



Determinants of Customers' Adoption of Digital Banking Services: Evidence from the Commercial Bank of Ethiopia, Semera District

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Abstract: This study aimed to examine the factors affecting customers' decision to use digital banking service in Commercial Bank of Ethiopia. This study used both primary and secondary data. The primary data was gathered through questionnaire distributed to a target of 384 respondents from customers of the selected branches using simple random sampling. And secondary data collected from the existing bank manuals and other sources. Both Quantitative and qualitative research approaches were used to analyse the collected data. The researchers used both descriptive and explanatory research designs for accomplishment of the study. The collected data was analysed using Statistical Package for Social Science (SPSS 2.0). The relationship and influence of the factors was analysed using Pearson correlation and multiple regressions. The researcher Revealed that the explanatory variables on electronic banking service, such as technology, income, speed, security, and demographic factors was identified as significant effects on e-banking adoption. Approaches were also be suggested to enrich the e-banking services including making websites more user-friendly, reducing users risk concerns and the role of government in terms of improving ICT infrastructure. Finally, to bring about sustainable adaptation of e-banking services by financial institutions which best serves the customer needs, more research works are suggested to be done to further analyse the participation of digital banking services to the larger economic transactions. This research will help banks about how to give information related to the system to its customers.

Keywords: Banking, Customer decision, Digital banking; Commercial bank of Ethiopia

I. INTRODUCTION

Digital marketing is a modern marketing strategy that has been boosted by the growth in information technology, particularly electronic technology. It involves the adoption of marketing tools such as the internet, social media, mobile, video, content, affiliate and search engine optimization (Khan, R. Z. and Nawaz, H, 2021) (Alghizzawi, 2020). Technologies and internets are more relevant in our daily lives and they are taking greater significance. A revolution in electrical technology is currently taking place, mainly in the phone, information, and communications industries. A number of services for the Internet has made possibly by the widespread acceptance of digital services across all socioeconomic segments and age groups. (Emad Ahmed, 2021) Most banks are now accessible through online services, and internet banking is already well known and accepted on a global scale. This presents banks with new business and service opportunities as well as challenges to thrive in the financial market and survive. Customers can use these digital services to check their bank accounts with only one click and an internet connection (Maiden & Sarrah, 2022).

The development of digital banking is not far more history in the world especially in Ethiopia is more recent. Finland is the first country takes a lead in adopting digital banking. In Malaysia the central bank of Malaysia give an approval to commercial banks to offer e-banking service in different manner.

CBE is the first bank in Ethiopia established in 1942. It played a huge role in the economic progress and improvement of the country. Commercial bank of Ethiopia pools a wide-ranging money base with extra 37,894 talented and committed permanent employees and it has more than 1456 branch overextended through the nation. At present CBE has over 22 million account owners plus the mobile and e-banking customers also reached to 2.5 million and active ATM card holders reached more than 8 million as of June 30, 2020 (CBE June 2020 report). In Ethiopia money is static the main governing

mode of give-and-take, and automated fee methods are at a rising stage. Moreover, banking technology in Ethiopia requires a lot of effort and resources to be easily adopted by customers.

II. STATEMENT OF THE PROBLEM

Commercial Bank of Ethiopia currently provides a range of digital and electronic banking services; however, customer adoption remains below expectations despite ongoing awareness creation efforts by bank staff. In developing countries such as Ethiopia, digital banking is still at an early stage of development compared to neighboring nations (Bultum, 2014). Prior studies identified major barriers including security risks, lack of trust, inadequate ICT infrastructure, and limited competition in the banking sector (Bultum, 2014). Technological innovation plays a significant role in enhancing banking efficiency and enabling customers to perform transactions without physically visiting branches (Mohammed, 2014). Furthermore, empirical findings indicate that technology readiness, income level, and perceived security positively influence customers' decisions to use digital banking services (Lakemariam, 2015).

However, most previous studies in Ethiopia have largely focused on the supply side, particularly bankers' perceptions of electronic banking adoption (Mohammed, 2014), while limited research has examined digital banking adoption from the customers' perspective. Although a few studies explored factors influencing consumers' adoption intentions (Gadise & Tekabe, 2017), comprehensive investigations remain scarce. International studies also concentrated mainly on customer perceptions of mobile applications and technology acceptance models rather than contextual barriers in developing economies (Emad Ahmed, 2021; Alghizzawi, 2020). Therefore, this study seeks to address these research gaps by identifying and analyzing the key determinants influencing customers' decisions to adopt digital banking services at the Commercial Bank of Ethiopia.

