

Research Article

Factors Influencing the Usage of Mobile Banking Service Technology: A Case in the Commercial Bank of Ethiopia Harar City Branches

Abebe Geleta , Abebe Tilahun Kassaye*

Department of Public Financial Management and Accounting, Ethiopian Civil Service University, Addis Ababa, Ethiopia

Abstract

The purpose of this study is to investigate the factors influencing the usage of mobile banking service technology by a commercial bank in Ethiopia, Harar city. This study uses the TAM model to look at factors that influence how people use mobile banking services in a commercial bank in Harar, Ethiopia. It includes factors like how useful people find it, how easy they think it is to use, the risk they feel about security or privacy, how much they trust it, and how aware they are as important elements. The study employed a quantitative approach with both explanatory and descriptive research designs. This study was conducted on the basis of information acquired from clients of the commercial bank of Ethiopia's five branches in the city of Harar. A survey was conducted via a questionnaire; 385 of the 400 issued surveys were used. The data was analyzed with SPSS version 20. The research results revealed that perceived usefulness, perceived ease of use, and perceived awareness had a significant positive effect on mobile banking usage and that major factors influencing mobile banking perceived trust had a significant negative effect on mobile banking usage, while it was found that perceived risk had no significant negative effect on mobile banking users in Harar. The study suggests that banks should make their mobile banking services as simple and easy to use as possible so customers do not find them complicated or hard to use.

Keywords

Usage of Mobile Banking Service, TAM, Perceived Usefulness, Perceived Ease of Use, Perceived Risk, Perceived Trust, Perceived Awareness

1. Introduction

Mobile banking is used for the operation of the bank for current accounts and savings for deposit or payment accounts. This is because mobile phones and other handheld devices have been firmly established as alternative forms of payment in technologically advanced societies [40]. Mobile banking is one of the emerging trends in the marketing of products. As such, it is regarded as a tool of electronic marketing, which is

characterized by the use of interactive wireless media to provide customers with product information at any time in a way that benefits stakeholders or by a set of procedures that enables an organization to interact with its audience [3]. As a result, many businesses have started utilizing mobile marketing to streamline their processes and remain in constant contact with their clients, including banks, which have started

*Corresponding author: abebetile@gmail.com (Abebe Tilahun Kassaye)

Received: 30 August 2025; **Accepted:** 22 September 2025; **Published:** 9 October 2025



Copyright: © The Author(s), 2025. Published by Science Publishing Group. This is an **Open Access** article, distributed under the terms of the Creative Commons Attribution 4.0 License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution and reproduction in any medium, provided the original work is properly cited.

to increase the number of mobile banking services they offer. This form of service is regarded as an advanced method of offering banking services to clients because it calls for a foundational understanding from clients, interactional experience, and a shift in the clients' traditional banking practices [30].

Over the years, many studies on mobile banking have been done in North America, Europe, and Asia. Africa, including Ethiopia, is still developing, and mobile banking is a new technology there. However, studies from the mid-2000s showed that mobile banking has grown very quickly in Sub-Saharan Africa compared to other parts of the world, and is expected to continue growing [19]. Researchers like [1, 29, 41] and others have looked at variables that influence customers' intentions to use mobile banking. But studies on this topic in Ethiopia are very limited.

In Ethiopia, some research has explored mobile banking as part of electronic banking challenges and barriers [5, 12]. To the best of the researcher's knowledge, no study has specifically looked at the factors affecting mobile banking usage in Ethiopia, particularly in Harar. This gap in research motivates student researchers to explore these issues and better understand mobile banking technology in the banking sector.

2. Literature Review

2.1. Factors Affecting Mobile Banking Usage

Many researchers have used different theory frameworks to understand new technological adoption. One of the most well-known frameworks is the Technology Acceptance Model (TAM) [8], which includes two beliefs: perceived ease of use (PEOU) and perceived usefulness (PU) to determine how people accept a technology. Some studies have expanded TAM by including perceived risk, trust, and awareness, adding four new constructs to better understand mobile banking adoption in Taiwan. These are perceived credibility, perceived self-efficacy, perceived cost, and perceived risk [28].

Technology acceptance model (TAM)

This is the most pervasive approach where [7] presented a theoretical model aiming to predict and explain ICT usage behavior, that is, what causes potential adopters to accept or reject the use of information technology. Theoretically, the TAM is based on the theory of reasoned action (TRA). In the TAM, two theoretical constructs, perceived usefulness and perceived ease of use, are the fundamental determinants of system use and predict attitudes toward the use of the system, that is, the user's willingness to use the system.

