

Original Article

Factors that Affect the Adoption of Mobile Banking in Case
Commercial Bank of Ethiopia, Gambella People's National
Regional State Branch, Gambella, Ethiopia

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Abstract

The primary aim of this study was to examine factors influencing consumers' adoption of mobile banking services Gambella region, Ethiopia. From the literature, seven determinant factors were identified. Each variable were measured by using yes or no questions. This study combines TAM and IDT along with perceived risk, awareness constructs and perceive trust. The primary data were collected using questionnaires distributed to customers of Commercial bank of Ethiopia for mobile banking users. The Statistical Package for Social Sciences (SPSS) version 20 was used to analyze the data. Descriptive and inferential statistics were used to address the research objectives and binary logistic regression analysis employed. The results revealed that, with exception of perceived risk, perceived usefulness, perceive ease of use; perceive trust, performance expectancy and awareness have positive and statistically significant with the adoption of mobile banking. This study recommended that, banks should encourage and create awareness to the public through emphasizing the benefits or advantages that can be gained from the mobile banking services to increase the adoption level and to provide further directions into mobile banking strategies for mobile network operators, banks and service provider to design and implement mobile banking services to yield higher consumer acceptance.

Keywords

adoption, factors, gambella, mobile banking, logit model

1. Background of the Study

Universally information technology development has brought about comprehensive changes in the banking industry, and therefore banking industry without information technology is impossible now a day. This issue is not only in developed countries but also in many least developing countries since information technology is constantly changing the activity of the banking industry globally. Banking sector is one part, where the technological revolution has brought comprehensive changes in the medium of delivery and offering banking services (Govindaluri, 2014). Mobile banking, which is also called M banking, is defined as a channel where by a customer interacts with a bank via a mobile device, such as a mobile phone or Personal Digital Assistant (PDA). Barnes and Corbitt (2001), M-banking is a subset of banking as it allows everyone easy access to their banking operations via mobile handsets, Yu and Fang (2009). The advancement in Information Communication Technology (ICT) is playing a major role for the world in a numerous variety of business activities. Rapid development of information technology has also affected the banking industry world widely in different form. Banks seek always to achieve competitive advantage to be first in market so they keep looking for new technology which can improve the banking services.

So far, all over the world different researches have been done in identifying the factors affecting the adoption of mobile banking but resulted in different findings. For example Roselyne (2015) in his findings indicates that there is no significant relationship between perceived ease of use and adoption of Mobile banking technology. In other view Chian-Son (2012) reveals the perceived financial cost and perceived credibility are two crucial factors influencing people intention to adopt mobile banking. Furthermore Hanudin et al. (2013) found that the intention to use mobile banking is influenced by the extent of security and privacy associated within the context of mobile banking. Other researchers Tornatzky and Klein (1982) analyzed the adoption of mobile banking and explained that compatibility, relative advantage, and complexity had the most significant relationships with adoption across a broad range of innovation types. (Shallone & Simon, 2013) in their findings indicated that perceived usefulness, perceived ease of use, relative advantages, personal innovativeness and social norms have significant effect on users' attitude thus influence the intention towards mobile banking adoption, whilst perceived risks and costs deterred the adoption of the service. According research currently conducted in Addis Ababa by Tesfaye, M. (2018). Indicated that effort expectancy, perceive usefulness, perceive ease of use, perceive cost and mobile phone experience are major factors affecting mobile banking adoption whereas performance expectancy, perceive risk and perceive trust have insignificant effect on mobile banking adoption.

In spite of this, there is no consistency of the finding as to factors affecting the adoption of Mobile Banking, so this study would fill the above contradictory gaps. As a result, the focus of this study would examine factors that affect M-Banking adoption among customer of the selected commercial bank branch in Gambella Regional state.

2. Statement of the Problem

Innovative technologies create new markets and opportunities for the banking sector, and thus managing and supporting the customers in this new banking atmosphere has become a crucial issue for the players in the industry by Jayewardene and Foley (2000). Thus, now the question is all about how to select and take advantage of new systems of technology in the right technique and at the right time so that the banks can compete successfully. Developing new processes without having their returns threatened as a result of wasteful expenditure signifying that bank managers must be progressively aware of the opportunities that come with technological change. In order to rise to these challenges, service providers are finding it ever more energetic to improve their understanding of customer behavior patterns in banking and consumers adoption of new banking technology.