2.1 Research Questions

1. What is the level of customers' awareness about the digital banking?
2. What is the effect of education level in adoption of digital banking services?
3. What is the effect of technology on digital banking service decision of customers?
4. What is the effect of privacy and security in adoption of digital banking services?

III. OBJECTIVES OF THE STUDY

3.1 General objectives

The main objective of the study is to examine "factors affecting customers' decision to use digital banking services in Commercial Bank of Ethiopia in case of Samara district".

3.2 Specific objectives

- 1) To study about the level of customers' awareness about the digital banking.
- 2) To examine the effect of education level in adoption of digital banking services.
- 3) To investigate the effect of technology level in adoption of digital banking services.
- 4) To study about the effect of privacy and security in adoption of digital banking services.

IV. SIGNIFICANCE OF THE STUDY

The outcomes and results of this paper had potential value to financial institutions, particularly banks to understand the determinants that affect their implementation related to digital banking service to their customers under Samara district. Moreover, this study is expected to help other researchers who will be interested to conduct further study regarding "factors affecting customers' digital banking adoption of customer decision to use digital banking services in Commercial Bank of Ethiopia in case of Samara district".

Finally, the study is very significant because it provides recommendations for banks about the action needs to be taken to implement digital Banking in effective way. Therefore, this study is more important to all management people of banking industry as well as the customers of the various banks for their awareness in using the digital banking services.

V. DESCRIPTIVE ANALYSIS

In this section, the data collected from 384 respondents was analysed using the SPSS section of descriptive statistics by dividing in to five parts. The first part analyses the demographic profile of the respondents that have the detail explanation of the gender, age, educational level and income level of respondents. The next part deals with the relationship of the various factors of the respondents with the adoption of digital banking that shows the adapter and non-adapters of digital

banking services in respect to the gender, technology, fear of security, age, educational level and income level of respondents. The third part analyse the general information of the respondents that consists of the information of respondents on the computer experience, adoption of digital banking, and security related to the choice for adoption of digital banking services. And the last part analyses the attitude of respondents towards the adoption of digital banking by analysing the different questions asked using the form of Likert-scale.

5.1 Demographic Profile of respondents.

Table 1: Demographic profile of respondents

demographic		Frequency	Percent
Gender	Male	232	60.42
	Female	152	39.58
Age	20-30	174	45.3
	31-40	167	43.49
	41-50	26	6.8
	51-60	12	3.12
	above 60	5	1.3
Educational Level	Elementary	41	10.68
	High school	56	14.58
	Preparatory	88	22.91
	Diploma(LVEL I,II,II or IV)	97	25.27
	Bachelor Degree	89	23.18
	Master Degree	12	3.12
	PHD or Assistant Professor	1	0.26
Monthly Income	Below 2,000 ETB	73	19.01
	2,000 to 5,000 ETB	126	32.81
	5,000-10,000 ETB	140	36.46
	above 10,000 ETB	45	11.71

Source: Primary Data, 2025

Table 1 shows the demographic characteristics of the respondents that include gender, age, educational level and monthly income of the respondents. The highest percentage of participant's gender in this study was males that were out of 384 respondents 60.42% of the respondents are male and only 39.58% of the respondents were female. From this the researcher observed that the highest number of bank customers using digital banking service were male.

In the case of classification of respondents by age the highest percentage was 20-30 years old, that was 45.3% of the respondents, followed by 31-40 years old, that was 43.49% of the respondents, and the next far followers of 41-50, 51-60 and above 60 years old with 6.8%, 3.12% and 1.3% of the respondents respectively. From this result the researcher conclude that the highest number of bank customers were between age of 20 to 40 years that indicate youngest age group, that consists about 88.9% (45.3%+43.49%) of the respondents.

Regarding the educational level of the study participants, the highest percentage of them has holders of diploma that was 25.27% and followed by BA degree holder, preparatory, high school, master of art degree, and PhD holders with 23.18%, 22.91%, 14.58%, 10.68%, 3.12% and 0.26% of the respondents respectively. From the result it is clearly observed that the highest percentage of the respondents were the holders of diploma which is 25.27% of the respondents but the researcher doesn't conclude that the highest number of bank customers are diploma holders because educational level is

one of the strata that the respondent was grouped to identify the income level has an impact on the adoption of digital banking or not. Hence, educational level is the criteria to select the respondents and it does not indicate the view of the total customers of the bank regarding of their educational level.

On the other hand, the highest percentage of participant’s monthly income ranges on between 5,000-10,000 ETB that was 36.46% of the respondents followed by 2,000 to 5,000 ETB, below 2,000ETB, and above 10,000 ETB with 32.81%, 19.01% and 11.71% of the respondents respectively. From the result it is clearly observed that the highest percentage of the income of the respondents were between 5,000-10,000 ETB.

