Determinants of E-Banking Services Adoption among Commercial Banks in Ethiopia: Analysis of Banks' Customers Perspectives

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Abstract- The prime objective of this study was to assess determinates of e-banking service adoption among commercial bank s in Ethiopia from the customers perspective. The researchers used cross sectional study was done on eleven commercial banks in Ethiopia. The study was a triangulation of both quantitative and qualitative research approach. The researchers were used primary source of data which is collected via questionnaire. Judgmental sampling was used to select 482 sample respondents with 20% non response rate. Accordingly, 450 questionnaires were returned with 93.4%response rate. The researchers used descriptive analysis and multiple linear regression models due to the continuous nature of dependent variable. The finding of the study revealed that cost, trust, privacy and security are significant determinants of e-banking service adoption among commercial banks in Ethiopia. The findings of this study would help the banking sectors and its customers to better understand their e-banking market segment, their perception and behaviors in relation to using e- banking services.

Index Terms: E - Banking, Adoption, Commercial Bank , Ethiopia

1. INTRODUCTION

In recent commercial phenomenon,internet technologies have essentially changed the way in which banks provide their services and customers conduct their banking needs. One of these technologies which have increasingly become a favored distribution channel by service providers and customers is electronicbanking (e-banking) services (Daraz et al. 2009).E-Banking as a banking channel allows customers to conduct all traditional banking services, such as making online bill payments, balance enquiry and fund transfer to other accounts without visiting their bank branch (Damanpour*et al*. 2003). Internet banking is considered as the cheapest distribution channel for standardized bank operations (Polasik andWisniewski 2009). Electronic banking allows customers easier access to financial services and time saving in managing their finance (Almazari and Siam 2008; Ayrga 2011; Tan and Teo 2000).

Indeed, the emergence of electronic banking has prompted many banks to develop marketing and information technology strategies in order to stay competitive. (Venkatesh et al.2003) noted that the successful implementation of information systems is dependent on the extent to which such a system is used and eventually adapted by the potential users. Information system implementation is in doubt if users are unmotivated to use such type of technology and thus it will not bring full

benefits to the organization. In order to bring full benefits, the organization should motivate customers regarding information system implementation. Similar to this, the bank should motivate the customers to use electronic banking services. Besides, banks must make key improvements that address the customers' worry. Therefore, it is necessary to identify the key factors influencing the adoption of electronic banking among the banking customers.

Previous research show that, banks which do not offer internet banking services are expected to lose more than 10% of their customers over the next five years due to their competitive advantages in banking service delivery will eroded(Tower Group 2005). By providing internet banking services as an alternative delivery channel, banks seek to lower operating costs by reducing their branch networks and downsizing the number of service staff, improve their banking services and customer satisfaction and retain their existing customers (Al-hajery et al. 2006; Almogbil 2005). Banks cannot achieve the benefits of internet banking unless customers accept and fully utilize its associated capabilities. (Al-Gahtaniand King 1999) state there will be little return from technological developments if customers fail to adopt and fully utilize its capabilities.

Technology acceptance, especially internet banking has become a vital issue in the business world today. Besides, understanding customers' requirements and meeting their demands and expectations regarding internet banking has become a challenge for banks. (Courtier andGilpatrick1999) recommend that banks must survey customers' requirements on a regular basis in order to identify the factors that influence their intention to accept and fully utilize internet banking services.

Internet Banking has been widely used in developed countries and is rapidly expanding in developing countries. Even though, Ethiopian were started to use Internet banking services lately, cash is still the most dominant medium of exchange. Besides, Internet banking systems adoption and utilizations are at its infant stage due to different factors.

In the face of rapid expansion of Internet banking systems throughout the developed and the developing world, Ethiopia's financial sector cannot remain an exception in expanding the adoption and use of e-banking system. Based on the above facts the researcher is highly motivated to see the determinants of E-banking service adoption in Ethiopian banking industry.

Therefore, the aim of this study is to assess the determinants of E-banking service adoption among commercial banks in Ethiopia.

1.2 Statement of the Problems

As different studies agreed on the importance of customer acceptance and fully utilizing internet banking services, the success of internet banking is determined not only by banks or government support, but also by customers' acceptance of it(Hosein2009). They also highlighted the crucial role of the comprehensive understanding of the factors that influence customers in adopting and using internet banking(Guriting and Ndubisi2006; Mols 1999).

(Sarigiannidis et al. 2013) found perceived usefulness, security risk and performance risk, perceived ease of use and quality of the internet connection seemed to have an indirect effect on internet banking adoption in Greece. (Almohaimmeed2012) revealed that perceived usefulness andservice visibility directly influence Saudi customers' intention to use internet banking in china.Moreover, perceived, trust, system reliability and accessibilitysignificantly influence perceived ease of use of internet banking. (Musiime and Ramadhan2011) reported as accessing account, usage , advantages accruing from the usage and use account were significant factors influencing customers adoption of e banking services in Uganda.(Gikonyo2014)revealed that gender difference, awareness, website features and security are the factors that influence the adoption of e-banking services Kenya.