According to NBE annual report, (2016/17) the total number of mobile phone subscribers has reached 58 million. Contrary to the diversified advantages of mobile banking and huge number of mobile phone subscribers in Ethiopia (58 million as per NBE June 2016/17 report), mobile banking in Ethiopia is in an infant stage for Ethiopian bank customers. For instance per the unpublished annual report of Dashen Bank S.C as of 30th June 2017, mobile banking subscribers are only 19,462 out of 1.7 million customers constituting only 1% of the total customer base. As a result, paper based payment instruments like cash, checks and payment order continue to be widely used across the nation. (NBE, Financial Inclusion Strategy, April 2017). Unlike Ethiopia, mobile banking development in other African countries like Kenya has reached higher level. In Kenya M-Pesa (mobile money) is a mobile phone based money transfer financing launched in 2007 by Vodafone for safaricom and Vodacom, the largest mobile operators in Kenya and Tanzania. According to the safaricom's results for 2013/14, M-PESA had 18.2 million active customers (KARIUKI N, 2014).

It is known that mobile banking is related with several benefits which include reduced time of transaction and the need for physical bank branches. Beside this background, still it is observed that there have been visible challenges that have limited the adoption and use of the mobile banking. This is evidenced by the fact that the use of mobile banking services is much lower than initially expected and still underused, and the mobile banking market still remains very small when compared to the entire banking transactions. It is additional observed that the widespread adoption and bulky usage of mobile phones did not translate to adoption and usage of mobile banking. For instance, Kalikidan (2016) found out that the relative advantage, compatibility, perceived trust, perceived usefulness, and perceived risk were major influencing factors for mobile banking adoption. Whereas, perceived ease of use and awareness were found to have insignificant effect on mobile banking usage for CBE and United bank customers located in Addis Ababa, Ethiopia. And also according to Nebiyu (2017) the study revealed that Perceived Ease of use, Awareness, Trust had a positive influence on mobile banking adoption whereas perceived risk was found to have a negative impact. Whereas, perceived usefulness found to have no influence on the intention to adopt mobile banking, Tesfaye Matiwos (2018) found that effort expectancy, perceived usefulness, perceived ease of use, perceived cost and mobile phone experience are

major factors affecting mobile banking adoption whereas performance expectancy, perceive risk and perceive trust have insignificant effect on mobile banking adoption.

So many research has been conducted worldwide at different times indicate different findings with respect to factors affecting the adoption of mobile banking Furthermore, in Ethiopia as to the knowledge of the researcher is concerned, For these different findings and also very few researches were done on commercial bank of Ethiopia and different the private banks specifically they focus in Addis Ababa and also for this different finding that identifying the factors affecting the adoption of mobile banking is still researchable and need a profound further study and therefore, this study aimed to fill the contradictory gaps among different researches done in different places and different times. This study also tried to fill the knowledge since it is the first and the single study conducted in Gambella Regional commercial bank of Ethiopia. Thus, the major concern of this study is identifying factors affecting the adoption of mobile banking on customers of commercial bank of Ethiopia Gambella People's National Regional State branch.

3. Specific Objectives

1. To examine the impact of perceived usefulness on mobile banking adoption.
2. To assess how perceived ease of use affects adoption of mobile banking.
3. To assess how perceived risk affects the adoption of Mobile banking.
4. To evaluate how the performance expectancy affects the adoption of mobile banking
5. To evaluate the how perceive cost affects the adoption of mobile banking
6. To evaluate how the perceive trust affect the adoption of mobile banking.
7. To examine how the awareness of customer affect the adoption of mobile banking

4. Conceptual Framework

Independent Variable

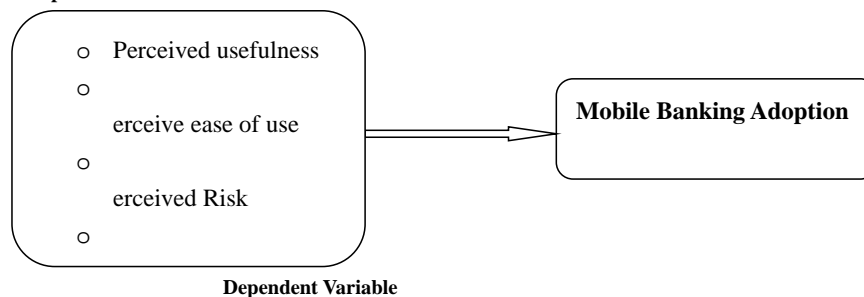


Figure 1. Conceptual Framework

Source: by partly adopted from other article and self-Design.

