

# Factors Affecting Mobile Banking Implementation the Case of Commercial Banks of Ethiopia Logia, Branch

Dagnachew Tamene Ano<sup>1</sup>, Ebrahim Misganaw Muhiye<sup>2</sup>

<sup>1</sup>Lecturer, Department of Accounting and Finance, College of Business and Economics, Samara University, Semera, Ethiopia

<sup>2</sup> Lecturer, Department of Economics, College of Business and Economics, Samara University, Semera, Ethiopia.

**Abstract**—Most commercial banks in Ethiopia have applied mobile banking technology but; there's a challenge that their effort may not carry a great deal end result because it was expected. Due to the fact that the number of mobile banking users are nevertheless lagged in the back of. This study consequently targeted on analyzing elements affecting the implementation of mobile banking technology in logia Administration. The examine was tuned to five constructs, such that, perceived usefulness, perceived ease of use, perceived implementation/ Intention to Implement as true with, perceived risk and awareness in determining their effect on implementation mobile banking. A cross-sectional survey design becomes employed. From which a convenient sample of 96 customers were selected for the study. Records were analyzed the usage of SPSS regression analysis. This study revealed that Perceived Ease of use, awareness, trust had advantageous effect on mobile banking implementation while perceived risk became found to have a positive impact. While, Perceived Usefulness observed no effect at the factors to implement mobile banking.

**Index Terms**—Commercial banks, Perceived Usefulness, Perceived Ease of use, Trust, Risk Awareness, Mobile banking.

## I. INTRODUCTION

The rapid global expansion of mobile technology has fundamentally reshaped modern life, transforming handheld devices from simple communication tools into essential hubs for banking, education, and commerce. Within the financial sector, mobile banking (M-banking) has emerged as a revolutionary force, allowing consumers to perform transactions, manage deposits, and access account information without the need for physical bank visits.

In the African context, the stakes for mobile technology are particularly high. While high-income countries boast bank account ownership rates near 89%, many African nations have historically struggled with inclusion levels as low as 23%. Commercial banks are the backbone of resource allocation funneling surplus funds from depositors to investors yet millions remain unbanked.

In response, the National Bank of Ethiopia (NBE) has aggressively pursued a strategy of branch expansion. However, in a competitive digital era, physical presence is no longer enough. Success now hinges on the integration of appropriate technology to bridge the gap between financial institutions and the underserved.

Ethiopia has seen a dramatic shift since the implementation of the National Digital Payments Strategy (2021–2024) and the more recent 2026–2030 roadmap. Exponential Growth: Mobile money accounts surged from fewer than one million in 2020 to 139.5 million by 2025. The Usage Paradox: Despite massive registration numbers, active usage remains a challenge. Reports indicate that only 15% of mobile money accounts are currently active, highlighting a "registration-to-usage" gap. Studies by Solomon et al. (2014), Abebe (2016), and more recent 2025 assessments reveal that customer perception is the primary hurdle. Several critical factors influence whether an Ethiopian consumer will adopt mobile banking:

**Perceived Usefulness & Ease of Use:** Customers must believe the system will improve their lives and be simple to operate without advanced technical skills. **Perceived Risk:** Concerns over fraud which saw a spike in 2024 and system security remain significant

barriers to trust. Infrastructure & Awareness: A lack of digital literacy (affecting two-thirds of women) and underdeveloped merchant networks in rural areas continue to stall progress.

Generally, while mobile banking offers immense benefits including 24/7 access, fund transfers, and lower operational costs for banks its underutilization in Ethiopia suggests that infrastructure alone is insufficient. For financial managers, the solution lies in building trust, enhancing digital literacy, and creating compelling value propositions that move users from mere registration to sustained, daily digital activity. This study aims to examine these influencing factors to help align Ethiopia's banking sector with its broader economic development goals.

