objectives, the following hypothesis wasproposed for this study:

Ho1. There is no significant relationship between customer satisfaction and Mobile bankingrelated to Technology-Based Option dimensions in Addis Ababa, Ethiopia;

Sub-hypotheses

Ho1 a: There is no significant relationship between customer satisfaction and Mobile banking related to Security.

Ho1 b: There is no significant relationship between customer satisfaction and Mobile banking related to Privacy.

Ho1c: There is no significant relationship between customer satisfaction and Mobile bankingrelated to Ease of use.

Ho1 d: There is no significant relationship between customer satisfaction and Mobile bankingrelated to Perceived usefulness.

Ho1 e: There is no significant relationship between customer satisfaction and Mobile bankingrelated to Accessibility.

Ho1 f: There is no significant relationship between customer satisfaction and Mobile bankingrelated to Awareness.

METHODOLOGY

Research methodology deals with a scientific and systematic method that can be adopted to solve research problems. The present study carried out to gain an insight into the customer satisfaction level with the Mobile Banking services provided by commercial banks in Addis Ababa, Ethiopia. The descriptive research design was employed through a survey approach.Multi-stage sampling techniques were used. The sample was used from the six banks' customers ofcommercial banks' in the Addis Ababa city. The data were collected in the questionnaire. Questionnaires were distributed for 450 respondents and 410 questionnaires were completed and used for the analysis. The questionnaires were administered through convenience sampling. Primary data were entered into the SPSS and analyzed by using inferential statistics.

CORRELATION ANALYSIS

Correlation analysis helps define the direction of the relationship between the variables and used mainly to evaluate the magnitude (between -1 and +1) and also helps gain insight into the strength of their relationship.

Table 1: Summary of Correlation Coefficients

		SC	PR	EU	PU	AC	AW	CS
SC	Pearson Correlation	1						
	Sig. (2-tailed)							
	N	410						
PR	Pearson Correlation	.397*	1					
	Sig. (2-tailed)	.012						
	N	410	68					
EU	Pearson Correlation	.906**	.704**	1				
	Sig. (2-tailed)	.000	.004					
	N	410	410	410				
PU	Pearson Correlation	.314*	.453**	.691**	1			
	Sig. (2-tailed)	.020	.005	.006				
	N	410	410	410	410			
AC	Pearson Correlation	.459**	.581**	.485**	.825**	1		
	Sig. (2-tailed)	.000	.000	.000	.000			

	N	410	410	410	410	410		
AW	Pearson Correlation	.864**	.802**	.214*	.814**	.819**	1	
	Sig. (2-tailed)	.000	.000	.031	.000	.000		
	N	410	410	410	410	410	410	
CS	Pearson Correlation	.711**	.812**	.786**	. 724**	.862**	.852**	1
	Sig. (2-tailed)	.003	.000	.000	.000	.000	.000	
	N	410	410	410	410	410	410	410

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Source: Primary Data, 2017

Note: SC – Security, PR – Privacy, EU – Ease of Use, PU – Perceived Usefulness, AC – Accessibility, AW – Awareness, CS –Customer Satisfaction.

The above table 1 shows that the simple bi-variant correlations between various variables under study. It was explained that the dependent variable (Customer Satisfaction) was found to be significant ($p<0.01$) associated positively with the independent variables (Security, Privacy, Ease of use, Perceived usefulness, Accessibility and Awareness). The significant association between the dependent variables and the independent variables was reported from higher to lower as follows:Accessibility(0.862), Awareness(0.852), Privacy(0.812), Ease of Use (0.786),Perceived Usefulness (0.724),and Security (0.711) correlate with significant at the 0.01.

The result of correlation indicated that the correlation between the dependent variable and Accessibilitywas positively correlated ($r=0.862$, $p<0.01$) which is highly correlated than the other variables. This suggests that use of Mobile banking will not effectively unless they are accessing the service 24/7.So, Accessibilitycan highly positively associate with the Mobile banking service than the other independent variables. Moreover, all the independent variables were found to be a positive correlation with dependent variables. Those correlationsshow that the constructs are both conceptually and empirically distinct from each other and together determine the strong predictive power as a result of the present study.