5. Methods

To achieve the objective of the study, the researchers used descriptive and exploratory research design. Descriptive research design was used to capture a population's characteristic and test hypothesis (Cooper & Schindler, 2008). The exploratory research design was used here because no previous studies existed on this topic and mixed approach was used in this study. Explanatory designs try to establish cause-and-effect relationships. The primary purpose of explanatory research design is to determine how events occur and which ones may influence particular outcomes (Dawson & Bob, 2006). Explanatory studies are characterized by research hypotheses that specify the nature and direction of the relationships between or among variables being studied. Therefore, this study would use both descriptive and explanatory method in order to explain the factors affecting mobile banking adoption in Gambella region. The study used cross-sectional study design and, both Primary and secondary data were used. Primary data as the main data for this study were collected from primary sources using structured questionnaire from selected sample of 371 respondents through simple and stratified random sampling techniques. Secondary data were collected from secondary sources such as annual reports, Journals, Books, and Articles, websites, and conference papers.

5.1 Method of Data Analysis

After the data were collected from primary and secondary sources, those data were prepared for readiness by editing, coding and logging in the computer using Statistical Package for Social Science (SPSS v.20). SPSS was used to produce descriptive and inferential statistics so as to drive conclusions and summarization regarding the population to see the overall agricultural investment financing challenges. In this research report, descriptive statistics was applied using percentages, and frequencies and inferential statistic which is correlation and regression analysis was also applied.

5.2 Model Specification

The Binary Logistic regression based on previous model designed by (Train, 1993) was adapted using the variables from the above conceptual framework and is stated as follows:

$$MBA = \alpha + \beta_1PU + \beta_2PEoU + \beta_3PE + \beta_4AW + \beta_5PC + \beta_6PT + \beta_7PR + \epsilon_i$$

5.3 Measurement of Variables

Dependent Variable: Mobile Banking Adoption.

In this study the predictor variables are users' income influence, mental skill to learn, security concerns, users' and whether or not customers are active mobile banking users and they are measured by 0 or 1 which takes the value of Yes or No.

Independent Variables: Independent variables in this study were accessed and adapted from existing literature. There are seven independent variables used in this study. They are Perceived Usefulness (PU), Perceived Ease of Use (PEoU), and Perceived Risk (PR), Performance expectancy (PE), Awareness (AW) and Perceive cost (PC), and Perceive trust (PT). Each of these variables measured between two to four questions which tailored within mobile banking adoption context. Hence, a total of 22 questions were constructed and captured the intention to adopt mobile banking. Responses to these

questions were measured by yes or No depending on nature of dependent variable and also in order to minimizing time of customers who come to the bank hall and accessing the bank account to fill the questionnaires quickly without consuming their time.

Table 1. Summary of 1 Description of Variables and Their Measurement

S/n	Name	Type	Code	Value
1	Mobile banking Adoption	Dummy	MBA	1 if adopt 0 if not adopt
2	Perceived usefulness	Dummy	PU	1 if useful, 0 if not useful
3				
3	Perceived ease of use	Dummy	PEoU	1 if ease, 0 if not ease
5				
4	Performance expectancy	Dummy	PE	1 if perform, 0 if not perform
5	Perceive trust	Dummy	PT	1 if trust of, 0 if not
			SI	
6	Perceive cost	Dummy	RC	1 if cost matter, 0 if not
7	Perceived risk	Dummy	PR	1 if risk, 0 if not risk
8	Awareness	Dummy	AW	1 if aware, 0 if not aware

Source: Researcher's design.

5.4 Findings

This section discusses the descriptive and inferential results of challenges of financing agricultural investment and the study of those factors having challenging effect on financing agricultural investment; so as to come up with conclusion and recommendations.