2.1.1. Perceived Usefulness

According to the TAM, "perceived usefulness is the degree to which a person believes that using a particular system

would enhance his or her job performance" [8]. Perceived usefulness is the degree to which a person thinks that adopting mobile banking would benefit them. In the context of mobile banking services, the effect of perceived usefulness has received widespread recognition [6]. Previous research has consistently argued that there is a positive relationship between the perceived usefulness of mobile banking, mobile banking intentions and attitudes toward mobile banking and mobile banking usage [2]. For example, [6] examined the contributing factors and determined that perceived usefulness was an important factor in fostering a positive attitude towards accepting internet banking services. Additionally, there is a strong correlation between the use of mobile banking and the perceived usefulness of mobile banking in the literature on mobile banking [7, 13, 43].

Thus, the research hypothesis was as follows:

H₁: Perceived usefulness has a significant positive effect on the usage of mobile banking services.

2.1.2. Perceived Ease of Use

Perceived ease of use refers to how easy a person thinks it will be to use a method. Previous studies have shown that perceived ease of use has a strong effect on usage intention, either directly or through its influence on perceived usefulness [42]. Giving customers information about products, their benefits, and how to use them helps them feel more comfortable in using mobile banking [20]. Additionally, perceived ease of use helps build trust with banks by showing that banks care about their users [27]. Many previous studies have also shown that perceived ease of use has a positive impact on the adoption of mobile commerce [21].

Thus, the research hypothesis was as follows:

H₂: Perceived ease of use has a significant positive effect on the usage of mobile banking services.

2.1.3. Perceived Risk

Perceived risk is defined as the uncertainty involved in using a method to achieve a desired outcome [14]. According to [26], performance risk refers to the loss caused by a failure of the mobile banking server. The term "security/privacy risk" means the chance of losing money because of fraud or hacking. Time risk is the term for the inconvenience and loss of time caused by payment processing delays or difficult navigation.

A study by [44] on mobile commerce, where more than three-fifths (60%) of the respondents had online transaction experience, revealed that perceived risk positively influences the behavioural intent to use a product. Based on past research, it is hypothesized that security, financial, time, social, and performance risks have a negative effect on mobile banking adoption [44].

Thus, the research hypothesis was as follows:

H₃: Perceived risk has a significant negative effect on the usage of mobile banking services.

2.1.4. Perceived Trust

Trust is a variable that has drawn the attention of many scholars and plays an important role in the "adoption of mobile payments" [32]. Trust is essential for building and maintaining successful relationships between customers and businesses [11, 14]. Brand loyalty is simply defined as the repetitive purchase of preferred brand products or services. A favourable attitude toward the mobile vendor results in repeat buying behavior [27]. For the purpose of this study, [18] reported that customer loyalty in an online business is positively and directly associated with customer loyalty for online services [18]. Since mobile banking is considered an extension of internet banking [4], it is therefore considered to be part of online services. Hence, a customer's operations in mobile banking positively influence the service adoption of mobile banking.

Thus, the research hypothesis was as follows:

H₄: Perceived trust has a significant negative effect on overall mobile banking services.

2.1.5. Perceived Awareness

Awareness plays a key role in speeding up product sales, and this is supported by evidence from different participants. How aware people are a big part of why they might want to use self-service options [35]. The amount of information customers have about influencing adoption. According to [39], even if the use of an online banking service is still a relatively new experience for many people, a significant obstacle to the adoption of internet banking is a lack of awareness of the service. Customers were shown to be ignorant of the options, benefits, or drawbacks associated with internet banking in an empirical study of Australian consumers.

Thus, the research hypothesis was as follows:

H₅: Perceived awareness of mobile banking services has a significant positive effect on the usage of mobile banking services.