In Ethiopia, although the e-banking service is infant compared to most neighboring countries, Bultum(2014) was reported as the security risk, lack of trust, lack of legal and regulatory frame work, Lack of ICT infrastructure and absence of competition between local and foreign banks are the challenges to adopt e- banking services. Besides, previous studies i n Ethiopiaarelimited toperceived benefits and challenges of e-banking adoption of private commercial banks and targeting only bank officials and bank employees as a study population which excluded customers' domain. Thus, this study examines the crucial factorssuch as trust, cost, security and privacy as the factor influencing customers' adoption of e-banking servicesamong commercial banks in Ethiopia. Therefore, the findings of this study aims to providea greater understanding on the crucial factors influencing customers` e banking service adoption and contribute to the

current body ofliterature on e-banking services. To achieve this objective the researchers adopt the following hypotheses:

H1: Trust has significant effect on users' adoption of e-Banking services among commercial bank customer in Ethiopia.

H2: Cost has significant effect on users' adoption of e-Banking services among commercial bank customer in Ethiopia.

H3: Privacy has significant effect on users' adoption of e-banking services among commercial bank customer in Ethiopia.

H4: Security has significant effect on users 'adoption of e-banking services among commercial bank customer in Ethiopia.

2. Objective

2.1. General objective

- To examine the determinants of e-banking service adoption among commercial bank customers in Ethiopia

2.2Specific Objectives

- To identify the influence oftrust on the adoption of e- banking services among commercial bank customers in Ethiopia
- To identify the influence of coston the adoption of e-banking services among commercial bank customers in Ethiopia
- To find out the influence of privacy on theadoption of e-banking services among commercial bank customers in Ethiopia
- To examine theinfluence of security on the adoption of e-banking services among commercial bank customers in Ethiopia

3. Significance of the Study

The finding of this study which details with the factors that influence the adoption of e- banking of commercial bank in Ethiopia is beneficial for different stakeholders such as Banking sectors(commercial Banks and National bank of Ethiopia), researcher and for other researchers as follows.

For National bank of Ethiopia, since such investigation has policy implication, the finding of this study might be used as a directive input in developing regulatory standards regarding e-banking services of commercial banks in Ethiopia. In addition, this study will initiate the commercial Bank management to give due emphasis on the management of these identified variables and provides them with understanding of activities that will enhance their e-banking services. This is due to the fact that knowing the factors that influence the adoption of E banking will help the bank manager to concentrate on the quality of e-banking services rather than its quantity. Thus, this study made the management body to visualize the determinants of e-banking services.

4. Literature Review

Online banking offers many benefits to banks, as well as to customers. However, when comparing globally, the percentage of online users is not as high in the USA as in other regions of the world. There can be severalreasons for this, such as customers need to have access to the internet in order to utilize the service; new online usersneed first to learn how to use the service, non-users often complain that online banking has no social dimension; i.e. they are not served in the same way as in a face-to-face situation in a branch; and there are issues of security andprivacy.

For most customers, e-banking is certainly attractive due its low costs and convenience(Cerenand Simon 2007). This implies as users are able to access bankingservices at virtuallyany timeand any placewith low costs. However, bank charges and internet connection expenses are known to be among the obstacles for online banking. Many studies have conducted on adoption of e-banking and factors determine the adoption of e-banking.

According to study by (Robert2009*)* the cost factor associated with use of internet andservice charges isfound tobe significantly associated with e-banking adoption. The study reported that most of the users were aware of the fee charges andfound it acceptable. Most of the

customers profess that they will continue to use e-banking as the overall cost is negligible. On the contrary, another study(SohailandShanmugham*2003)*reported that cost of internet and computers does not significantly influence e-banking adoption.

(Gao and Owolabi2008) in Nigeria include as the level of awareness or attention, the accessibility to computers and the Internet, convenience, privacy, costs, and the availability of knowledge and are significant influence of e- banking services. According to the study made by (Al-Somali et al. 2008)adoption of internet banking services is facilitated by the bank's reputation in terms of size, awareness and trust awareness of Service and its benefits in form of the amount of information a customer has about Internet banking and its benefit may have a critical impact on the adoption of Internet banking. On the other hand Al-Somali et al. 2008) noted that low awareness of Internet banking is a critical factor in causing customers not to adopt internet banking.