## II. STATEMENT OF THE PROBLEM

National bank of Ethiopia promotes commercial banks to increase their paid-up capital and to expand their branches in the part of the country to address their accessibility for the community. Ethiopian consumers are also having access to many new channels to interact with their bank. Banks are racing against each other to bring the latest technology like mobile banking for the benefit of their customers and themselves. Among the existing literatures it was discovered that not many studies have been conducted to evaluate if mobile banking channel is utilized by the customers in Ethiopia and factors affecting customer's usage of mobile banking channel. Therefore, this study has tried to determine the factors that influence customer's usage of mobile banking in logia Branch, Ethiopia. In Ethiopia, commercial banks commence mobile banking service according to NBE report (2016). Some of the early mobile banking technology implementers are Commercial Bank of Ethiopia, United Bank, Bank of Abyssinia, Dashen Bank, Wegagen Bank and Zemen Bank as per NBE directives, FIS/01/2012 (Arega H.,2015).

Accordingly, it is important to examine the major determinants for the implementation of mobile banking. To this end, there are few studies for the implementation of mobile banking in Ethiopia (Worku, 2015 and Kalkidan, 2016). Those studies focused on the determinants of mobile banking on commercial banks in Ethiopia. These studies have the following gap: they were excluded organizational and implementation factors as a factor for implementation

of mobile banking. Therefore, this study is attempted to investigate factors of mobile banking implementation Ethiopia taking Commercial banks of Ethiopia bank as a practical consideration.

The general objective of the study is to examine the factors of mobile banking implementation in Commercial Bank Ethiopia at Logia City, Ethiopia particularly, with the following specific objectives.

### Specific Objectives

The specific objectives of the study include;

1. To examine the effect of perceived ease of use on usage of mobile banking Implementations
2. To determine the influence of awareness and trust on usage of mobile banking implementation
3. To assess the effect of perceived usefulness, perceived risk on implementing mobile banking

## III. RESEARCH METHODOLOGY

### 3.1. Research Design and Approach

Kothari (2004) defined research design as a popular blue-print for the gathering, dimension and analysis of information, with the primary goal of solving the research problem. The overall objective of this has a look at changed into is to have a look at the factors that impact the implementation of Mobile banking in logia Branch. This observe changed into implementing a quantitative research technique with the aid of the use of a primary statistics source. Quantitative technique makes use of statistical techniques in describing styles of behavior and generalizing findings from samples to population of interest, and employs strategies of inquiry along with experiments and surveys (Creswell 2003). So as to answer the assertion of the hassle and meet the studies targets, the design of the study will use each descriptive and explanatory type. The main function of this approach is that the researcher has no manage over the variables; he/she will best report what has come about or what's taking place (Kothari, 2004). In line with (Dawson & Bob 2006) Explanatory research is characterized through studies hypotheses that explain the nature and route of the relationships between or amongst variables being studied. Therefore, this study was using both descriptive and explanatory method in order to explain the factors influencing mobile banking implementing in logia, logia Branch. The study was using structured questionnaire as the primary data collection

instrument to gather information. The methods followed in the management of the research instrument, statistics series method, information evaluation and measures used to ensure validity of the device used. The studies technique became quantitative in nature which includes the usage of primary statistics a good way to answer the research questions and to obtain its studies objective deductively.

### 3.2. Source of Data and Sample Size

The basic idea of sampling is that by selecting some of the elements in a population, conclusions can be drawn about the entire population (Zikmund, 2010). Particularly, the researcher set criteria to selecting the banks where the survey will be conducted. Since the study was conducted about mobile banking implementation those banks that have implemented this technology have been considered as the target population. And out of these banks Commercial Bank of Ethiopia was found to have the large percentage of mobile banking user share and these banks also have been implementing mobile banking for the past five years and more. Therefore, in order to conduct the survey out of the one bank located in logia city convenience sampling will be used to conduct the survey. The target population of the research is 2650 Mobil banking customers. According Yamane formula to find out the sample size (n) is given as under:

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

Where n= sample size required

N= Number of people in the population

e = acceptable error

The total number of customers within each bank was be 2650 at the time of the research with 90% confidence level a minimum of 96 respondents was needed as a sample size. And hence, the study was focused on commercial banks customers within logia administration. Commercial banks of Ethiopia Logia Branch were identified purposively for this study.