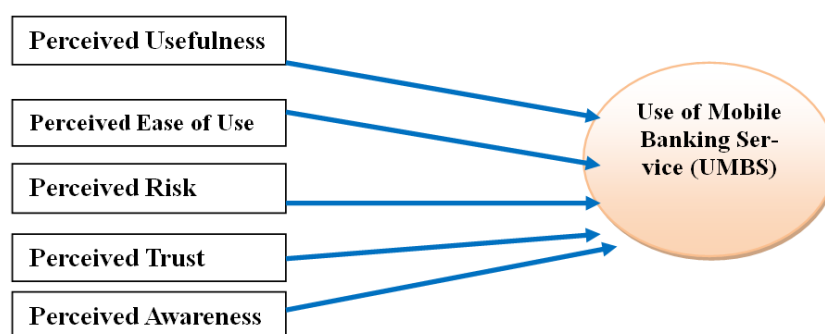
2.2. Benefits of Mobile Banking

Mobile banking, a commercial technique combining technology and commerce, allows customers to access specialized services without visiting traditional banks. Supported by SMS, it saves time, allows location flexibility, and offers convenience [34]. Mobile banking saves banks time, enabling effective marketing and sales efforts. It reduces costs of courier, communication, and paper work, and reduces the need for branch visits. This fosters a positive relationship, increasing customer loyalty [31]. Mobile banking offers numerous benefits, such as saving time and travel costs for customers, enabling timely payment of utility bills, and avoiding fines. Despite its widespread use, it remains underutilized [9, 31, 37].

2.3. Research Gap

According to [10] provided evidence for several factors that affect customers' intentions to utilise mobile banking; however, research on mobile banking has received less attention in the Ethiopian literature [36]. The existing research in Ethiopia has looked at the challenges and barriers related to mobile banking within electronic banking, as seen in studies by [5, 12, 15, 33]. To the best of the researcher's knowledge, no study has investigated the factors influencing the use of mobile banking service technology in Ethiopia, particularly in Harar city. To better understand how this modern technology is used in the banking sector, this study focuses on the issues that affect how people use mobile banking services.

2.4. Conceptual Framework



Source: Reviewed from TAM Model [28] and DIT model [38].

Figure 1. Conceptual Framework.

3. Research Methodology

3.1. Description of the Study Area

Harar city, the capital of the Harari Region in Ethiopia, has a population of 273,000, with 62.6% living in urban areas and 37.4% in rural areas. The region is divided into six urban and three rural districts, with minority ethnic groups including Oromo, Amhara, and Harari. Followed Islam, Orthodox, Catholic, and Protestant religions (Harari Educational Bureau, 2018).



Source: Wikipedia, 2025

Figure 2. Map of the Harari Regional State.

3.2. Research Approaches and Design

Quantitative research involves gathering and classifying information in a way that is structured and predefined to ensure accurate measurement. This is important for making sure the data is reliable and easy to analyze [24]. To study the factors influencing the usage of mobile banking service technology in Harar city, a quantitative research approach is preferable to formulate hypotheses. Used both descriptive and explanatory research design.

3.3. Data Collection Methods

The main source of data came from questionnaires given to

customers of the Commercial Bank of Ethiopia in Harar city. The questions were closed-ended and used a five-point Likert scale, where 5 meant "strongly agree" and 1 meant "strongly disagree."

3.4. Target Population

The target populations are customers of the Commercial Bank of Ethiopia in Harar City who use mobile banking services. Among the eight branches of CBE in Harar city, five branches (*Harar branch, Jegol branch, Shenkor branch, Jenela branch, and Aboker branch*) that implement mobile banking were selected as the branch target population. According to information obtained from the CBE Harar branch, 285,000 customers currently use mobile banking in these five branches in Harar city.

3.5. Sample Size and Sampling Method

The sample size was chosen based on how precise the researcher wanted to be when estimating the population parameter at a specific confidence level. According to [45], a more straightforward formula is provided to determine sample sizes. The sample sizes were determined via the following formula. $e = 0.05$ or a 5% margin of error, together with a 95% confidence level, were assumed. The researcher used the following formula to determine the sample size.

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

Where

n = sample size

N = population size

e = sample error at 5%

$$n = \frac{285000}{1 + 285000(0.05^2)} = 399.44$$

$$28500/713.5 = 399.44$$

There for $n = 400$ approximately

The researcher divided this sample size among the branches using a convenience sampling method. This helped them reach out to respondents when they were using banking services. The representatives of each branch obtained by the researcher via proportional allocation are shown in the table below:

Table 1. Sample size determination.

No	Name of Branch	Active mobile banking user (N)	Sample size form each strata by using proportional method (n)
1	Harar branch	75,000	105
2	Jegol branch	61,000	86

No	Name of Branch	Active mobile banking user (N)	Sample size form each strata by using proportional method (n)
3	Shenkor branch	50,000	70
4	Jenela branch	44,000	62
5	Aboker branch	55,000	77
Total		285,000	400

Source: CBE Harar Branch Digital Department, 2023

The researcher used a purposive sampling method to obtain the opinions of the branches of the commercial bank of Ethiopia Harar city. The total sample size of the studies was 400, and the sample size or participants were determined via a statistical formula.