In contrary,(Katri2003) reported as most important factors discouraging the use of Internet banking are lack of Internet and security.The study of (Shah et al.2005) on critical success factors (CSF) in E-Banking conducted in United Kingdom noted top six factors such as user-friendly website, systems security, support from top management, fast responsive customer service, promotion of electronic commerce within organization, and all time availability of services and rapid delivery of services are a significant factors of e banking services.

The other descriptive case study analysis conducted by (Khalfanet al2006) on 'Factors influencing the adoption of internet bankingaimed toidentify the main potential factors or impediments that are currently inhibiting the incorporation or adoption of E-commerce applications in the Omani Banking sector. Accordingly, security and data confidentiality issues have been found as significant barrier to adopt e banking services. This implies banking sector was reluctant to use E-commerce applications as they felt that transactions conducted electronically were open to hackers and viruses which are beyond their control.

Study conducted by (Daghfous and Toufaily2007) on the success and critical factors in adoption of E-banking by Lebanese banks. The results of their study shows that the organizational variables (bank size, functional divisions, technical staff, technical infrastructure, perceived risks, decision makers` international experience and mastery of innovation) are variables which

exert significant impact on the adoption of e-banking. Among the structural characteristics, the result revealed that internal technological environment of the bank (security) is a very important factor in determining the adoption of e-banking.

(Gerrardet al.2006) in their study in Singapore identify risk to be an important factor forInternet Banking adoption. The finding revealed as security and privacy in Internet Banking hinder the customers` adoption. This implies that bank customersfelt as all their financial informationcould be in jeopardy.

An empirical investigation conducted by (Sathye1999) on the adoption of Internet Banking by Australian consumers also identified, security concernsas key factor in internet banking adoption. The result finds security concerns of internet banking are keeping customers away from adopting Internet Banking.

The study of (Kerem2003) on the adoption of electronic banking: underlying consumerbehavior and critical success factors conducted in Estonia, addressed six different issues influencing the adoption of Internet banking (Better prices, Recommendations, Better service, Marketing efforts, Better access and higher privacy). The find point out as better services(convenience), better prices(cost) and higher privacy enable the customers to start internet banking.(Al-Amadi and Ibn2012) using Multiple regression analysis found as uncertainty avoidance has a positive and significant impact on customers' attitude, which in turn influences customers' intention to use electronic banking services in Saudi Arabia.

The study done by (Nath et al.2013) in Malaysia found as security, cost, trust and privacy are a significant factor of e banking service adoption. This implies that since trustworthiness assumes high significance towards user's willingness to adopt e-banking banks , concentration on factors that are found to influence customer's trust such as improving their security and privacy policies and creating more reliable web sites expected from the bank mangers.

(Bultum2014)indicated that the major barriers Ethiopian banking industry faces in the adoption ofElectronic banking are: security risk, lack of trust, lack of legal and regulatory frame work, Lack of ICT infrastructure and absence of competition between local and foreign banks. The study suggests a series of measures which could be taken by the banking industry and by

government to address various challenges identified. These point out that measures like Establishing a clear set of legal framework on the use of technology in banking industry, supporting banking industry by investing on ICT infrastructure and banks needs to be focused on technological innovation competition rather than traditional bases of retail bank competition.

Similarly, (Takele and Sira 2013) by integrating six variables from theory of planned behavior, technology acceptance model and previous studies, revealed as attitude, subjective norm, perceived behavioral control, perceived usefulness and perceived ease of use and perceived risk were significant in affecting users' intention to use e-banking services in Bahir Dar, Ethiopia.

The studies reviewed in this chapter have heavily used study samples consisting of bank officials and bank workers. Again, the finding of their study shows that, the main obstacles and barriers to adopt E-banking services are the concerns of lack of suitable legal and regulatory frame works for E-commerce and E- payments, customers trust in the initiativesand technology investment cost. Also the literature indicates that there are different factors that influencing the adoption of E-banking from customers perspective such as, perceivedadvantages and other factors related to the services itself & how to be accepted and used by thecustomers, which differ from country to country, reflecting the economic and technologicaldevelopment in each country.

This is because internet banking is a new industry here, and so consumer acceptance and use of internet banking is still limited. To date very little research has been conducted into factors which influence consumer adoption of internet banking, and so therefore there is a need for a study on the subject.In this study the researchers identifiedcritical success factors such as,trust, cost, security and privacy that determines adoption of E-banking in Ethiopian banking industries by using survey conducted with Customers' of commercial banks in Ethiopia.

5. RESEARCH MATERIAL AND METHODS

5.1 Research Design

The study was a triangulation of both qualitative and quantitative methods. Thus, the researchers used mixed approach and cross-sectional study design. Besides, since this study identifies and

describes the factors that influence e-banking service adoption among commercial bank customers in Ethiopia, it is descriptive research.

