

ASSESSING THE DETERMINANTS FOR THE ADOPTION OF E-BANKING SERVICES: THE CASE OF DASHEN BANK

Zerihun Ayenew BIRBIRSA, PhD*
Ethiopia TEFERI**
Tesfaye HAILU***

Abstract

The study deals with assessing the determinants for the adoption of e-banking at Dashen Bank selected branches in Addis Ababa, Ethiopia. To meet the objectives of the study, primary data was gathered from selected employees and customers of selected branches of Dashen bank east district in Addis Ababa. These districts include: Bole Medihanialem Branch, Kotebe Branch, Yerer Branch, CMC Branch and Ayat Branch. Hence, Simple random sampling method was employed to draw the sample respondents. Hence out of 388 respondents, 356 responded the questionnaire. The collected data was analyzed using descriptive statistics, correlation and regression analysis. Accordingly, the findings reveal that except perceived risk, which had a negative relationship, perceived ease of use and perceived usefulness had significant and positive relationship with adoption of e-banking. Hence, the study recommended that to enhance e-banking adoption, banks should combine the concepts of perceived ease of use, perceived usefulness, and perceived risk dimensions into e-banking services to increase the level of e-banking adoption and adopt a clear strategy in order to reduce e-banking risk and to improve adoption rate.

Keywords: perceived usefulness, perceived ease of use, perceived risk, e-banking adoption

JEL Classification: G21, G29

* Associate Professor, College of Business and Economics, Department of Management, Jimma University, Ethiopia.

** Program Developer, USAID, Addis Ababa, Ethiopia.

*** Lecturer, Kotebe Metropolitan University, Ethiopia.

1. Introduction

The introduction of e-banking makes the bank services to be accessed more than the usual banking services. Even in the rural destinations, where branches are rarely accessible, e – banking plays paramount role to access banking services by clients. Despite this, the utilization and adoption of e–banking is contingent with poor level of connectivity, level of awareness of clients, costs associated with it and client’s attitude towards the technological advancement. Now days financial institutions and specially banks are transforming themselves from time to time in order to make their services more accessible to their customers. That is, the introduction of e- banking made the sector to be more competitive. Promoting service quality typically in line with banking services is a function of having a sound internet services which is rendered by providers and the cost associated with it. As a matter of fact, customers get interested whenever the newly endorsed technological advancement is cheaper than the existing service providing tools (Vijay, 2014). Also, clients’ adoption of e – banking is a function of perceived risk, ease of use, usefulness and having a background in internet utilization (Yoseph, 2017). As per Katuri, et al., (2003) it is the introduction of internet banking that made its perceived usefulness at the highest degree. Besides, internet banking made the customers to easily access the products of banks everywhere where there is an access of internet connection. Hence, the aim of this study is to assess the determinants for the adoption of e-banking services: special emphasis is given to Dashen bank on selected branches in Addis Ababa, Ethiopia.

2. Statement of the problem

The past couples of decades made the banking sector to transform and adopt changes in its day-to-day operations. The reason for such changes includes: the keen competition held with in banks, the introduction of internet and other state of art technologies, the ever-increased customer requirements etc. Therefore, coping such dynamicity calls for the banking industry to get rid of the traditional banking services and adopting new way of rendering services. Keeping other things constant, the introduction of internet banking made the availability of banking services everywhere and any time. That means, customers can undergo any transactions at whatever situation they are and in whatever geographical locations they exist. Simply, it is worth to

say that life becomes simple due to the technological advancement (Katuri, et al., 2003)

Adoption of e-banking in Ethiopia is challenged with lack of skilled man power, failure to set an appropriate regulatory modalities, poor internet band width that is supplied to the bank, cost of adopting the technology, low level of telecom infrastructure and low level of customers or clients awareness. That means, Ethiopian banks suffer from institutional and structural problems to adopt e- banking. Despite these, most banks have been introducing the e- banking services to their customers. But the service is not reliable due to the aforementioned factors. Here it is possible to add that perceived ease of utilization is the leading advantage of electronic banking as it made the operations of bank services more efficient and also perceived usefulness is the other advantage that made banks to adopt electronic banks which in turn leads to maintain good reputation as it is a means to enhance public confidence in a wider fashion (Mahlet, 2016). Therefore, this study aims at revealing out the factors that determine the adoption of e-banking services: at Dashen bank on selected branches in Addis Ababa, Ethiopia.