MULTIPLE REGRESSION ANALYSIS

MultipleRegressionsare used to calculate that whether there is a positive or negative relationship between the dependent and independent variables.

The following tables present the results from the liner multiple regressions carried out using the six variables: Security, Privacy, Ease of use, Perceived usefulness, Accessibility and Awareness,and Customer Satisfactionas the dependent variable. This was done to determine the best linear combination of the variables for predictingthe customer satisfaction on Mobile Banking services.

Table 2: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.786[a]	.618	.577	.2839

a. Predictors: (Constant), Security, Privacy, Ease of use, Perceived usefulness,Accessibility and Awareness

Source: Survey data, 2017

Model summary (table 2) of output is very important in describing overall relationships between dependent and independent variables (R), goodness of fit (R square) and the standard error of estimate.

In order to determine the strength of therelationship between those variables**,** a value of R which is assumed to be 0.786 was established to show that the relationship between dependent and independent variable is very strong. Results have shown that 78.6% variations are caused by theindependent variable.

Similarly, R^2 value shows us how close the data are to the fitted regression line. Thus, the overall predictability of the model is shown in the above table. The R^2 value of 0.618 indicates that the model explains 61.8% of the attributes are responsible for overall customer satisfaction on Mobile Banking. It means that there exists a positive relationship between all independent variables and a dependent variable. Moreover, this model shows a figure of thestandard error of estimate i.e. 0.284, meaning that actual data is 28.4% dispersed from the regression line.

Table 3: ANOVA[a]

Model		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
1	Regression	36.542	6	6.0903	190.321	.000[b]
	Residual	16.541	404	.032		
	Total	53.081	410			

a. Dependent Variable: On the overall, I am satisfied with the performance of Internal Auditors

b. Predictors: (Constant), SC – Security, PR – Privacy, EU – Ease of Use, PU – Perceived Usefulness, AC – Accessibility, AW – Awareness, CS –Customer Satisfaction

Source: Survey data, 2017

Above ANOVA, table 3 has shown that P-value is much less than 0.01, meaning that there is asignificant impact on the variables. Hence, the model is accepted. So, it tells us that there isa strong impactonSecurity, Privacy, Ease of use, Perceived usefulness, Accessibility and Awarenessinorder to satisfy customers' on Mobile Banking service.

Table 4: Regression Model (Coefficients[a])

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.125	0.042		2.9762	0.016
	SC	0.152	0.037	0.167	4.1081	0.002
	PV	0.121	0.029	0.244	4.1724	0.000
	EU	0.196	0.053	0.061	3.6981	0.004
	PU	0.107	0.045	0.134	2.3778	0.022
	AC	0.219	0.043	0.316	5.0930	0.000
	AW	0.096	0.034	0.127	2.8235	0.019

a. Dependent Variable: On the overall, Customer Satisfaction

Source: Primary data Survey, 2017

Note: SC – Security, PR – Privacy, EU – Ease of Use, PU – Perceived Usefulness, AC – Accessibility, AW – Awareness, CS –Customer Satisfaction.

Customer Satisfaction on Mobile Banking = **f**(Security, Privacy, Ease of use, Perceived usefulness, Accessibility and Awareness) mathematically it can be written as:

Where,

Y = Customer Satisfaction on Mobile

BankingX1 = Security

X2 = Privacy

X3 = Ease of use,

X4 = Perceived

usefulnessX5 =

Accessibility

X6 = Awareness

There α is constant while βi are coefficients of estimates and e is the error term.