5.2 Target population

Inorder to collect the right data from the right person/ the researchers were select eleven (11) commercial banks such as Abay Bank, Bank of Abyssinia, Addis International bank, Awash international Bank, Commercial bank of Ethiopia (CBE), Dashen Bank, Nib International Bank, Oromia International Bank, United bank, Wegagen Bank, and Lion Bank were selected due to their adoption of E-banking services before five years.

5.3 Sampling method

The researchers used Cochran's (1977) sample size determination formula to determine the sample size for study population with 95% confidence level which is used by most of the researcher.

$$no = \frac{Z^2 \mathrm{P}(1-\mathrm{p})}{e^2}$$

Therefore, for a confidence level 95%, Z= 1.96, e=0.05, and p=0.05

$$no = \frac{1.96^2 * 0.5 * 0.5}{0.05^2}$$

$$= \underline{385}$$

Where: population size = unknown

no= required return sample size according to Cochran's formula= 385

Assuming response rate of 80%, a minimum drawn sample size were 482which is calculated as follows:

n_1 = 385/.80 = 482

Where:

- Anticipated return rate = 80%.
- $\mathbf{n_1}$= sample size adjusted for response rate.
- Minimum sample size = 385.

In this study, purposive sampling was used to include 482 sample respondents from all commercial banks in Ethiopia. Accordingly, 482 questionnaires were distributed to bank's customers. Among these distributed questionnaire, 450 questionnaires were returned with 93.4% response rate.

The researchers have been used the most frequently chosen confidence interval of 95% (1.96) from z distribution table). A larger value for the quantity p(1 - q) was result in a larger sample size. Note that the largest value of p (1 - q) occurs when p =0.50, that the sample size is sufficient to obtain the desired margin of error. It is also recommended to use planning value of *p*= 0.5 when there is no previous work done on similar topic, pilot study was not conducted, and judgment is not used to select preliminary sample, based on this fact the researchers have chosen p to be 0.5 (Anderson 2009, PP. 313- 316).

5.4Sources and Methods of data collection

For this study, the researchers used primary data. In order to collect the primary data, questionnaire was used. To achieve the research objectives, the researchers develop questionnaire that incorporate six-point likert scale, other close ended and open ended items that pertain to the research objectives. The questionnaire was prepared for selected participants and translated into Amharic.

5.6 Methods of Data analysis and Presentation

For the analysis the data, descriptive and inferential statistics were used. Statistical Package for Social Science (SPSS) software version 20 was used to perform various statistical analyses and hypotheses testing. The stages in the statistical analysis were data preparation, tabulation of data, and then various tests were conducted to analyses relationships. Based on the questionnaire, frequencies and percentages were used for all variables of this study. Cronbach's alpha test was used to test forreliability and internal consistency of the research variables.

To achieve this research objective which is to assess the influence of e-banking service adoption among commercial bank customers in Ethiopia, multiple linear regression model was used due to the continues nature of dependent variable(E-banking adoption). Accordingly, the following model was used.

$EBA_i = \alpha_0 + \beta 1T_i + \beta 2C_i + \beta 3P_i + \beta 4S_i + \varepsilon i$ ……..*Eq 1*

Where: EBA is E-banking adoption, T is trust, C is cost, S is security, αi is an intercept, β1, β2… β4 is a coefficient and εi is an error term at time i.

6. RESULT AND DISCUSSION

6.1 Introduction

The factors that influence of customers' adoption of e-banking services of banking sectors have been studied by many researchers across the world. However, this study was conducted to examine the influence of customers' adoption of e-banking services in Ethiopian context to contribute its own effort for the empirical evidence.

6.2 Descriptive Statistics

Table 1 General Information of the Respondents

Variables		**Frequency**	**Percent**
Gender	Male	315	70
	Female	135	30
Age	<20	56	12.4
	20-30	126	28
	31-40	115	25.6
	41-50	112	24.9

	>51	41	9.1
Education	Illiterate	45	12.2
	High school or less	68	17.3
	Diploma	102	24.9
	BSc/BA degree	198	46.2
	Postgraduate and above	87	25.6
Occupation	Home duty	24	5.3
	Student	68	15.1
	Private business	256	56.9
	Government employ	102	22.7
Salary/Income(ETB)	<1000	18	4
	1000-2000	25	5.6
	2001-3000	78	17.3
	3001-4000	97	21.6
	>4000	232	51.6
Use of e-banking service	Yes	244	54.2
	No	206	45.8

Source: Survey 2016/17 via SPSS 20

ETB- Ethiopian Birr

The above table 1 presents the General Information of the Respondents. It shows that 315(70%) of the respondents in the study were males and the rest 135(30%) were females. The above table also indicated that 56(12.4%) of the totalrespondents are less than 20 years old while41(9.1%) of them are more than 51 years old.