3.6. Model Specification

This research utilised multiple regression models to analyse the factors influencing mobile banking usage. The analysis was based on one dependent variable and five independent variables. The study used Pearson correlation and multiple regression techniques to look at how these variables are related.

Therefore, the form of the model is given by:

$$Y = \beta + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \epsilon_i$$

where Y is the dependent variable (usage of mobile banking).

X_1 , X_2 , X_3 , X_4 , and X_5 are the independent variables (perceived usefulness, perceived ease of use, perceived risk, perceived trust and awareness), and β_1 is the intercept term, which gives the mean or average effect on Y of all the variables excluded from the equation, although its mechanical interpretation is the average value of Y when the stated independent variables are set equal to zero. β_1 , β_2 , β_3 , β_4 , and β_5 refer to the coefficients of the respective independent variables, which measure the change in the mean value of Y per unit change in their respective independent variables.

Table 2. Summary of Variables.

Variable	Expected Sign (+/-)	Notation	Description
Dependent Variable			
Y		UMBST	Usage of Mobile Banking Service Technology
Independent Variable			
X1	+ve	PU	Perceived Usefulness
X2	+ve	PEOU	Perceived Ease of Use
X3	-ve	PR	Perceived Risk
X4	-ve	PT	Perceived Trust
X5	+ve	PA	Perceived Awareness

3.7. Validity and Reliability

Validity is the accuracy of a measuring tool in detecting actual differences between individuals, and is crucial in determining the validity of a data gathering method, as research problem nature and researcher's opinions often influence evidence [23].

According to [17], reliability refers to the consistency of measurements used in tests. Cronbach's alpha is a way to assess

the internal reliability of a questionnaire. Usually, a score of 0.70 or higher is considered acceptable for consistency.

Table 3. Reliability Statistics.

Constructs	Cronbach's Alpha	N of Items
PU	.892	5

Constructs	Cronbach's Alpha	N of Items
PEOU	.740	5
PR	.981	5
PT	.825	5
PA	.740	5

Source: Field survey data from May 2023 via SPSS 20

3.8. Data Analysis Method

The analysis method used was descriptive statistics, which involves organizing, summarizing, and describing data. This type of research focuses on describing the characteristics of individuals or groups. Additionally, inferential statistics, such as correlation analysis, can be used to determine the significance and direction of a correlation between two variables considered in this study and regression analysis to examine the relationship between the dependent variable (usage of mobile banking services) and the five independent variables, that is, perceived usefulness, perceived ease of use, perceived risk, perceived trust, and awareness, with Pearson correlation and linear multiple regression techniques.

3.9. Ethical Consideration

Due consideration was given to obtaining consent from each participant about their participation in the study. This study was conducted on a strictly voluntary basis. The researcher should respect the participant's citation and privacy. The findings of the research did not deviate from the outcome of the research. In addition, the researcher fully acknowledges all the reference materials used in the study.

4. Results and Discussion

This part of the paper presents the results of a study involving 400 questionnaires sent to Commercial Bank of Ethiopia customers in Harar and collected 385 questionnaires, revealing a response rate of 96.25%.

4.1. Correlations Analysis

To find out if there are relationships between variables, the researcher used bivariate correlation. The Pearson correlation coefficient ranges from -1.0 to +1.0 and shows the strength and direction of the relationship between two variables (Field, 2005).

Table 4. Correlations between variables.

Correlations		PU	PEOU	PR	PT	PA	UMBST
PU	Pearson Correlation	1					
	Sig. (2-tailed)						
PEOU	Pearson Correlation	.314**	1				
	Sig. (2-tailed)	.000					
PR	Pearson Correlation	-.515**	-.605**	1			
	Sig. (2-tailed)	.000	.000				
PT	Pearson Correlation	.411**	.276**	-.466**	1		
	Sig. (2-tailed)	.000	.000	.000			
PA	Pearson Correlation	.390**	.379**	-.519**	.351**	1	
	Sig. (2-tailed)	.000	.000	.000	.000		
UMBST	Pearson Correlation	.591**	.596**	-.858**	.389**	.536**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	

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

b. Listwise N=385

Source: Field survey data from May 2023 via SPSS 20

As shown in the correlation matrix, mobile banking usage is positively and significantly related to perceived usefulness ($r = 0.591$, p value = $0.000 < 0.01$). The study found that there are significant relationships between certain variables. Perceived ease of use ($r = 0.596$, p value = $0.000 < 0.01$) and perceived awareness ($r = 0.536$, p value = $0.000 < 0.01$) have strong positive relationships with the usage of mobile banking. Perceived risk ($r = -0.858$, p value = $0.000 < 0.01$) has a strong negative relationship, while perceived trust ($r = 0.389$, p value = $0.000 < 0.01$) has a weak positive relationship.