Y = α + β1x1 + β2x2 +β3x3 +β4x4 +β5x5 +β6x6 +eUsing the regression output from the above tables, estimated the following relationship model:

Y = 0.125 + 0.152X1 + 0.121X2+ 0.196X3 + 0.107X4 + 0.219X5 + 0.096X6TESTING THE HYPOTHESES

As depicted in the above model, all independent variables are useful to predict customer

satisfaction on Mobile Banking in the case of Addis Ababa, Ethiopia.Security (β = 0.152, P<0.05) was found to have a significant effect on the prediction of customer satisfaction on Mobile Banking.Hence, the result of the analysis stands for **rejecting** the **null hypothesis (Ho1 a),** which is "There is a significantrelationship between customer satisfaction and Mobile banking related to Security".It denotes that security is the main features of modern technology, which the lack of security may result in serious damages on customer satisfaction.

Regarding with the Privacyvariable shows the Beta values endorses that 0.121 and the p-values are shown 0.000 at 5 percent level of significant (p < 0.05). On this basis, **the Null Hypothesis (Ho1 b)**stands as **rejected,** which is there isthere is a significantrelationship between customer satisfaction and Mobile banking related to Privacy. Therefore, the analysis on the Privacy regarding with the relationships of the customer satisfaction of Mobile Banking indicates that there has found a positive and significant relation. It implies that privacy is directly affecting the satisfaction of customers on Mobile Banking.

Concerning with Ease of use variables the study was found that the Beta-value was 0.196 and the p-value wasless than 0.05 (P = 0.004). Hence, the result of the analysis stands for **Rejected** the **null hypothesis (Ho1 c)** that "there is no significant relationship between customer satisfaction and Mobile banking related to Ease of use". It implies that flexibility, user-friendly system and quickly do Mobile banking services 24\7 have an impact on the customer satisfaction on Mobile banking services.

Regarding with the Perceived Usefulnessvariable shows the Beta values endorses that 0.107 and the p-values are shown 0.022 at 5 percent level of significant (p < 0.05). On this basis, **the Null Hypothesis (Ho1 d)** stands as **rejected**.It implies that "There is a significantrelationship between customer satisfaction and Mobile banking related to Perceived usefulness". It implies that Perceived Usefulnessis affected Customer satisfaction in the perspectives of flexibility, speed, relevance, comfort and control of Mobile Banking services.

The result of the regression analysis in the above table 4, showsAccessibility had the majoreffect onthe Satisfaction of Customers on Mobile Banking Services. Accessibility of Mobile banking servicewith (β = 0.219, p < 0.05). The Beta value ofAccessibility is 0.219, whichindicates that 100% change in the performance of internal auditors leads to 21.9% change inoverall Customer satisfaction on Mobile Banking servicesat P-value 0.000, which implies thereis significant relation between Accessibility of Mobile Banking Services and Customer satisfaction. As a result of this, **Hypothesis** (**Ho1 e**) is **rejected**. It implies that "There is a significantrelationship between customer satisfaction and Mobile banking related to Accessibility". Therefore, accessibility of Mobile Banking services in terms of on access bank account on Mobile apparatusand access the quality of services have been a significant effect on customer satisfaction on Mobile banking service. Regarding with the Awarenessvariable shows the Beta values endorses that 0.096 and the p-values are shown 0.019 at 5 percent level of significant (p < 0.05). On this basis, **the Null Hypothesis (Ho1 f)** stands as **rejected**.It suggests that "There is a significantrelationship between customer satisfaction and Mobile banking related to Awareness". Hence, to enhance customer satisfaction on the Mobile Banking service,banks should be providing continuoustraining and support to the customers.

CONCLUSION AND SUGGESTIONS

This study assessed the impact of Mobile banking on the customer satisfaction with related to technology-based optiondimensions (Security, Privacy, Ease of use, Perceived Usefulness, Accessibility and Awarenessfactors). Based on the descriptive report, the study revealed that both the dimensions have been significantlyaffected to predict customer satisfaction on Mobile Banking service. This implies that the customer satisfaction of Technology-Based optionaffects overall customer satisfaction on Mobile Banking in Addis Ababa, Ethiopia.Therefore, new functionalities of a bank should push it up to continue to improve overall customers satisfaction on Mobile Banking based on Security, Privacy, Ease of use, Perceived usefulness, Accessibility and Awareness factors.

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