5.5 Descriptive Analysis Results

Table 2. Gender

		Frequency	Percent
	Male	234	63.1
Valid	Female	137	36.9
	Total	371	100.0

Source: SPSS output and own computation, 2023.

Demographics Table 2 provides data about participants' demographic profiles. The data shows that the number of male respondents is slightly higher than the number of female respondents, with males accounting for 63.1% and females 36.9% of the responses. This shows that women late behind men in using banking services which may also affect adoption of mobile banking adoption since the base for

mobile banking adoption in the bank led model of mobile banking is bank customers. The result is consistent with past the study done by kohsay (2009), more males than females tend to adopt self-service technology such as mobile banking and other similar technologies.

Table 3. Education

	Frequency	Percent
high school or below	34	9.2
Diploma	144	38.8
Valid Degree	123	33.2
masters and above	70	18.9
Total	371	100.0

Source: SPSS output and own computation, 2023.

Education level attained by respondents as indicated in the above table indicated that majority of the respondents were diploma holders which is 38.8 percent of the total respondents which is followed by first degree holders 33.2percent. Which means most of CBE customers in Gambella region (in the branches where data is collected) have higher educational status which is an opportunity to CBE to provide advanced services such as m-banking since ease of use of the service will be better.

Table 4. Age

	Frequency	Percent
less than 20 years	51	13.7
between 20 to 30 year	193	52.0
Valid between 31 to 40 year	100	27.0
between 41 to 50 year	20	5.4
greater than 50 years	7	1.9
Total	371	100.0

Source: SPSS output and own computation, 2023.

The age of majority of the respondents as shown from the above table is between 20-30 years of age numerically 52.0 percent. Whereas 27.0 percent falls between the ages of 31-40 that means more than 79 percent of the customers are within the age of 20- 40 years. The fact that the majority of the respondents are young and adult implies it is an opportunity for mobile banking adoption in the coming periods and that most of commercial banks customers are potential work force and these segment will be a potential target market of the mobile banking service channel.

Table 5. Income of Respondents

	Frequency	Percent
No income	96	25.9
less than 2000 per month	138	37.2
Valid Between birr 2000 to 4000 per month	74	19.9
Between birr 4001 to 8000 per month	49	13.2
more than birr 8000 per month	14	3.8
Total	371	100.0

Source: SPSS output and own computation, 2023.

Referring to the above table among the sample respondents 37.2 percent earns monthly income less than 2000 birr. Whereas 25.9 percent of the respondents earn no income, 19.9 percent of the respondents monthly income between 2000-4000 birr and 13.2&3.8 percent respondents earn between 4001-8000 and more than 8000 birr respectively. In terms of cumulative percent the 63.1 percent of respondents earn less than 2000 birr monthly.

Table 6. Occupation of the Respondents

	Frequency	Percent
government employee	167	45.0
private employee	111	29.9
Valid Student	77	20.8
Other	16	4.3
Total	371	100.0

Source: SPSS output and own computation, 2023.

Looking in the table above about the occupation of the respondents, most of them are government and private employed which is above 74.9 percent of the total respondents. And 20.8 and 4.3 percent are students and other as can be seen from the table above. This is a good opportunity for m-banking adoptions because those who are employed have time constraint since most of them are at work place when the bank branches are operational (have less time freedom). Hence, m-banking will give them time saving advantage by enabling customers to make banking transactions and payments such as payment of utilities and other bills, money transfer etc. without traveling to the bank branches.

Table 7. How Long You Have Been Using Mobile Banking

	Frequency	Percent
Valid less than one year	228	61.5

greater than one years	143	38.5
Total	371	100.0

Source: SPSS output and own computation, 2023.

About 61.5% of all mobile banking users have used these services for only less than one year, 38.5% have used these services for greater than one year. This shows that mobile banking users have not used and adopted these mobile banking services for a significant period of time, and that they are still learning about this kind of new mobile technology. However, there will probably be more experienced mobile banking users in the future.

Table 8. Mobile Banking Usage

	Balance Inquiry	Make a payment to beneficiary	Payment to otherslocal (Transfer to any CBE	money transfer any non CBE customer
N Valid	371	371	371	371
Missing	0	0	0	0
Mean	3.16	1.4798	2.6119	1.0243
Std. Deviation	.899	.60761	.77478	.15406
Minimum	1	1.00	1.00	1.00
Maximum	5	4.00	5.00	2.00

Source: SPSS output and own computation, 2023.