The general objective of the study is to investigate the major determinants for the adoption of e-banking in Dashen Bank, Ethiopia.

3. Literature review

It is a general truth that electronic commerce is making a paradigm shift in the world of business. Because it connects different stakeholders through technology in order to make the transactions simple. It makes the usual way of transactions or trading to business unusual fashion. That is simply the world of internet makes the operations of business to more advanced state of art technology by connecting major actors of business such as: producers, customers, suppliers, and sellers etc. on one ring to facilitate the transactions to be held among themselves. Generally speaking, transformations of businesses from oldest form of operations to modern or emerging approaches is came into being due to the introductions of internet services throughout the globe. This makes the world a small village and operations of businesses smooth sailing. Furthermore, the marketing activities can take place in an efficient and effective manner by meeting the requirements of the customers. Hence, changes in the world of business is due to the advancements of technology

(Scarborough and Scott,2012). Generally speaking, e- banking can be defined as: rendering banking services to clients or customers by a bank through internet connection undergo and monitor financial transactions. Hence, customers can make of such service provisions whenever the cost associated with it is minimal, having prior knowledge in making use of internet and degree of complexity. Also, it is possible to deduce that e- banking helps in building non-cash society by making transactions more convenient to customers and at the same time benefits the bankers in maintaining efficiency in handling transactions (Saviour and Bornwell, 2018)

The banking industry is transforming itself in making use of technologies to render its services to customers. This marks an end of traditional way of banking services. Also, the core banking approach came in to being to make the industry operate in state of art technology. Such advancements change the conditions of transactions in other sectors too. Because when the e – banking is highly customized by clients, no doubt that the selling and buying of goods and services is also changed. Furthermore, the e- banking and e – commerce made business firms to operate in a smooth and fascinating style in order to meet the requirements of their customers. It is also a sound idea to notice that the e – banking service is constrained by factors such as: perceived risk, experiences in making use of technologies, and level of qualifications (Maitlo et al., 2015). It is worth functioning to understand that e- banking services should be regulated and monitored in a strictest way. Unless it is given due consideration in controlling the system, it would be subject to vulnerability. Always banks are expected to build the confidence of their customers by updating the system regularly. In case if the customer is in a position to attempt any fraud tactics, the bank should warn such acts by informing the customers through text messages and even directly calling and take corrective actions. This will minimize cyber-crime associated with advancement of technologies. In additions, the bank should pay attention to suggestions of customers and possible common fraud or cheating tactics and then assessing the case to in order to take corrective actions. Here it is mandatory to the bank to inform its customers pertaining to e- banking services on a regular basis if need arise to boost the morale of its customers. Whenever banks maintain the psychological relief of their customers or clients, they would have more reputation and able to overcome the challenge of competitors (Do and Nguyen, 2017).

4. Methodology

The study deals with assessing the determinants for the adoption of e-banking at Dashen Bank selected branches in Addis Ababa, Ethiopia. To meet the objectives of the study, primary data was gathered from selected employees and customers of selected branches of Dashen bank east district in Addis Ababa. These districts include: Bole Medihanialem Branch, Kotebe Branch, Yerer Branch, CMC Branch and Ayat Branch. Hence, Simple random sampling method was employed to draw the sample respondents. Since the total number of target respondents (customers and employees) is 12,869, the researchers used Taro Yamane's (1967) simplified formula and table to calculate sample size.