To determine a suitable sample size, it is necessary to specify the variation or standard deviation of the population, magnitude of acceptable error and confidence level. A minimum of 96 sample respondents required for researchers normally work to a 90% level of certainty.

### 3.3. Data Collection Method

The study turned into conducted by collecting information from each number one and secondary sources. Number one facts changed into accrued from the respondents based on a structurally designed questionnaire. A questionnaire turned into designed for sampled customers of commercial Bank of Ethiopia Logia Branch. The questionnaire will be developed based totally on previous empirical literature and its consistency is examined the use of Cronbach Alpha. The questionnaire has two sections: background facts and closed ended questions. After this, the researcher becomes dispensed the questionnaire to the sampled respondents. Rather or later, the facts which are accrued using the questionnaires turned into coded and processed the use of the Statistical package for Social Sciences (SPSS) utility. The near-ended questions might be developed on a 5-point Likert scales ranging from five (strongly agree) to one (strongly disagree).

The questionnaire commenced with an introductory statement, which designated the reason of the studies as basically academic. Respondents have been endorsed to be goal of their responses on account that they had been assured of confidentiality. Secondary statistics the look at turned into secondary data that is acquired from commercial bank of Ethiopia.

### 3.4. Data Analysis

Descriptive statistics such as frequency distribution was used to assess the demographic profile of the respondents to make the analysis more meaningful, clear and easily interpretable. Descriptive statistics allow the researchers to present the data acquired in a structured, accurate and summarized manner. The analysis of data was doing with the help of the statistical software of Statistical Package for Social Sciences (Version 20). The data collected from the field was sorted for completeness, checked for any errors and omissions, and was summarized in tables. The relevant information was obtained in a standard form using tables, frequencies and percentages to analyze and interpret the information. For the reliability & validity of this study, the researcher uses (SPSS) 20 to calculate Cronbach's alpha in order to determine how reliable the instrument/questionnaire is over the data collected.

In addition, scientific articles, journals and books are used to guarantee the reliability and validity of the

data. The large part is, statically analysis tools like SPSS computer program and MS-Excel office application is also used to analysis obtained data in order to increase the validity. Hair et.al (2005) argued that for analyzing the relationship between one dependent variable and several independent variables multiple regressions analysis will be applied. Hence, multiple regression analysis is an appropriate way to check the relationships between independent variables and dependent variable in this study.

IV. DATA ANALYSIS AND DISCUSSIONS

4.1 Descriptive Analysis

The study's main goal is to look at the elements that determine mobile banking usage at commercial bank Ethiopia. To achieve this goal, respondents were asked to rate their level of agreement on a five-point Likert scale. As a result, descriptive statistics such as the mean for central tendency and standard deviation (SD) for variability are used to convey the findings.

Response Item analyses

The response item analysis was carried out in order to observe relative stance of respondents. For simplicity the discussion was given on percentages of response

lies on the middle, on the right and on the left separately.

I have received information about the security system of mobile banking services from the bank.

Respondents were asked about the level of information supplied by way of their service issuer. From the total respondent's 71.8 % were positively replied that the statistics provided by using their service provider were sufficient. Alternatively, 19.8 % of the respondents have revealed that the statistics were inadequate. While, a significant wide variety (8%) have been now not positive about the situation. here greater than 70% of the total respondents agreed approximately the extent of information. This has not own problem on mobile banking implementation.

I think mobile banking is beneficial in conducting banking activities Respondents were asked about the usefulness of mobile banking service (table 3) around 70 % of the respondent favoring its usefulness. In addition to this, almost much less than 1% of respondents were opposed mobile banking usefulness. Whereas, 30% of respondents were not certain approximately its usefulness. That is favorable opportunity for banks to result in more mobile banking users.