As shown in the above Table the means of customers' responses on respective statements ranged between 1 and 3.16. The highest mean, 3.16 dictates that most of the respondents used the service balance inquiry often. The second major service rarely used by the customers' is payment to others with a mean of 2.61. "Transfer to your beneficiaries" are placed 3rd rank as per customers response and finally since customers had never used local money transfer (transfer to any non CBE customers) this service was least ranked. This information is important in that it could be used by management to determine whether the least used services add any value or to embark on a fact finding mission from customers on their opinion of the services, and make the relevant decisions.

Table 9. Mobile Banking Adoption

	Response	Frequency	Percent
Are you active mobile banking user?	No	92	24.8
	Yes	279	75.2
Did your mobile phone support mobile	No	55	14.8

banking at the time you sign up for a service?	Yes	316	85.2
Didn't it require mental skill to use mobile banking at the time when you sign up?	No	133	35.8
	Yes	238	64.2
Does your income influence your use of mobile banking?	No	134	36.1
	Yes	237	63.9
Are there any security concerns that have been raised concerning your bank's mobile banking services?	No	248	66.8
	Yes	123	33.2

Source: SPSS output and own computation, 2023.

As indicated in the above table shown on the adoption of mobile banking 279(75.2%) of the respondents use mobile banking regularly which clearly shows that active user of the service and 92(24.8) of the respondents didn't use mobile banking regularly which means that they are not active user according to (Laekeamarim, 2015) those users were considered as registered mobile banking users, and also 316(85.2%) of the respondents phone were support mobile banking service when they sign up but 55 (14.8%) of the respondents phone didn't support the service when they sign for mobile banking, then 238(64.2%) of the respondents were agree with the statement it easy to learn which didn't require more mental effort when they sign up for using the service but 133 (35.8%) of the respondents respond that in order to use the service require mental skill and also 237 (63.9%) of the respondents agree with the statement means the usage the service with the influence of their income but 134 (36.1%) of the respondents usage of the service didn't influenced with their income level and finally 123 (33.2%) of the respondents agree with the statement their banks provide or the issues of security but 248 (66.8%) of the respondents responded that their banks didn't raise about the issues of security, in generally this indicate that the respondents didn't know the risk of using mobile banking.

4.2 Descriptive Statistics

Factors that can affect the adoption of Mobile Banking including Perceived Usefulness, Perceived Ease of Use, and Perceived Risk, trust, performance expectancy, awareness and cost were analyzed and the following descriptive results was obtained and presented below.

Table 10. Perceived Usefulness (PU)

	Response	Frequency	Percent
Do you that mobile banking is useful for your banking needs?	No	123	33.2
	Yes	248	66.8
Do you think Using Mobile Banking would make it easier for you to carry out my tasks?	No	139	37.5
	Yes	232	62.5

In general, I think using mobile banking is useful?	No	115	31.0
	Yes	256	69.0

Source: SPSS output and own computation, 2023.

The first research question involved analyzing the relationship between perceived usefulness and the adoption of mobile banking technology at Gambella region. Yes or No was used to measure the respondent's statements concerning the effect of Perceived Usefulness (PU) on the adoption of mobile banking technology at Gambella region. From the above finding, 66.8% yes that Using mobile banking would useful for their banking needs and 33.2% respondents didn't agree with the statement. This indicates that using mobile banking would enable them to use their banking activities, Respondents were asked about the usefulness of mobile banking service around 69.0 % of the respondent favoring its usefulness. In addition to this, almost 31.0% of respondents were opposed mobile banking usefulness. These indicate that favorable opportunity for banks to induce more mobile banking users.

Table 11. Perceived Ease of Use (PEoU)

	Response	Frequency	Percent
Do you think that learning to use mobile banking would be easy?	No	97	26.1
	Yes	274	73.9
Do you think that interaction with mobile banking doesn't require a lot of mental effort?	No	103	27.8
	Yes	268	72.2
Is it easy to use mobile banking to accomplish my banking task?	No	74	19.9
	Yes	297	80.1

Source: SPSS output and own computation, 2023.