Based on these results, perceived usefulness, perceived ease of use and perceived awareness are strongly related to the

usage of mobile banking and have a statistically significant correlation. Changes in these variables are closely linked to changes in the dependent variable (usage of mobile banking). On the other hand, perceived risk and perceived trust are less strongly correlated than the other variables.

4.2. Regression Analysis

All the assumptions of the multiple regressions were satisfied under this study. For multiple regressions, the researcher checked the collinearity problem with the assumption of tolerance and variance inflation factor (VIF) statistics.

Table 5. Regression model summary.

Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.885 ^a	.784	.781	.568	1.600
a. Predictors: (Constant), PA, PT, PEOU, PU, PR					
b. Dependent Variable: UMBST					

Source: Field survey data from May 2023 via SPSS 20

As we can see in [table 5](#) above, the adjusted R square value is 0.781. This means that 78.1% of the variation observed in the usage of mobile banking can be explained by perceived usefulness, perceived ease of use, perceived risk, perceived trust and perceived awareness. In other words, 78.1% of the

potential usage of mobile banking can be attributed to independent variables. Our model explains 78.1% of the variation observed in usage of mobile banking, and the remaining 21.9% is unexplained that is likely due to other factors), which could be beyond the study's parameters.

Table 6. ANOVA.

ANOVA ^a						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	443.229	5	88.646	274.533	.000 ^b
	Residual	122.378	379	.323		
	Total	565.606	384			
a. Dependent Variable: UMBST						
b. Predictors: (Constant), PA, PT, PEOU, PU, PR						

Source: Field survey data from May 2023 via SPSS 20

As indicated from [table 6](#), analysis of variance (ANOVA) shows whether the regression model is significantly better at explaining the usage of mobile banks (dependent variable) than is the use of the mean as the best predictor. The ANOVA

results are highly significant ($F = 274.533$, $\text{sig} = .000$), indicating that perceived usefulness, perceived ease of use, perceived risk, perceived trust, and perceived awareness can significantly influence the usage of mobile banking. There-

fore, the overall results of the regression analysis show that this model is well constructed and well represented, as reflected in the variables selected. The standardized coefficient

B column gives us the coefficients of the independent variables in the regression equation, including all the predictor variables, as indicated below.

Table 7. Regression Results.

Coefficients							
Model	Unstandardized Coefficients		Standardized Coefficients		t	Sig.	Collinearity Statistics
	B	Std. Error	Beta				Tolerance
(Constant)	4.908	.369			13.305	.000	.684
1 PU	.207	.029	.204		7.050	.000	.628
PEOU	.170	.046	.111		3.667	.000	.442
PR	-.876	.047	-.672		-18.701	.000	.734
PT	-.087	.035	-.070		-2.515	.012	.694
PA	.144	.046	.090		3.130	.002	.684

a. Dependent Variable: UMBST

Source: Field survey data from 2023

$$\text{UMBST} = 4.908 + .204\text{PU} + .111\text{PEOU} + (-.672\text{PR}) + (-.070\text{PT}) + .090\text{PA} + \epsilon_i$$

Based on the results indicated in [table 7](#); the beta coefficients demonstrated that the five independent variables under study, with the exception of perceived risk, had a significantly positive influence on the usage of mobile banking (sig..001). The beta weight is the average amount that the dependent variable increases when the independent variable increases by one (all other independent variables are held constant). As these are standardized perceived trust, with a beta value of -.070, and risk, with a beta value of -.672, are the poorest predictors of usage of mobile banking when it is compared with the other explanatory variables under study, we can

compare them. Thus, the factors with the greatest influence on the use of mobile banking are perceived usefulness (.204), perceived ease of use (.111), and perceived awareness (.090). In contrast, perceived trust, with a beta value of -.070, and risk, with a beta value of -.672, is the poorest predictors of usage of mobile banking when it is compared with the other explanatory variables under study. Hence, perceived usefulness, perceived ease of use, perceived trust, and perceived awareness are the key factors influencing the usage of mobile banking in Harar city.