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

Where:

n= sample size, N = Population size, e= the margin of error (0.05).

Therefore, $n = \frac{12869}{1+12869(0.05)^2}$, n = 388

Hence out of three hundred and eighty- eight (388) respondents, three hundred and fifty- six (356) respondents responded the questionnaire. Here it is possible to infer that more than 90% responses rate was made. Therefore, it is based on this response rate that the analysis was made. The collected data was analyzed using descriptive statistics, correlation and regression analysis.

Therefore, the study specifically deals with:

1. To determine the extent to which Perceived Usefulness (PU) affect e-banking adoption
2. To reveal out the extent to which Perceived ease of Use (PEOU) affect e-banking adoption
3. To examine the effect of perceived risk (PR) on adoption of e-banking.

Hypothesis: The study tests the following hypothesis

1. There is a significant relationship between perceived Usefulness (PU) and adoption of e-banking in Addis Ababa.
2. There is a significant relationship between perceived ease of use (PEOU) and adoption of e-banking in Addis Ababa.
3. There is no significant relationship between perceived risk (PR) and adoption of e-banking in Addis Ababa.

5. Results and discussions

The study deals with the assessing the factors that determine the adoption of e- banking. To meet the objectives of the study, independent variables such as: perceived usefulness (PU), perceived ease of use (PEOU) and perceived risk (PR) were computed with the dependent variable (adoption of e- banking). Hence, the result is illustrated as follows.

- **Perceived usefulness**

This study evaluated the impact of perceived usefulness in the adoption of e-banking using six dimensions/items. Results obtained from survey respondents regarding their perception towards the usefulness of the existing e-banking service, using percentage distribution statistics are depicted in Table- 1 below. Most of the respondents responded positively that perceived usefulness has an effect in terms of enhancing adoption of e-banking. Respondents indicates that e-banking has substantially contribute in providing information and saving costs of customers at 80.9% and 75.8% positive responses respectively. Adoption of electronic banking contributed in facilitating flexible transaction, providing alternative to manage financial transactions, and allows managing financial activities efficiently with percentages 87.9%, 85.5% and 85.2 of respondents in agreement, respectively. Minimize the risk of theft and save cost of users were the highest among other items of perceived usefulness factor in which respondents disagreed on, 63 (17.7%) and 31 (8.7%) respectively.

Table 1

Perceived usefulness dimension

Items	Strongly Disagree	Neutral	Strongly agree
Provides up to date information	28(7.9)	40(11.2)	288(80.9)
Save cost of users	31(8.7)	55(15.4)	270(75.8)
Minimize the risk of theft	63(17.7)	67(18.8)	226(63.4)
Offer alternatives to manage financial transaction	5(1.4)	42(11.8)	309(85.5)
Facilitates flexible transaction	11(3.7)	30(8.4)	313(87.9)
Allows to manage financial activities efficiently	7(2.0)	42(11.8)	307(85.2)

Source: Survey 2018

- **Perceived ease of use**

Table 2 below presented percentage distribution statistics of perceived ease of use. It is indicated that 82.6% of the respondents believed that electronic banking helps to perform banking tasks in a simpler way. Transaction mistakes are less likely to occur compared to manual system is the lowest response at 63.2%. On the other hand, e-banking service helps to perform banking tasks in a simple way was the least response among others 13 (3.7%) and transaction mistakes are less likely to occur was the highest response on which the respondents responded negatively with 64 (18.0%). Hence, it is possible to infer that majority respondents responded positively for the perceived ease of use dimensions has an effect in terms of enhancing adoption of e-banking.