Table 2 I think mobile banking is useful in conducting banking activities

|                    |            | I think mobile banking is useful/accessible in conducting banking activities. |                   |          |         |       | Total          |     |
|--------------------|------------|---|-------------------|----------|---------|-------|----------------|-----|
|                    |            |   | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |     |
| Mobile banking use | Yes        | Count   | 9                 | 6        | 9       | 27    | 21             | 72  |
|                    |            | % MB use  | 12.5              | 8.3      | 12.5    | 37.5  | 29.2           | 100 |
|                    |            | % column  | 100               | 75       | 75      | 69.2  | 75.0           | 75  |
|                    |            | % of Total  | 9.4               | 6.3      | 9.4     | 28.1  | 21.9           | 75  |
|                    | No         | Count   | 0                 | 2        | 3       | 12    | 7              | 24  |
|                    |            | % MB use  | 0                 | 8.3      | 12.5    | 50    | 29.2           | 100 |
|                    |            | % column  | 0                 | 25       | 25      | 30.8  | 25             | 25  |
|                    |            | % of Total  | 0                 | 2.1      | 3.1     | 12.5  | 7.3            | 25  |
| Total              | Count      | 9   | 8                 | 12       | 39      | 28    | 96             |     |
|                    | % MB use   | 9.4   | 8.3               | 12.5     | 40.6    | 29.2  | 100            |     |
|                    | % column   | 100   | 100               | 100      | 100     | 100   | 100            |     |
|                    | % of Total | 9.4   | 8.3               | 12.5     | 40.6    | 29.2  | 100            |     |

Overall, I think mobile banking is easy to use.

Table three below, respondents were asked their perception concerning how simple was utilizing mobile banking. This question was designed to capture respondents' perception on its simplicity whilst the use of mobile banking. the majority of the respondents (82.3%) have thought that the use of mobile banking

is simple. on the other hand, a total of 3.1 % respondents were thought that the usage of mobile banking is difficult and 14.6% couldn't specify its problem. right here we can expect that customers are acquainted with the mobile phone and perceived that mobile banking is straightforward to apply.

Table 3 I think mobile banking is easy to use

|                    |            | Overall, I think mobile banking is easy to use. |                   |          |         |       |                | Total |
|--------------------|------------|---|-------------------|----------|---------|-------|----------------|-------|
|                    |            |   | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |       |
| Mobile banking use | Yes        | Count   | 2                 | 3        | 7       | 36    | 24             | 72    |
|                    |            | % MB use  | 2.8               | 4.2      | 9.7     | 50.0  | 33.3           | 100   |
|                    |            | % column  | 66.7              | 100      | 63.6    | 85.7  | 64.9           | 75    |
|                    |            | % of Total                                      | 2.1               | 3.1      | 7.3     | 37.5  | 25             | 75    |
|                    | No         | Count   | 1                 | 0        | 4       | 6     | 13             | 24    |
|                    |            | % MB use  | 4.2%              | 0.0%     | 16.7    | 25    | 54.2           | 100   |
|                    |            | % column  | 33.3              | 0        | 36.4    | 14.3  | 35.1           | 25    |
|                    |            | % of Total                                      | 1.0               | 0        | 4.2     | 6.3   | 13.5           | 25    |
| Total              | Count      | 3   | 3                 | 11       | 42      | 37    | 96             |       |
|                    | % MB use   | 3.1   | 3.1               | 11.5     | 43.8    | 38.5  | 100            |       |
|                    | % column   | 100   | 100               | 100      | 100     | 100   | 100            |       |
|                    | % of Total | 3.1   | 3.1               | 11.5     | 43.8    | 38.5  | 100            |       |

I think mobile banking services are more risky than other banking

The following table four, summarized respondents perceived threat while the use of mobile banking. From the total respondents 29.2 % perceived that mobile banking transactions have certain level of risk. To the opposite, 52.1 % perceived that there's no significant risk associated while using mobile banking.