In the above table when they were further asked if they think it will not take them lots of time to learn how to use mobile banking services 73.8% of the respondents agreed that learning to use mobile banking would be easy. While asked if mobile banking would make it easier for them to accomplish their tasks 80.1% respondents agreed and 19.9% didn't agree with the statement. In addition to the above when asked in related with interaction with mobile banking 72.2% of the respondents agreed with the statement means interaction with mobile banking didn't requires mental effort but 27.8% of the respondents didn't agreed with the statement means that it requires mental skill to interact with mobile banking. Therefore, most of the respondents agree that the mobile banking is ease to learn, require less mental effort, easy to use and doesn't require training. Based on the empirical evidence from technology acceptance model (Mohammad, 2013), if mobile banking is perceived to be easy to use then users will have intention to adopt and use m-banking. And also, this is in line with (Hoppe et

al. 2001) which recommend that the more complex a new technology is perceived to be, the less likely it will be used and the more ease of use the more likely to be used by customers.

Table 12. Performance Expectancy (PE)

	Response	Frequency	Percent
Mobile banking service accomplishes my banking task quickly?	No	194	52.3
	Yes	177	47.7
Using mobile banking improve my banking transaction quickly?	No	153	41.2
	Yes	218	58.8

Source: SPSS output and own computation, 2023.

As it is shown in the table above regarding with the performance expectancy of mobile banking with the way customers like to mobile banking accomplish transactions quickly 52.3 % agreed and 47.7% disagreed to the statement and also 58.8% agreed but 41.2% are disagreed with the statement mobile banking improve bank transaction.

Table 4.2.4 Perceive Risk (PR)

	Response	Frequency	Percent
Do you think that mobile banking service may not perform well and may process payments incorrectly because of network problems?	No	103	27.8
	Yes	268	72.2
Do you worried about using mobile banking service because other people may be able to access your account?	No	101	27.2
	Yes	270	72.8
Do you think that when transferring money through mobile banking, are you afraid that you may lose your money due to careless mistakes such as wrong input of accc wrong input of the Amount of money?	No	131	35.3
	Yes	240	64.7
In general, do you think that using mobile Banking is risky?	No	140	37.7
	Yes	231	62.3

The first question in the above table was to measure the functionality of mobile banking from network point of view. Accordingly, the data collected indicated that 268 respondents (72.2%) agree to the question, the first question in the above table was to measure the functionality of mobile banking from network point of view. Accordingly, the data collected indicated that 268 respondents (72.2%) agree to the question, 103 respondents (27.8%) disagree. The second question for the privacy concerns of the respondents when asked if they are concerned about other people accessing their account when using

批注 [A1]:

mobile banking 72.8% of them agreed and 27.2% disagreed with the statement. The third question was to measure whether customers fear while transacting using mobile banking due to different reasons like mistake in using their account, inputting wrong amount. Accordingly, 240 respondents (64.7%) agree to the question but 131 respondents (35.3%) disagree. The fourth question related with using of mobile banking indicated that 62.3% respondents agreed using of mobile banking is risky and 37.7% disagree with the statement. The result could indicate that perception of risk regarding the mobile banking affects its adoption and further growth. And further the result shows that most of the respondents didn't have an aware about the risk of mobile banking.

	Response	Frequency	Percent
Do you know about mobile banking services?	No	114	30.7
	Yes	257	69.3
Would you aware that of all the available services on mobile banking?	No	202	54.4
	Yes	169	45.6
In general, do you have received enough information about mobile banking service?	No	180	48.5
	Yes	191	51.5

Source: SPSS output and own computation, 2023.

The sample respondents' response with regard to the awareness of customers about the existence of mobile banking services as stated in the above Table, 69.3 percent of respondents are aware of the existence of mobile banking service in the country whereas only 30.7 percent of the respondents lack awareness about the existence of mobile banking service. This implies that most CBE customers in Gambella know the existence of m-banking but this does not mean that customers have adequate information about m-banking and also in addition to this the respondents were asked on all available services on mobile banking about 45.6% respondents are aware and 54.4% respondents were not aware this indicate that creating awareness on available service is low this indicated that detailed information and understanding about the service will required. And finally the respondents asked about the sufficiency of information received about mobile banking services 51.5% receive sufficient information and 48.5% respondents didn't receive enough information. This shows us commercial banks specifically CBE needs to work hard to make customers understand m-banking advantages in detail.