The table above also shows that 45(12.2%) of the respondents are Illiterate, 68(17.3%) are from High school or less, 102(24.9%) Diploma holders, 198(46.2%) are first degree holders and the rest 87(25.6%) have Master's Degree.

The situation of the respondents income in Ethiopian birr shows that, 18 (4%) of respondents have less than birr1000 monthly income,25(5.6%) birr1000-2000monthly income.This shows that the majority of commercial bank customers in Ethiopia have a monthly income of more than birr 4000 followed by 3001-4000 monthly income. Similarly, the above table 1 shows that

244(54.2%) are e-banking service users while the remaining 206(45.8%) are not e-banking service users. This implies that, the majority of the commercial bank customers are e-banking service users.

Table 2.Distribution of E- banking users in term of service type

E-banking service		Frequency	Percent
ATM	Use it	127	28.2%
	Did not use it	51	11.3%
Mobile banking	Use it	42	9.3%
	Did not use it	65	14.4%
Internet banking	Use it	53	11.8%
	Did not Use it	16	3.6%
POS	Use it	22	4.9%
	Did not Use it	74	16.4%

Source: Survey 2016/17 via SPSS 20

The above table 2 presents theDistribution of e- banking users in term of service type. Accordingly, ATM, Mobile banking, Internet banking and Point of Sale Terminal (POS) are type of e banking services offered by commercial banks in Ethiopia. Thus, the above table shows as 127(28.2%) of respondents are ATM users while 51 (11.3%) non users.

6.3 Determinants of e-banking Service Adoption in Ethiopia

Table 3 influence security on e-banking Service Adoption

Items	**Mean**	**SD**	**Percentage (%)**				
			SA	**A**	**N**	**D**	**SD**
Security	1.7	0.77					
Security of e-banking is important for me	1.30	0.63	354(78.7)	55(12.2)	41(9.1)		
The authorized username and password are important	1.36	0.52	298(66.2)	144(32)	8(1.8)		
I do not save my login ID and password on the computer	1.52	0.69	267(59.3)	133(29.6)	50(11.1)		
I do not leave my computer unattended, while connected to the e-banking services	1.54	0.61	234(52)	187(41.6)	29(6.4)		
Online banks have ability of correcting erroneous transactions	2.12	0.99	155(34.4)	122(27.1)	134(29.8)	39(8.7)	
Online monetary transaction is safer than carrying money	1.85	0.99	212(47.1)	138(30.7)	55(12.2)	45(10)	
Overall online banking is highly secure	2.21	1.01	132(29.3)	154(34.2)	103(22.9)	61(13.6)	

Where, SA- strongly agree, A-Agree N- Neutral, D - Disagree and SA- Strongly agree

Source: Survey 2016/17 via SPSS 20

The above table 3 comprises the influence security on e-banking Service Adoption. As the table indicated security has a mean of 1.7 and standard deviation of 0.77.However, 39(8.7%) respondents with standard deviation of 0.99 and 45(10%) respondentswith standard deviation of 0.99 aredisagree as e banking service has security problem

Table 4 Influence Privacy on E-Banking Service Adoption

Items	**Mean**	**SD**	**Percentage (%)**				
			SA	**A**	**N**	**D**	**SD**
Privacy							
Confidential information is delivered safely from banks to customers	1.39	0.58	298(66.2)	129(28.7)	23(5.1)		
Banking institutions keep customers information P&C	2.16	0.99	133(29.6)	165(36.7)	100(22.2)	52(11.6)	
The information found in the site is credible	2.20	1.08	152(33.8)	128(28.4)	98(21.8)	72(16)	
I find the website information trustworthy	2.35	1.07	106(23.6)	167(37.1)	99(21.8)	67(14.9)	11(2.4)
I can safely make an online transaction	1.89	0.72	125(27.8)	267(59.3)	39(8.7)	19(4.2)	
Privacy in e-banking is important to me	1.28	0.45	323(71.8)	127(28.2)			
Overall, online banking privacy is high	2.82	1.04	55(12.2)	126(28)	112(24.9)	157(34.9)	

Where, SA- strongly agree, A-Agree N- Neutral, D - Disagree and SA- Strongly agree

Source: Survey 2016/17 via SPSS 20

As the table 4 above shows 298(66.2%) respondents with standard deviation of 0.58 and 133(29.6%) respondents with standard deviation of 0.99 respondents are strongly agree as privacy influence the adoption of e-banking services. However, 52(11.6)respondents with standard deviation of0.99 are disagree as privacy influence the adoption of e-banking services.