Table 8. Summary of the hypothesis.

Hypothesis	Effects	Decision	Significant level
H ₁ : the perceived usefulness has a positive effect on usage of mobile banking service	Significant Positive Effect	Do not reject H1	Beta1=0.204 P-Value=0.000 Sig<0.01
H ₂ : the perceived ease of use has a positive effect on usage of mobile banking service.	Significant Positive Effect	Do not reject H1	Beta2=0.111 P-Value=0.000 Sig<0.01
H ₃ : the perceived risk has a negative effect on usage of mobile banking service.	Significant Negative Effect	Do not reject H1	Beta3=-0.672 P-Value=0.000 Sig<0.01

Hypothesis	Effects	Decision	Significant level
H ₄ : the perceived trust has a positive effect on usage of mobile banking service.	Significant Negative Effect	Reject H1	Beta ₄ =-0.070 P-Value=0.012 Sig<0.01
H ₅ : the perceived awareness has a positive on usage of mobile banking service.	Significant Positive Effect	Do not reject H1	Beta ₅ =0.266 P-Value= 0.002 Sig<0.01

Source: From the result of Field Survey data may, 2023

Perceived Usefulness: Looking at the results in Table 7, the coefficient for perceived usefulness is 0.204, and the P-value is 0.000. Keeping other factors the same, perceived usefulness was found to have a positive and statistically significant impact on the use of mobile banking services, as the significance level is below 0.01. Therefore, the researcher should reject the null hypothesis that suggests perceived usefulness has no positive effect on using mobile banking. This finding consistent with [28] found, showing that perceived usefulness has a positive effect on how much people use mobile banking. It also agrees with [20], who pointed out that perceived usefulness strongly influences people's intentions to use mobile banking. One possible reason for this positive relationship is that many customers use mobile banking because they see the benefits and find it convenient and accessible anytime and anywhere.

Perceived ease of use: From Table 7, the coefficient for perceived ease of use is 0.111 with a P-value of 0.000. When other variables are held constant, perceived ease of use has a positive and statistically significant effect on mobile banking usage, as the significance value is less than 0.01. Thus, the researchers reject the null hypothesis that suggests perceived ease of use does not have a positive impact on mobile banking use. This conclusion is consistent with the findings of [21, 22], who found that perceived ease of use positively influences mobile banking usage in previous studies.

Perceived risk: Based on the results indicated in table 7 the coefficient for perceived risk is -0.672, and the P-value is 0.000. Keeping other variables the same, perceived risk was found to have a negative and statistically insignificant effect on the use of mobile banking services, as the significance value is less than 0.01. Therefore, the researcher should reject the null hypothesis that perceived risk has a negative but insignificant effect on mobile banking use. Importantly, this result is against the conclusions of [16, 25, 28], who all believed that perceived risk plays a key role in the design and development of mobile banking services.

Perceived trust: Based on the results indicated in table 7 the coefficient for perceived trust is -0.070 with a P-value of 0.012. Keeping other factors constant, perceived trust was found to have a negative and statistically significant effect on mobile banking usage, as the significance value is greater than 0.01. Therefore, the researchers reject the null hypothesis

that suggests there is no sufficient evidence to support a positive relationship between perceived trust and mobile banking usage. This outcome is inconsistent with [26], who found that higher levels of confidence in a service provider increase the likelihood of using mobile banking. It is possible that customers may be less likely to use mobile banking due to the negative impact of trust. It is probable that customers may be less willing to use mobile banking as a result of the negative impact of trust.

Perceived Awareness: From Table 7, the coefficient for perceived awareness is 0.266 with a P-value of 0.000. When other variables were held constant, perceived awareness has a positive and statistically significant impact on mobile banking usage, as the significance level is below 0.01. Thus, the researchers reject the null hypothesis that suggests perceived awareness has no positive effect on mobile banking use. This indicates a significant relationship between awareness and mobile banking usage, similar to the findings of [25], who found that awareness significantly influences customers' use of online and mobile banking. This can be explained by the fact that most bank customers believe they have the necessary information to use mobile banking, suggesting that this variable is an important factor affecting mobile banking usage in Commercial Bank of Ethiopia Harar City.