Table 14. Perceive Cost RA)

	Response	Frequency	Percent
Transaction fee is expensive to use?	No	119	32.1
	Yes	252	67.9
Access cost is expensive to use?	No	105	28.3

Yes	266	71.7
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Source: SPSS output and own computation, 2023.

Out of the total respondents 67.9% were respond yes means that mobile banking transaction fee is expensive to use 71.7% responded by yes to the access cost to use mobile banking is expensive to use

Table 15. Perceive Trust (PTRU)

	Response	Frequency	Percent
In using mobile banking I believe that my transactions are secured?	No	104	28.0
	Yes	267	72.0
In using mobile banking my privacy is secured?	No	125	33.7
	Yes	246	66.3
In using mobile banking my information kept confidentially?	No	137	36.9
	Yes	234	63.1

Source: SPSS output and own computation, 2023.

As shown in the above Table 267 (72.0%) of the respondents agree with the statement indicate that in using mobile banking the transaction are well secured and 104 (28.0%) of respondents didn't agree with the statement and also 246 (66.3%) of the respondents agree with statement that in using mobile bank the privacy is well secured and also 125 (33.7%) of respondents didn't agree with the statement and finally 234 (63.1%) agree with the statement in using mobile banking the information is kept confidential but 137 (36.9%) of the respondents didn't agree with the statement in generally majority of the respondents agreed with the stated items.

5. Correlation and Regression Analysis Result

5.1 Correlation Analysis Result

Table 16. Correlation Matrix Spearman's Rho

	PU	PEoU	PE	AW	PC	PT	PR
PU	1.000						
PEoU	.121*	1.000					
PE	.051	-.030	1.000				
AW	.050	.063	.072	1.000			
PC	-.034	-.010	-.044	.119*	1.000		
PT	.137**	.151**	.109*	.096	.080	1.000	
PR	.094	-.021	.042	.078	.010	.127*	1.000

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

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

5.2 Logistic Regression Analysis

In this part of the research further analysis has been conducted in order to test the influence of independent variables: Perceived usefulness, perceive ease of use, performance expectancy, perceived risk, awareness and perceive trust on the dependent variable which is the adoption of mobile banking. Logistic regression analysis is preferable due to the nature of the dependent variable which is binary/dichotomous: “**mobile banking adoption—yes/no**” (Hosmer & Lemeshow 1989). In addition to that, “unlike multiple regression and discriminant analysis, logistic regression does not entail assumptions related with normality, linearity and homogeneity of variance for the independent variable, which evidences the popularity of the model. Logistic regression assumes that the outcomes are independent, mutually exclusive and finally in order to obtain accuracy requires large samples (Lee. et al, 2004).

Table 17. Factors that Affect the Adoption of Mobile Banking

	B	S.E.	Wald	Df	Sig.	Exp(B)
PU	.966	.316	9.329	1	.002**	2.628
PEoU	.775	.380	4.167	1	.041**	2.170
PE	1.067	.321	11.078	1	.001**	2.906
AW	.863	.302	8.187	1	.004**	2.371
PC	.975	.311	9.827	1	.002**	2.650
PT	2.025	.306	43.806	1	.000***	7.572
PR	.422	.309	1.860	1	.173*	1.525
Constant	-2.924	.513	32.456	1	.000***	.054

a. Variable(s) entered on step 1: PU, PEoE, PE, AW, PC, PT, PR.

***, **, *Significance at 1%, 5%, 10% level

As indicated in the above table When the variables in the equation table is examined p-value of the perceived trust (.000), Awareness (.004) perceive cost (0.002), perceive ease of use (0.001), performance expectancy (0.041), perceive usefulness (0.002) critical factors are observed to be less than 0.05 so, these independent variables are found to be statistically significant and positive effect on the adoption of mobile banking in Gambella region. However, since p-value of the critical factor perceives risk (.173) and is more than 0.05, perceive risk is appeared as statistically insignificant influence on customers' adoption of mobile banking in Gambella region.