The other groups 18.8 % were neutral; such that they were no longer sure about the level of risk concerned while the usage of the provider. Then again, as it was revealed inside the table underneath there may be a significant difference among users and non-customers perception towards threat associated with mobile banking.

Table 4 I think mobile banking services are more risky than other banking option.

|                    |            | I think mobile banking services are more risky than other banking option. |                   |          |         |       |                | Total |
|--------------------|------------|---|-------------------|----------|---------|-------|----------------|-------|
|                    |            |   | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |       |
| Mobile banking use | Yes        | Count   | 16                | 19       | 16      | 17    | 4              | 72    |
|                    |            | % MB use  | 22.2              | 26.4     | 22.2    | 23.6  | 5.6            | 100   |
|                    |            | % column  | 69.6              | 70.4     | 88.9    | 77.3  | 66.7           | 75    |
|                    |            | % of Total  | 16.7              | 19.8     | 16.7    | 17.7  | 4.2            | 75    |
|                    | No         | Count   | 7                 | 8        | 2       | 5     | 2              | 24    |
|                    |            | % MB use  | 29.2              | 33.3     | 8.3     | 20.8  | 8.3            | 100   |
|                    |            | % column  | 30.4              | 29.6     | 11      | 22.7  | 33.3           | 25    |
|                    |            | % of Total  | 7.3               | 8.3      | 2.1     | 5.2   | 2.1            | 25    |
| Total              | Count      | 23  | 27                | 18       | 22      | 6     | 96             |       |
|                    | % MB use   | 24.0  | 28.1              | 18.8     | 22.9    | 6.3   | 100            |       |
|                    | % column   | 100.0   | 100.0             | 100      | 100     | 100   | 100            |       |
|                    | % of Total | 24.0  | 28.1              | 18.8     | 22.9    | 6.3   | 100            |       |

The bank's mobile banking is totally trustworthy.

As it was depicted in the table 11 below, 54 % of the respondents was positively agreed that the service provider was trust worthy. Whereas, 17.7% of respondents were revealed that they were not sure

about the trustworthiness of the service. On the other hand, 28.2 % of respondent were not relied on their service provider. The data depicted that the level of trust on banks mobile banking technology was low.

Table 5 The bank's mobile banking it is totally trustworthy

|  |     | The bank's mobile banking it is totally trustworthy. |                   |          |         |       |                | Total |
|--|-----|--|-------------------|----------|---------|-------|----------------|-------|
|  |     |  | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |       |
|  | Yes | Count  | 8                 | 12       | 10      | 32    | 10             | 72    |

|                    |    |            |      |       |      |      |      |       |
|--------------------|----|------------|------|-------|------|------|------|-------|
| Mobile banking use |    | % MB use   | 11.1 | 16.7  | 13.9 | 44.4 | 13.9 | 100.0 |
|                    |    | % column   | 72.7 | 75.0  | 58.8 | 86.5 | 66.7 | 75.0  |
|                    |    | % of Total | 8.3  | 12.5  | 10.4 | 33.3 | 10.4 | 75.0  |
|                    | No | Count      | 3    | 4     | 7    | 5    | 5    | 24    |
|                    |    | % MB use   | 12.5 | 16.7  | 29.2 | 20.8 | 20.8 | 100   |
|                    |    | % column   | 27.3 | 25.0  | 41.2 | 13.5 | 33.3 | 25    |
|                    |    | % of Total | 3.1  | 4.2   | 7.3  | 5.2  | 5.2  | 25    |
| Total              |    | Count      | 11   | 16    | 17   | 37   | 15   | 96    |
|                    |    | % MB use   | 11.5 | 16.7  | 17.7 | 38.5 | 15.6 | 100   |
|                    |    | % column   | 100  | 100.0 | 100  | 100  | 100  | 100   |
|                    |    | % of Total | 11.5 | 16.7  | 17.7 | 38.5 | 15.6 | 100   |