5. Conclusions

The study examines the factors influencing mobile banking service usage in Harar city. It found that perceived usefulness, ease of use, risk, trust, and awareness are key factors. The study found that customers perceive mobile banking as a practical and quick method for financial transactions. Ease of use is also positively influenced by banks' guidance. Perceived risk has a small effect on mobile banking usage, while perceived trust has a significant negative effect. Awareness is positively influenced by the familiarity of all mobile banking services, including transfers, account management, and deposits.

6. Future Research Directions

The contributions of demographic factors such as age and

gender to the use of mobile banking services were not thoroughly explored in this study. Future research can examine the influence of these demographic factors on the use of mobile banking service technology.

Abbreviations

ICT	Information Communication Technology
PA	Perceived Awareness
PEOU	Perceived Ease of Use
PR	Perceived Risk
PT	Perceived Trust
PU	Perceived Usefulness
TAM	Technology Acceptance Model
UMBST	Usage of Mobile Banking Technology

Conflicts of Interest

There is no conflict of interest to disclose. The authors declare that they have no competing interests regarding the publication of this article.

References

- [1] Al-Jabri, I. M. (2015). The intention to use mobile banking: Further evidence from Saudi Arabia. *South African Journal of Business Management*, 46(1), 23–34. <https://doi.org/10.4102/sajbm.v46i1.80>
- [2] Bhatti, T. (2007). Exploring Factors Influencing the Adoption of Mobile Commerce. *Journal of internet Banking and Commerce*, 12(3).
- [3] Bihari, S. C. (2014). Mobile Banking in India-Your Money In Your Pocket. *Journal on Management*, 9(3).
- [4] Brown, I., Cajee, Z., Davies, D., & Stroebel, S. (2003). Cell phone banking: Predictors of adoption in South Africa—An exploratory study. *International Journal of Information Management*, 23(5), 381–394. [https://doi.org/10.1016/S0268-4012\(03\)00065-3](https://doi.org/10.1016/S0268-4012(03)00065-3)
- [5] Bultum, A. (2012a). *Adoption of Electronic Banking System in Ethiopian Banking Industry: Barriers and Driver*.
- [6] Chen, Y., & Barnes, S. (2007). Initial trust and online buyer behaviour. *Industrial Management & Data Systems*.
- [7] Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319–340. <https://doi.org/10.2307/249008>
- [8] Davis, F. D., Bagozzi, R. P. and Warshaw, P. R.(1989). User Acceptance of Computer Technology: A Comparison of Two Theoretical Models, *Management Science* (35: 8), pp. 982-1003.
- [9] Deloitte. (2010). *Mobile banking: A catalyst for improving bank performance*. Deloitte. <http://www.deloitte.com>
- [10] Dineshwar, R., & Steven, M. (2013, February). An investigation on mobile banking adoption and usage: A case study of Mauritius. In *Proceedings of the 3rd Asia-Pacific Business Research Conference* (pp. 1–21).
- [11] Garbarino, E., & Johnson, M. S. (1999). The different roles of satisfaction, trust, and commitment in customer relationships. *Journal of Marketing*, 63(2), 70–87.
- [12] Garedachew, W. (2010). *Electronic Banking in Ethiopia-Practice, Opportunities and Challenges*. Addis Ababa, Ethiopia. Retrieved from Social Science Research Network. <http://dx.doi.org/10.2139/ssrn.1492006>
- [13] Gefen, D., Karahanna, E., & Straub, D. W. (2003). Trust and TAM in online shopping: An integrated model. *MIS Quarterly*, 51–90.
- [14] Gerrard, P., & Cunningham, J. B. (2003). The diffusion of internet banking among Singapore consumers. *International Journal of Bank Marketing*.
- [15] Gezahegn, K. (2016). *Factors Influencing Usage of Mobile Banking in Addis Ababa, Ethiopia*.
- [16] Gu, J.-C., Lee, S.-C., & Suh, Y.-H. (2009). Determinants of behavioral intention to mobile banking. *Expert Systems with Applications*, 36(9), 11605–11616.
- [17] Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (2003). *Multivariate data analysis* (5th ed.). Prentice Hall.
- [18] Harris, L., & Goode, M. (2004). The Four Levels of Loyalty and the Pivotal Role of Trust: A Study of Online Service Dynamics. *Journal of Retailing*, 80, 139–158. <https://doi.org/10.1016/j.jretai.2004.04.002>
- [19] International Telecommunications Union. (2005). *Mobile banking growth in Sub-Saharan Africa*.
- [20] Jeong, B. K., & Yoon, T. E. (2013). An empirical investigation on consumer acceptance of mobile banking services. *Business and Management Research*, 2(1), 31–40.
- [21] Khalifa, M., & Shen, K. N. (2008). Explaining the adoption of transactional B2C mobile commerce. *Journal of Enterprise Information Management*.
- [22] Kim, G., Shin, B., & Lee, H. G. (2009). Understanding dynamics between initial trust and usage intentions of mobile banking. *Information Systems Journal*, 19(3), 283–311.
- [23] Kothari, C. R. (2004). *Research methodology: Methods and techniques*. New Age International.
- [24] Kumar, R. (2018). *Research methodology: A step-by-step guide for beginners*. Sage.
- [25] Laforet, S., & Li, X. (2005). Consumers' attitudes towards online and mobile banking in China. *International Journal of Bank Marketing*, 23(5), 362–380. <https://doi.org/10.1108/02652320510629250>
- [26] Lee, M.-C. (2009). Factors influencing the adoption of internet banking: An integration of TAM and TPB with perceived risk and perceived benefit. *Electronic Commerce Research and Applications*, 8(3), 130–141.