Table 2

Perceived ease of use dimension

Items	Disagree	Neutral	Agree
Bank provides easy and clear instruction	52(14.6)	57(16.0)	247(69.4)
E-banking is simple enough to handle or operate	36(10.2)	62(17.4)	258(72.5)
E-banking service helps to perform banking tasks in a simple way	13(3.7)	49(13.8)	294(82.6)
Transaction mistakes are less likely to occur	64(18.0)	67(18.8)	225(63.2)

Source: Survey, 2018

- **Perceived risk**

Respondents were asked about their agreement or disagreement regarding the perceived risks associated with adoption of e-banking. As shown in Table 3, the majority of respondents responded positively for all items related to perceived risk. Specifically, high risk perception was expressed for fear of financial risk (72.9%), fear of security risk (62.9%), fear of losing privacy (65.5%), fear of the possibility of failure (73.5%) and service limitation (77.9%).

Table 3

Perceived risk dimension

Items	Disagree	Neutral	Agree
Fear of financial risk	43(12.1)	72(20.2)	241(72.9)
Fear of possibility of defect	35(9.8)	59(16.6)	252(73.5)
Fear of security risk	78(21.9)	54(15.2)	224(62.9)
Fear of losing privacy	51(14.4)	72(20.2)	233(65.5)
E-banking limits services	30(8.5)	49(13.8)	277(77.9)
E-banking cause high risk perception	46(12.9)	55(15.4)	255(67.7)

Source: Survey 2018

• Inferential analysis

The inferential analysis is used to examine the level and magnitude of relationship in between independent variables and dependent variable. Hence, Pearson's Correlations and Regression Analysis were employed. To carryout regression analysis, diagnosis tests such as: Normality, Linearity, Multicollinearity and Heteroscedasticity were tested.

Table 4

Correlations

		Adoption of e-banking	Perceived Usefulness	Perceived Ease of Use	Perceived Risk
Adoption of e-banking	Pearson Correlation	1	.748**	.704**	-.564**
	Sig. (2-tailed)		.000	.000	.000
	N	356	356	356	356
Perceived Usefulness	Pearson Correlation	.748**	1	.563**	-.434**
	Sig. (2-tailed)	.000		.000	.000
	N	356	356	356	356
Perceived Ease of Use	Pearson Correlation	.704**	.563**	1	-.411**
	Sig. (2-tailed)	.000	.000		.000
	N	356	356	356	356
Perceived Risk	Pearson Correlation	-.564**	-.434**	-.411**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	356	356	356	356

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

Source: Survey 2018

The correlation analysis result shown in the Table 4. above reveals that there is strong positive relationship between PU and PEOU while PR has a strong negative relationship with e-banking adoption. Perceived usefulness has the highest association (correlation coefficient of 0.748), followed by perceived ease of use (correlation coefficient of .704). Perceived risk has the lowest association with adoption of e-banking (correlation coefficient of -.564)

- **Multiple regression analysis from customers' perspective**

Table 5 below presents the model summary for regression analysis for the adoption of e-banking. The model summary table helps to measure appropriateness of the regression model employed. The model summary shows that, the independent variables (perceived usefulness, perceived ease of use and perceived risk) explained adoption of e-banking with the adjusted R-square (70.6%). This implied that there is a significant relationship with the adoption of e-banking. Furthermore, the value of R=0.841 which is greater than 0.50 indicates that there is a strong correlation between the dependent variable and the independent variables (PU, PEOU and PR) together with the effect on the dependent variable of 70.8% (R-Square=0.708). The remaining 29.2% is explained by other variables out of this model.

Table 5

Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.841 ^a	.708	.706	.463

a. Dependent Variable: Adoption e-banking; b. Predictors: (Constant), Perceived Risk, Perceived Ease of Use, Perceived Usefulness

Source: Survey 2018

Table 6

ANOVA^a

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	183.401	3	61.134	284.604	.000 ^b
Residual	75.610	352	.215		
Total	259.011	355			

a. Dependent Variable: Adoption of e-banking; b. Predictors: (Constant), Perceived Risk, Perceived Ease of Use, Perceived Usefulness