5.3 Model Evaluation

According to Hyeoun (2013) there are several parts involved in the evaluation of the logistic regression model. First, the overall model (relationship between all of the independent variables and dependent variable) needs to be assessed. Second, the importance of each of the independent variables needs to be assessed. Third, goodness-of-fit statistics; finally, predictive accuracy or discriminating ability of the model needs to be evaluated.

5.4 Omnibus Tests of Model Coefficients

The relationship between the dependent variable adoption and the overall combination of the independent variables (predictors) is tested in the Omnibus Tests of Model Coefficients table represented in table below. The model chi-square value of $\chi^2 = 116.977$, $df=7$, $N=371$, $P = .000$. With a p-value of less than 0.05 tells us that our model as a whole fits significantly. So, the relationship between the combination of the independent variables and the dependent variable is confirmed.

5.5 The Hosmer–Lemeshow Goodness of Fit Test

The Hosmer–Lemeshow test is another test to examine whether the observed proportions of events are similar to the predicted probabilities of occurrence in subgroups of the model population. According to Hyeoun (2013) better approach to present any of goodness of fit test available is Hosmer Lemeshow which is commonly used measure of goodness of fit based on the χ^2 distribution with 8 degrees of freedom (with large p-value >0.05) indicate a good fit to the data, therefore, goodness of overall model fit. In generally according to (Hosmer & Lemeshow, 2000) if p-value is less than 0.05 and conclude that the model is not fit but the p value in this model is 0.328 which greater than 0.05 means conclude that the model is fit for the observed data.

5.6 Model Summary

The model summary table below illustrates the computation of correlation measures to estimate the strength of the relationship so the researcher prefer to use Nagelkerke R Square shows about 40.6% of the variation in the outcome variable which is adoption of mobile banking is explained by this logistic model. (Chan, Y, 2004).

5.7 Regression Analysis Result

In this study adoption of Mobile Banking was assessed on the bases of perceived usefulness(PU), perceived ease of use (PEU), performance expectancy(PE), Awareness (AW), perceive cost(PC), perceived trust (PT) and perceived risk were the critical factors to come up with overall solution to the problem, therefore, three models were developed.

6. Conclusion

Based on the findings of the study, it was concluded that, perceived usefulness has a positive and statistical significant influencing factors to adopt mobile banking in Gambella region, perceived ease of use is positive and statistical significant factors to adopt mobile banking, perceive trust is positive and statistical significant factors to adopt mobile banking, perceived risk is statistical insignificant factors to

adopt mobile banking which users didn't think more about the risk of using mobile banking and also during making transactions since this system is new for them, perceive cost perceives cost is positive and statistical significant factors to adopt mobile banking, the using mobile banking is less costly to adopt mobile banking service and performance expectancy is positive and statistical significant factors to adopt mobile banking, so using mobile banking service is improving the quality of transaction and increase customer productivity, and awareness is positive and statistical significant factors to adopt mobile banking, so creating awareness for their customer a critical factor to attract large number customers for adoption in Gambella region. Based on the conclusion, the this study recommended that, since Mobile Banking is a new concept in the market it promotion to enhance its adoption, the banks can promote and create awareness to the public through emphasizing the benefits, banks and service providers should develop the excellence of provision by improving the speedy of service, offer more information and advertising, improve users ability, experience and knowledge about mobile banking services, educate their customers as to how secure mobile banking can be used, bank can educate staff as well as provide more funding for conducting research about users' behavior at different periods of time, bank should make strong collaboration with system designer while ensuring reliable content and high excellence provision, banks should continue to innovate and invest in mobile banking services to add functions, bank can educate or tell how the service is secured while customers comes for registration or educating how the service works should be bundled in marketing and advertising operations, the bank can identified factors provides beneficial information to banks to ensure that if they want to increase adoption of mobile banking in their operation, they would be aware of what is prerequisite to make this happen.

6.1 Limitation of the Study

Limitations are those characteristics that limit the scope and define the boundary of the study. It was difficult, costly and time consuming to conduct a census survey on all of the banks, to see the factors that influence the adoption of mobile banking. The researcher was limiting the scope of the study to only in commercial bank of Ethiopia in Gambella region. This study was conducted using only seven variables among a number of variables that might affect the Mobile banking adoption.

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