Implementation of mobile banking as soon as possible From the overall respondents 68.8% have tremendous feeling that they will undertake mobile banking for their day today activities inside the future as it depicted within the table 6 under. To the opposite, a total of 17.7 % have a negative feeling towards the use of mobile banking in the future. Alternatively, 13.5%

respondents were now not certain approximately their future action. a number of the set of respondents, mobile banking customers were relatively higher degree of preference to resume the service. Therefore, banks are encouraged to seize their consumer’s intention with the aid of removing those discouraging factors.

Table 6 I will implement mobile banking as soon as possible

|                    |     | I will implement mobile banking as soon as possible. |                   |          |         |       | Total          |     |
|--------------------|-----|--|-------------------|----------|---------|-------|----------------|-----|
|                    |     |  | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |     |
| Mobile banking use | Yes | Count  | 4                 | 9        | 10      | 38    | 11             | 72  |
|                    |     | % MB use   | 5.6               | 12.5     | 13.9    | 52.8  | 15.3           | 100 |
|                    |     | % column   | 100               | 69.2     | 76.9    | 73.1  | 78.6           | 75  |
|                    |     | % of Total   | 4.2               | 9.4      | 10.4    | 39.6  | 11.5           | 75  |
|                    | No  | Count  | 0                 | 4        | 3       | 14    | 3              | 24  |
|                    |     | % MB use   | 0                 | 16.7     | 12.5    | 58.3  | 12.5           | 100 |
|                    |     | % column   | 0                 | 30.8     | 23.1    | 26.9  | 21.4           | 25  |
|                    |     | % of Total   | 0                 | 4.2      | 3.1     | 14.6  | 3.1            | 25  |
| Total              |     | Count  | 4                 | 13       | 13      | 52    | 14             | 96  |
|                    |     | % MB use   | 4.2               | 13.5     | 13.5    | 54.2  | 14.6           | 100 |
|                    |     | % column   | 100               | 100      | 100     | 100   | 100            | 100 |
|                    |     | % of Total   | 4.2               | 13.5     | 13.5    | 54.2  | 14.6           | 100 |

Comparison between mobile banking users and non-users

Table7 Mean value of constructs/dimension/

| Mobile banking use |                | Awareness | Perceived Usefulness | Perceived Ease of Use | Perceived Risk | Perceived Trust | Intention to Implement |
|--------------------|----------------|-----------|----------------------|-----------------------|----------------|-----------------|------------------------|
| Yes                | Mean           | 3.53      | 3.71                 | 4.34                  | 2.59           | 3.30            | 3.61                   |
|                    | N              | 72        | 72                   | 72                    | 72             | 72              | 72                     |
|                    | Std. Deviation | 1.02      | 1.23                 | 5.33                  | 1.25           | 1.24            | 1.02                   |
| No                 | % of Total N   | 75        | 75                   | 75                    | 75             | 75              | 75                     |
|                    | Mean           | 3.43      | 3.13                 | 3.28                  | 1.83           | 2.63            | 3.14                   |
|                    | N              | 24        | 24                   | 24                    | 24             | 24              | 24                     |
| Total              | Std. Deviation | 0.85      | 0.58                 | 0.76                  | 1.04           | 0.97            | 0.74                   |
|                    | % of Total N   | 25        | 25                   | 25                    | 25             | 25              | 25                     |
|                    | Mean           | 3.36      | 4.10                 | 3.73                  | 2.67           | 3.16            | 3.77                   |
|                    | N              | 96        | 96                   | 96                    | 96             | 96              | 96                     |
|                    | Std. Deviation | 0.85      | 0.93                 | 1.53                  | 1.04           | 0.97            | 0.74                   |
|                    | % of Total N   | 100       | 100                  | 100                   | 100            | 100             | 100                    |

The mean values of sample response were summarized below each construct's /dimensions/. This statistical representation was simple and you can actually without difficulty deduce the overall position respondents. The study found out on table 7, that there was a perception difference between mobile banking users and non-users. From the whole response found mobile banking customers were relatively properly position than non-customers across every dimension. In addition, the overall sample respondents' position was measured and value in the table below.