Table 5 Influence of Trust on E-Banking Service Adoption

Items	Mean	SD	**Percentage (%)**				
			SA	A	N	D	SD
Trust							
I trust in internet banking services.	2.25	1.04	106(23.5)	197(43.8)	87(19.3)	60(13.3)	
I trust in the safety of online money transfer.	2.43	1.04	89(19.8)	179(39.8)	82(18.2)	100(22.2)	
I trust the bank to handle my personal information in confidentiality.	1.70	0.67	189(42)	207(46)	54(12)		
I trust the information presented on e-banking websites	2.32	0.89	69(15.3)	230(51.1)	89(19.8)	62(13.8)	
Internet banking system can be attacked.	1.54	0.49	205(45.6)	245(54.4)			
Overall, I trust online banking.	1.75	0.69	178(39.6)	205(45.8)	67(14.7)		

Where, SA- strongly agree, A-Agree N- Neutral, D - Disagree and SA- Strongly agree

Source: Survey 2016/17 via SPSS 20

The above table shows that 197(43.8%)respondentswith standard deviation of 1.04, 179(39.8%) respondentswith standard deviation of 1.04 and 207(46%)respondentswith standard deviation of 0.67 trust e banking services. However, 60(13.3) respondentswith standard deviation of 1.04, and 100(22.2) respondentswith standard deviation of 1.04disagree as e banking services has trust.

Table 6Influence Costs on e-banking Service Adoption

Items	Mean	SD	**Percentage (%)**				
			SA	A	N	D	SD
Costs							
Fee of internet connection is affordable.	2.14	0.92	104(23.1)	223(49.6)	68(15.1)	55(12.2)	
E-banks charge lower transaction fees.	1.76	0.65	162(36)	236(62.4)	52(11.4)		
I can save my time and money by using internet banking.	1.85	0.68	142(31.6)	23251.6)	76(16.9)		
Transaction done at internet banking is less costly than bank branches.	2.18	0.96	105(23.3)	228(50.7)	48(10.7)	69(15.3)	

Overall, the fees and Charges are	2.44	1.09	99(22)	164(36.4)	77(17.1)	110(24.4)	

Where, SA- strongly agree, A-Agree N- Neutral, D - Disagree and SA- Strongly agree

Source: Survey 2016/17 via SPSS 20

As the above tableshows 223(49.6%) respondents with standard deviation of 0.92 and 236(62.4%) respondents with standard deviation of 0.65 agreed that costs are hindering e-banking adoption. However, 55(12.2%) respondents with standard deviation of 0.92 and 69(15.3%)respondents with standard deviation of 0.96 disagreed as costs are hindering e-banking adoption.

6.4 Test for Regression Analysis

In the descriptive statistics part, the study shows the mean and standard deviation of the dependent and independent variables. This section provides test for the autocorrelation by durbinweston, internal consistencybyCronbach'sAlph (α) Test and correlation by pearson correlation. Accordingly, as it can be seen from table 7 and table 8 below, the result of Pearson correlation matrix indicates that Security, Privacy, Trust, and Cost have positive correlation e-banking adoption.To sum up, beside the descriptive statistics, correlation analysis is made to enhance the reliability of regression analysis. However, to reach such conclusion, this has to be supported by regression result as discussed in the upcoming sections.

Table 7 Cronbach's andDurbin-Watson Test

#	**Independent Variables**	**Cronbach's α test**	Durbin-Watson
1.	Security	0.804	1.80
2.	Privacy	0.876	1.13
3.	Trust	0.745	1.12
4.	Cost	0.758	1.08
5.	Adoption	0.899	1.28

Source: survey, (2016/17) via SPSS 20

Table 8. Pearson Correlation Matrix

Correlations						
		E-B adoption	Cost	Trust	Privacy	Security
E-B adoption	Pearson Correlation	1	.760**	.577**	.750**	.743**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	450	450	450	450	450
Cost	Pearson Correlation	.760**	1	.829**	.896**	.921**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	450	450	450	450	450
Trust	Pearson Correlation	.577**	.829**	1	.859**	.895**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	450	450	450	450	450
Privacy	Pearson Correlation	.750**	.896**	.859**	1	.888**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	450	450	450	450	450
Security	Pearson Correlation	.743**	.921**	.895**	.888**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	450	450	450	450	450
**. Correlation is significant at the 0.01 level (2-tailed).						