- [27] Lin, H.-H., & Wang, Y.-S. (2006). An examination of the determinants of customer loyalty in mobile commerce contexts. *Information & Management*, 43(3), 271–282.
- [28] Luarn, P., & Lin, H.-H. (2005). Toward an understanding of the behavioral intention to use mobile banking. *Computers in Human Behavior*, 21, 873–891.
<https://doi.org/10.1016/j.chb.2004.03.003>
- [29] Masinge, K. (2010). *Factors influencing the adoption of mobile banking services at the Bottom of the Pyramid in South Africa*.
- [30] Medberg, G., & Heinonen, K. (2014). Invisible value formation: A netnography in retail banking. *International Journal of Bank Marketing*.
- [31] Mishra, S. K., & Sahoo, D. P. (2013). Mobile banking adoption and benefits towards customers service. *International Journal on Advanced Computer Theory and Engineering*, 2(1), 78–83.
- [32] Misra, S. K., & Wickamasinghe, N. (2004). Security of a mobile transaction: A trust model. *Electronic Commerce Research*, 4(4), 359–372.
- [33] Nesibu, H. (2017). *Mobile Banking adoption in Ethiopia: A Case of Commercial Bank of Ethiopia*.
- [34] Olasina, G. (2015). Factors influencing the use of m-banking by academics: Case study sms-based m-banking. *The African Journal of Information Systems*, 7(4), 4.
- [35] Palvia, P. (2009). The role of trust in E-Commerce relational exchange: A unified model. *Information and Management* 46, 213–220. *Information & Management*, 46, 213–220.
<https://doi.org/10.1016/j.im.2009.02.003>
- [36] Ramdhony, D., & Munien, S. (2013). An investigation on mobile banking adoption and usage: A case study of Mauritius. *World J. Soc. Sci.*, 3, 197–217.
- [37] Riquelme, H. E., & Rios, R. E. (2010). The moderating effect of gender in the adoption of mobile banking. *International Journal of Bank Marketing*, 28(5), 328–341.
- [38] Rogers, E. M. (2013). *Diffusion of innovations* (5th ed).
- [39] Sathye, M. (1999). Adoption of internet banking by Australian consumers: An empirical investigation. *International Journal of Bank Marketing*.
- [40] Singh, S. (2014). The impact and adoption of mobile banking in Delhi. *International Research Journal of Business and Management*, 1(7), Article 7.
- [41] Teo, T. (2011). *Technology Acceptance in Education: Research and Issues*. Rotterdam: Sense Publishers.
https://doi.org/10.1007/978-94-6091-487-4_1
- [42] Venkatesh, V. (2000). Determinants of perceived ease of use: Integrating control, intrinsic motivation, and emotion into the technology acceptance model. *Information Systems Research*, 11(4), 342–365.
- [43] Venkatesh, V., & Morris, M. G. (2000). Why don't men ever stop to ask for directions? Gender, social influence, and their role in technology acceptance and usage behavior. *MIS Quarterly*, 24(1), 115–139. <https://doi.org/10.2307/3250981>
- [44] Wu, J.-H., & Wang, S.-C. (2005). What drives mobile commerce? An empirical evaluation of the revised technology acceptance model. *Information & Management*, 42(5), 719–729.
- [45] Yamane, T. (1967). *Statistics: An introductory analysis* (2nd ed.).