But, the researcher does not conclude that the highest number of bank customers income were between 5,000-10,000 ETB because income level is one of the strata that the respondent was grouped to identify the income level influences the adoption of digital banking or not. Hence, income level is the criteria to select the respondents and it does not indicate the view of the total customers of the bank regarding of their income level.

5.2 The general information of respondents

Table 2: The general Information of respondents

		Frequency	Percent
Technological innovation	No	113	29.43
	Yes	271	70.57
computer experience	No	169	44.01
	Yes	215	55.99
Adoption of digital Banking	Not adapted	147	38.29
	Adapted	237	61.71
Fear of security	No	106	27.60
	Yes	278	72.40

Source: Primary Data, 2025

From the above table 2, the results indicate that a majority of respondents (70.57%) perceive technological innovation positively, and 55.99% report having computer experience, suggesting a relatively good level of technological exposure among customers. In terms of usage, 61.71% of respondents have adopted digital banking services, while 38.29% have not yet adopted them, indicating moderate acceptance. However, a significant proportion (72.40%) express fear of security risks, highlighting security concerns as a major barrier to wider adoption. This implies that although customers are generally aware of technological advancements and many have adopted digital banking, perceived security threats remain a critical challenge affecting full acceptance and continued usage.

5.3 Education Level of the Respondents with adoption of Digital Banking

Table 3: The relation of educational level with adoption of digital Banking

			Adoption of digital Banking		Total
			Not adapted	Adapted	
Educational Level	Elementary	Count	15	26	41
		% within Educational Level	36.59%	63.41%	100%
		% within Adoption of digital Banking	3.9%	6.78%	10.68%
	High school	Count	22	34	56
		% within Educational Level	39.29%	60.71%	100%
		% within Adoption of digital Banking	5.72 %	8.86%	14.58%
	Preparatory	Count	30	58	88
		% within Educational Level	34.10%	65.90%	100%
		% within Adoption of digital Banking	7.81%	15.10%	22.91%
	Diploma(LEVEL I, II, III or IV)	Count	43	54	97
		% within Educational Level	44.33%	55.67%	100%
		% within Adoption of digital Banking	11.20%	14.07%	25.27%
	Bachelor Degree	Count	43	46	89
		% within Educational Level	48.31%	51.69%	100%
		% within Adoption of digital Banking	11.20%	11.98%	23.18%
	Master Degree	Count	5	7	12
		% within Educational Level	41.67%	58.33%	100%
		% within Adoption of digital Banking	1.30%	1.82%	3.12%
PHD or Assistant Professor	Count	0	1	1	
	% within Educational Level	0%	100%	100%	
	% within Adoption of digital Banking	0%	0.26%	0.26%	

Source: Survey Questionnaire, 2025

The table 3 shows the relationship between educational level and adoption of digital banking among respondents. The results indicate that digital banking adoption differs across educational groups. Among respondents with elementary education, 63.41% have adopted digital banking, while 36.59% have not. Similarly, high school respondents show an adoption rate of 60.71%, and those with preparatory education show a higher adoption rate of 65.90%. This suggests that individuals with lower or intermediate levels of education are also actively using digital banking services.

However, among respondents with diploma qualifications, 55.67% have adopted digital banking, while 44.33% have not adopted it. For bachelor’s degree holders, the adoption rate is 51.69%, showing a nearly equal distribution between adopters and non-adopters. Meanwhile, master’s degree holders show 58.33% adoption, and the single PhD/Assistant Professor respondent has fully adopted digital banking. Overall, digital banking adoption is generally higher than non-adoption across most educational levels, but the adoption rate does not consistently increase with higher education levels, indicating that other factors such as digital literacy and access to technology may influence adoption.

5.4 The relation of fear of security and adoption of digital Banking

Table 4: The relation of fear of security and adoption of digital Banking

			Adoption of digital Banking		Total
			Not adapted	Adapted	
Fear of security	No	Count	103	53	156
		% within fear of Security	66.03%	33.97%	100%
		% within Adoption of digital Banking	26.82%	13.80%	40.62%
	Yes	Count	89	139	228
		% within fear of Security	39.04%	60.96%	100%
		% within Adoption of digital Banking	23.17%	36.21%	59.38%

Source: Primary Data, 2025

Table 4 shows the relation of fear of security with the adoption of digital banking. The table indicates from 60.96% of respondent who replied that digital services are secured 36.21% were adapting digital banking fear of security. While from 33.97% of the respondent who replied that digital services are not secured 66.03% were not adapted to the security of digital services. From the result, the researcher observed that there is a difference in security between adaptors and non-adaptors. Therefore, security of digital banking affects the adoption of digital banking.