Source: Survey 2018

Table 7

Result of multiple regressions - coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	1.792	.169		10.600	.000
1 Perceived Usefulness	.348	.029	.439	12.105	.000
Perceived Ease of Use	.305	.030	.363	10.109	.000
Perceived Risk	-.158	.023	-.226	-6.895	.000

a. Dependent Variable: Adoption of e-banking
Source: Survey 2018

The ANOVA Table 7 above shows the overall acceptability of the model from a statistics point of view. The test statistics (284.60) is larger than the critical value ($F_{3, 352, 0.05}=2.60$). As P is less than 0.05, the model is significant, and the variation explained by the model is not due to chance. Thus, the combination of the independent variables (PR, PEOU and PU) significantly predicted the dependent variable ($F=284.604$; $p < 0.05$).

The Beta (B) values were used as coefficients to complete the previously formulated regression model.

$$E - banking\ adoption = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon \quad (1)$$

Table 8

Summary of hypothesis test

Hypothesis	Variables	Findings	Hypothesis Status
H ₁	PU → adoption of EB	Positive and statistically significant ($\beta=0.348$; $p < 0.01$)	Supported
H ₂	PEOU → adoption of EB	Positive and statistically significant ($\beta=0.305$; $p < 0.01$)	Supported
H ₃	PR → adoption of EB	Negative and statistically significant ($\beta= -0.158$; $p < 0.01$)	Supported

The outcomes of regression analysis from customers' perspective shows that intention to adopt e-banking is individually and jointly predicted by PU ($\beta=0.348$; $P < 0.01$), PEOU ($\beta=0.305$; $P < 0.01$) and PR ($\beta=-0.158$; $P < 0.01$). These variables together explain 70.6% of the variance on intention to adopt e-banking technology. Thus, hypothesis 1, 2 and 3 are supported. The result also shows that the

adoption of e-banking is primarily and positively affected by perceived usefulness ($\beta = 0.348$), and less affected by perceived ease of use ($\beta = 0.305$) and perceived risk ($\beta = -0.158$). This implied that perceived usefulness is the most important predictor for the adoption of e-banking. Perceived ease of use also has a significant impact and appears to be the second determinant of a customer's perception to adopt e-banking services.

The Regression analysis result from customers' perception (Table-7) shows that one unit increase in perceived usefulness dimension would lead to 0.348 unit (or 34.8%) increase in adoption of e-banking provided that other variables being held constant. Similarly, one unit increase in perceived ease of use dimension would lead to 0.305 (30.5%) increase in adoption of e-banking provided that other variables remain constant. Lastly, one unit increase in perceived risk dimension would lead to -0.158 (15.8) decrease in adoption of e-banking provided that other variables remain constant. To sum-up the results of the regression analysis conducted on the factors indicated that PU, PEOU, PR, were found to be influential factors explaining e-banking adoption.

The established regression equation for adoption of e-banking is written as follows:

$$\begin{aligned} \text{Overall e – banking adoption} \\ = 1.792 + 0.348(\text{PU}) + 0.305(\text{PEOU}) - 0.158(\text{PR}) + \varepsilon \end{aligned} \quad (2)$$

7. Conclusions and recommendations

As per the above result, the adoption of e-banking is primarily affected by perceived usefulness ($\beta = 0.348$), and less affected by perceived ease of use ($\beta = 0.305$) and perceived risk ($\beta = -0.158$). This implied that perceived usefulness is the most important predictor for the adoption of e-banking. Perceived ease of use also has a significant impact and appears to be the second determinant of a customer's perception to adopt e-banking services. The findings of the study is consistent with other researches. Accordingly, the utilizations of technological advancement in the banking industry could save the cost and time of clients. However, clients' adoption of e – banking is a function of perceived risk, ease of use, usefulness and having a background in internet utilization (Yoseph, 2017). As per Katuri, et al. (2003) it is the introduction of internet banking that made its perceived usefulness at the highest degree. Also, internet banking made the