6.5 Result of Multiple Linear Regression Analysis

Table 9. Result of Multiple Linear Regression Analysis

Independent Variables	Beta	Sig.	R. Square	Durbin-Watson
Constant	.514	.000	67	1.80
Privacy	.522	0.000	0.553	1.13
Security	.607	0.000	0.563	1.12
Trust	-.618	0.000	0.333	1.08
Cost	.246	0.000	0.577	1.28

Source: Survey Via SPSS 20, ***Note:***Statistical significance: *at 1%,*

Multiple linear regression analysis was used by the researchers in order to test simultaneous contributions and predictive effect of independent variables to e-banking adoption. Accordingly, based on the above table 9, the following model was developed to examine the determinants of E-banking adoption:

E-banking adoption = 0.514+52.2% privacy +60.7% security -61.8%trust+24.6%cost+ε

Through the examination of coefficients for independent variables, Privacy, Security and Cost had positive significant effect on E-banking adoption having a coefficient of 0.522, 0.607 and 0.246 respectively. This indicates that one unit change in Security, Privacy and Cost can result a change on E-banking adoption rate by 0.522, 0.607 and 0.246 units in the same direction respectively.However, Trust had positive significant effect on E-banking adoption having a coefficient of -0.618 which implies one unit change in trust can result a change on E-banking adoption rate by 0.618 units in opposite direction.

Based on previous studies and the finding of this study, this section discussed the general result obtained via regression analysis as shown in the above table .Referring the literature, the result of each explanatory variable including their effect on of E-banking adoption of commercial banks in Ethiopia was discussed. Thus, result of the finding was discussed in relation to the previous empirical and theoretical evidences as follows.*

Security

The result of this study shows that security has a significant influence on Ethiopian CBE customer in adoption of e-banking.This is consistent with the study that was conducted by(Sathye 1999; Katri 2003; Shah et al. 2005; Khalfan et al. Gerrard et al. 2006; Woldie*et al* . 2008) in Vietnam, Ghana and Romania, Chong *et al*. 2010andMoga*et al*. 2010) respectively. However, this study contradicts a study conducted by (Hole *et al*. 2006).

Privacy

Similarly, the result of this study shows Privacy has a significant influence on customers in adoption of e-banking.This is similar to study conducted in Lebanon by (Daghfous and Toufaily2007) and study in Singapore by (Gerrard*et al.*2006).This is because electronic banking services are in inherently risky environment due to the absence of personal contact, physical product evaluation, warranties and contracts. This implies that customers might be concerned about the length of time involved in waiting for transaction or learning how to operate it.

Cost

Finding from our study revealed that cost has significant influence on adoption of e-banking. This is consistent with the study by Cerem, Simon and Robert 2009), and study in Nigeria by (Gao and Owolabi2008). However, this study is inconsistent with study conducted by (SadiqSohail and Shanmugham2003) who reported asservice cost does not significantly influence e-banking adoption.

Trust

The results of this study revealed as Security has positive significant influence on e- banking service adoption. This result confirms the finding of (Al-Somali et al. 2008 and Bultum2014). This implies establishing a clear set of legal framework on the use of technology in banking industry, supporting banking industry by investing on ICT infrastructure and banks needs to be focused on technological innovation competition rather than traditional bases of retail bank competition.

7. CONCLUSION AND RECOMMENDATION

7.1 CONCLUSION

This study gives an insight into the factors that determine the adoption of internet banking in Ethiopia. The study has been able to identify the factors that determines the adoption of internet banking and has been able to provide empirical implications both for management of banks and the government help to improve the adoption of internet banking in Ethiopia. Based on descriptive statistics it is possible to conclude that the majority of commercial banks customers

are males and also majority of commercial bank customers in Ethiopia are first degree holders. Besides, the majority of commercial bank customers in Ethiopia are Private business holders followed by Government employee. From the multiple regression analysis model, the researchers conclude as the whole variables (cost, trust, privacy and security) has a significantly determine the adoption of e- banking services.

7.2 RECOMMENDATION

Thus, based upon the findings of this study we recommend the following. T h e banks to improve their security andprivacy functions in e-banking that will safeguard customers' personal information andprevent fakeweb sites atthe lowest costs for customers, while increasing clients' trust toachieving greater profitabilityinthelongterm. However, even thoughsecurity and privacy features such as firewalls, authentication, encryption andetcarethenorm ofe-banking sites; most customers donot havethe ability tofully comprehend the functions that are already implemented. Banks may equip customerswith this knowledge through more awareness messagesandtraining approaches. Therefore, banks need to be focused on technological innovation competition rather than traditional bases of retail bank competition.

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8. REFERENCE

Al-Somali SA, Gholami R, Clegg B (2008) Internet Banking Acceptance in the Context of Developing Countries: An Extension of the Technology Acceptance Model.

Almazari AAK and Siam AZ (2008) E-Banking: An Empirical Study on the Jordanian Commercial Banks. Journal of King Abdul-Aziz University 22(2), 3-26.

Andrew Musiime and MalingaRamadhan(2011) Internet banking, consumer adoption and customer satisfaction African Journal of Marketing Management Vol. 3(10), pp. 261-269,

AyanaGemechuBultum (2014) Factors Affecting Adoption of Electronic Banking System in Ethiopian Banking Industry; Journal of Management Information System and E-commerce

Ayrga A (2011).
Is Mauritius Ready to E-Bank? From a Customer and Banking Perspective. Journal of Internet Banking and Commerce, 16(1).