VI. RESULTS OF THE STUDY

The result of the study was tested using the one-way ANOVA and the significance of the correlation between the dependent variable (adaption of digital banking) and independent variables (computer experience, educational level and security).

6.1 Computer Experience and Adoption of Digital Banking

Table 5: The significance of correlation of Computer Experience and Adoption of digital Banking

		Adoption of digital Banking
Computer experience	Pearson Correlation	.558
	Sig. (2-tailed)	.000
	N	384

Source: Survey Questionnaire, 2025

Table 6: ANOVA table of Computer Experience with Adoption of digital Banking

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	26.644	1	26.644	156.686	.000
Within Groups	58.836	383	.170		
Total	85.480	384			

Source: Survey Questionnaire, 2025

The result in table 6 shows that there is a strong positive correlation of 0.558 between computer experience and adoption of digital banking with a significant p value of 0.000 at 5% significant levels. Table 18 also shows the P value of 0.000 that is less than the significance point ($P < 0.05$) this indicates the relation is significant. Hence, it means that the Computer experience of the customers have a positive significant impact on the adoption of digital banking and the customers who has a computer experience adapts edigital banking than customers who didn't has an experience in computer. The result is consistent with the findings of the Wadie Nasir, (2011), Garedachew, (2010) and Mohamed A, (2012).

6.2 Education Level and Adoption of Digital Banking

Table 7 : Significance correlation of educational level and adoption of digital Banking

		Adoption of digital Banking
Educational Level	Pearson Correlation	.627
	Sig. (2-tailed)	.000
	N	348

Source: Survey Questionnaire, 2025

The result in table 7 shows that there is strong positive correlation of 0.627 between educational level and adoption of digital banking with a significant p value of 0.000 at 5% significant levels.

Table 8 ANOVA table of educational level with adoption of digital Banking

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	43.662	3	14.554	119.725	.000
Within Groups	41.818	381	.122		
Total	85.480	384			

Source: Survey Questionnaire, 2025

Table 8 also shows the P value of 0.000 that is less than the significance point ($P < 0.05$), this indicates the relation is significant. Hence, from this result it can be observed that the educational level of the customers have a positive significant impact on the adoption of digital banking and the customers with higher educational level adapts digital banking that the customers with lower educational level. The findings of Shemsul H. and Bilal M, (n.d), Mutengezanwa M., Mauchi F, (2013), Garedachew, (2010), Byoung, et.al (n.d), and Ernest, et.al, (2012), supported the result of the study.

6.3 Fear of Security and adoption of Digital Banking

Table 9: Significance correlation of Fear of Security and adoption of digital Banking

		Adoption of digital Banking
Fear of Security	Pearson Correlation	-.475
	Sig. (2-tailed)	.000
	N	348

Source: Survey Questionnaire, 2025

Table 10: ANOVA table of fear of security with adoption of digital Banking

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	19.247	1	19.247	100.548	.000
Within Groups	66.233	383	.191		
Total	85.480	384			

Source: Survey Questionnaire, 2025

The result in table 10 shows that there is strong negative correlation of 0.475 between fear of security and adoption of digital banking with a significant p value of 0.000 at 5% significant levels. Table 4.25 also shows the P value of 0.000

that is less than the significance point ($P < 0.05$) this indicates the relation is significant. Hence, it means that the fear of security of the customers have a negative significant impact on the adoption of digital banking and the customers with lower level of fear of security on digital banking adapts digital banking that the customers with higher level of risk. The result of the study supported by the findings of the Wadie Nasir, (2011), Sonja Grabner K. and Robert J, (2011), Ayana Gemechu (2014), Byoung, et.al (n.d), Wondwossen and Tsegai(2005), Khalfan, et.al, (2006), Sahah ,et.al, (2005), Yang, (1997) and Sathye, (1999).

VII. CONCLUSION

The study concludes that computer experience, educational status have a positive and statistically significant effect on customers' adoption of digital banking in Ethiopia, while fear of security has a negative significant impact. The findings further reveal that although most customers recognize the benefits of digital banking, inadequate information and security concerns hinder full adoption. Therefore, enhancing digital literacy, improving customer awareness, and strengthening security assurance mechanisms are essential to increase the acceptance and effective utilization of digital banking services.

In general, the results of this study offer additional insights into the current digital banking adoption situation and its implications for digital banking growth in Ethiopia as an example of a developing country. Furthermore, the understanding of the determinant of digital banking adoption identified in this study may help to identify the best course of actions to promote its development. It will also be valuable to all banking industries of the country to increase their awareness and understanding of digital banking benefits.

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