customers to easily access the products of banks everywhere where there is an internet connection. Also, according to Poon (2008) the adoption of electronic banking is a function introducing reliable security systems, building responsive management system, the costs associated with the technology, suitability of the system to users or whether the system or services are user friendly, the types of product available to use are some of the critical factors in meeting the requirements of customers. Of course, to make the adoption of e-banking, banks are expected to raise the level of awareness of their customers and maintain the level of security of e-banking. This is justified by Hussein & Abdelhalim (2016) who reveal that the level of feedback given by Jordan commercial banks affects customer's adoption of internet banking. Hence, it is advantageous for the banks to focus on security related matters as it is a fact that internet is susceptible to unauthorized accesses and hackings. Also, the authors added that banks are expected improve the service quality in all facets of their operations. Last but not least, banks should segment their clients by making use of demographic factors of internet banking in order to enhance their efficiencies and marketing mix endeavours.

Hence, the study recommends that to enhance e-banking adoption, banks should combine the concepts of perceived ease of use, perceived usefulness, and perceived risk dimensions into e-banking services to increase the level of e-banking adoption and adopt a clear strategy in order to reduce e-banking risk and to improve adoption rate.

References

1. Do, L. and Nguyen, L. (2017). The Level of Factors Influences on Customer's Adoption of Internet Banking: The Case of Vietnam. *International Journal of Economics, Finance and Management Sciences*. 5(3): 194-203, (accessed on 5, March, 2019), <http://www.sciencepublishinggroup.com/ijefm>
2. Hussein, A. and Abdelhalim, I. (2016). Determinants of Internet Banking Adoption among Customers of Commercial Banks: An Empirical Study in the Jordanian Banking Sector: *International Journal of Business and Management*. 11(3), P. 101 (accessed on 5, March, 2019). Available at: www.ccsenet.org/ijbm

3. Katuri, S. and Lam, M. (2003). Factors Affecting Internet Banking Activities: A Case Study of a Community Bank, AMCIS 2003 Proceedings. 20. Available at: <http://aisel.aisnet.org/amcis2003/20> (accessed on 5, March, 2019).
4. Mahlet, Z. (2016). Assessment of the Opportunities and Challenges for the Adoption of E-Banking Service (The case of Commercial bank of Ethiopia), St. Mary's University School Of Graduate Studies, Addis Ababa, Ethiopia.
5. Maitlo, GM., Kazi, ZH., Khaskheley, A., and Faiz, M. (2015). Factors that Influence the Adoption of Online Banking Services in Hyderabad, International Journal of Economics & Management Sciences. 4(1). Available at: <http://dx.doi.org/10.4172/2162-6359.1000216> (accessed on 5, March, 2019).
6. Poon, W. (2008). Users' adoption of e-banking services: the Malaysian perspective, Case study, journal of Business & Industrial Marketing. Emerald Group Publishing Limited, 23(1). 59–69. Available at: www.emeraldinsight.com/0885-8624.htm (accessed on 5, March, 2019) [DOI 10.1108/08858620810841498].
7. Saviour, L. and Bornwell, K. (2018). The Challenges of Adopting the Use of E-Banking to the Customers: The Case of Kasama District Banking ,Customers Scholar Journal of Applied Sciences and Research,1(2). Available at: www.innovationinfo.org (accessed on 5, March 2019).
8. Vijay, M. Kumbhar (2014). Commerce and Banking in 21st Century: Emerging Issues and Opportunities: A Critical Review on Adoption of E-Banking Services Rayat Institute of Research and Development, Satara, State-Maharashtra, India 415001.
9. Yoseph, W. (2017). Factors Affecting Customer's Adoption of Internet Banking: In Case of Commercial Bank of Ethiopia, A Thesis Submitted in Fulfilment of the Requirements for the award of the Master's Degree of Marketing Management, Addis Ababa University, Addis Ababa, Ethiopia.