Bader M,Almohaimmeed (2012) CustomerBehaviour towards Internet Banking: A Study of the Dormant Users of Saudi Arabia ;A thesis submitted to The University of Irmingham For the degree of DOCTOR OF PHILOSOPHY

Ceren S, and Simon W (2007) Internet banking market performance: Turkey versus the UK, International Journal of Bank Marketing,

Chong AY, Ooi K, Lin B, and Tan B (2010) Online banking adoption: An empirical analysis.International Journal of Bank Marketing, 28(4): pp.267-287

DaghfousN and Toufaily E (2007) The adoption of E-banking by Lebanese banks: success and critical factors. research paper, Universte du Quebec a Montreal Retrieved from:Dashen bank 2011, Annual Report, available at: http://www.dashenbank.com

DimitriosMaditinos, DimitriosChatzoudes and LazarosSarigiannidis(2013) An examination of the critical factors affecting consumer acceptance of online banking, A focus on the dimensions of risk, Journal of Systems and Information Technology, Vol. 15 No. 1, 2013

Mohammad O. Al-SmadiAnd Al-Imam Muhammad Ibn (2012) Factors Affecting Adoption of Electronic Banking: An Analysis of the Perspectives of Banks' Customers; International Journal of Business and Social Science Vol. 3 No. 17;

Gao P, Owolabi O (2008) Consumer adoption of internet banking in Nigeria

Gerrard P, Cunningham J and Devlin J (2006) Why consumers are not using Internet Banking: a qualitative study. Journal of Services Marketing,20(3):160–168.

Hole KJ0, Hole KJ, Moen V, and Tjostheim T(2006) Case study: Online banking security.IEEE Security & Privacy Magazine, 4(2): pp.14-20.

Kariuki John andGikonyo (2014) Factors Influencing the Adoption of Internet Banking In Kenya.

Katri K (2003). Adoption of electronic banking: underlying consumer behaviour and critical success factors. Case of Estonia.

Kerem K (2003) Adoption of electronic banking: underlying consumer behaviour and critical success factors' Case study of Estonia', paperpresented at the 2003 conference of the technology and everyday life network, London, U.K.

Khalfan A, Alrefaei S and Al-Hajery M (2006) Factors influencing the adoption of internet banking inOman: a descriptive case study analysis,' international journal of financial servicesmanagement, 1(2/3):155-172

Michal P and Tomasz PW (2009) Empirical analysis ofinternet banking adoption III Poland ", International Journal of Bank Marketing, Vol. 27 No.1, pp. 32-

Moga LM, Md NK, Neculita M, and Khani N(2012) Trust and Security in E-banking Adoption in Romania: pp.1-10

Nasim Z, Hosein(2009) Internet Banking: An Empirical Study Of Adoption Rates Among Midwest Community Banks Shantou University, Shantou, China, Journal of Business & Economics Research Vol 7, No 11

Perkins, Ed-Zilla Daniel, Annan, Jonathan (2012) Factors affecting the Adoption of Online Banking in Ghana: Implications for Bank Managers

Tower Group (2005)Online banking consumers adoption in the US (2002-2006). Available at: www.towergroup.com/reserach.

Venkatesh V, Morris MG, Davis GB, and Davis FD (2003) User acceptance of information technology: Toward a unified view. *MIS quarterly*, 425-478.

Yousafzai S (2005) Customer behaviour towards internet banking.Unpublished Ph.D.Thesis

Robert JN (2009) Electronic Commerce Adoption in the Arab Countries.An Emprical Study", International Arab Journal of e- Technology, Vol. 1 No. 1.

SadiqSohail M and ShanmughamB (2003) E-banking and customer preferences III Malaysia: An empirical investigation. Information Sciences 150(3): 207-217.

Shah M, Branhganza A, Khan S and Xu M(2005) A survey of critical success factors in E-banking, research Paper, European and Mediterranean Conference on information systems UK.

Woldie A, Hinson R, Iddrisu H, and Boateng R(2008) Internet Banking: Initial look at Ghanaian Bank consumer Perception. IOSR Journal of Business and Management (IOSR-JBM) e-ISSN: 2278-487X, p-ISSN: 2319-7668. Volume 16, Issue 9. Vol. No.1;

YitbarekTakele and ZelekeSira (2013): Analysis Of Factors Influencing Customers'intention To The Adoption Of E-Banking Service Channels In Bahir Dar City; European Scientific Journal May 2013 edition vol.9, No.13 ISSN: 1857 – 7881 (Print) e - ISSN 1857- 7431