**Multiple Regression Analysis**

In order to answer the research objective, Awareness, Perceived Usefulness, Perceived Ease of use, Trust and Perceived Risk dimensions were measured to determine how individual behavioral intention towards mobile banking implementation was influenced. In each dimension three to five questions were allocated to capture respondents' perception toward mobile banking implementation. To explore this relationship the researcher utilized the standard multiple regression. This involves all of the

independent variables being entered into the equation at once.

The results have confirmed how well this set of variables were capable of expect intention to implement mobile banking; and the result also revealed how much every independent variable associated with the dependent variable, over and above how much the variation of the dependent variable explained through the independent variables. The assumptions of multiple regression which might be identified as primary concern within the research encompass normality, linearity, independence of errors, homoscedasticity, and collinearity assumptions (Dianne L. balance, 2012).

**Normality Test**

The skewness value indicates whether or not the distribution is symmetric. Kurtosis, on the other hand, gives information on the distribution's 'peakness.' The value of skewness and kurtosis is 0 if the distribution is absolutely normal, which is a rare occurrence in the social sciences (Pallanta Julie, 2005).

Table 9 Skewness and Kurtosis analysis Statistics

| Valid               | Awareness | Perceived Usefulness | Perceived Ease of Use | Perceived Risk | Perceived Trust | Intention to Implement |
|---------------------|-----------|----------------------|-----------------------|----------------|-----------------|------------------------|
| Valid               | 96        | 96                   | 96                    | 96             | 96              | 96                     |
| Missing             | 0         | 0                    | 0                     | 0              | 0               | 0                      |
| Skewness            | -.767     | -.943                | -1.243                | .258           | -.463           | -1.329                 |
| Skewness Std. Error | .246      | .246                 | .246                  | .246           | .246            | .246                   |
| Kurtosis            | -.161     | -.032                | .137                  | -1.098         | -.847           | .835                   |
| Kurtosis Std. Error | .488      | .488                 | .488                  | .488           | .488            | .488                   |

A common rule of thumb test for normality is to divide Skewness and Kurtosis by their respective standard errors. Skew should be within the -2 to +2 range when the data are normally distributed. Kurtosis is the peakedness of a distribution. The criteria for normality distribution for relaxed assumption within -3 to +3 range (Garson G.David, 2012). Table9 above, showed the skewness test and kurtosis test of all constructs (i.e. Awareness, Perceived Usefulness, Perceived ease of Use, Perceived Trust, Perceived Risk and Intention to implement).

Linearity testing for non-linearity is important because correlation, regression and different factors of general linear model (GLM) assume linearity (Garson G.David, 2012). There are different techniques for

example, ANOVA test of linearity. The author stated that, one can compute an ANOVA table for linear and nonlinear factor, if the F importance for nonlinear issue is the essential cost (eg. <0.05), then there is significant non linearity. Thus, from the ANOVA table value table x of appendix A, all variables are linear since the significance value is greater than the reducing factor.

**Multicollinearity Test**

Variance inflation factor (VIF) and Tolerance, Variance inflation factor used in lieu of tolerance as VIF is simply the reciprocal of Tolerance. as a rule of thumb is that VIF>4 and Tolerance < 0.2 when multicollinearity is a problem (Garson G.David, 2012). In this example the entire variables were met

the assumption (desk 10). to check multicollinearity, the correlation matrix Table10 below, of the variables was studied to identify the occurrence of multicollinearity. The correlation coefficient is a measure of the closeness of the relationships or association between independent and dependent

variables. As a rule of thumb, intercorrelation among the independents above 0.80 signals a possible problem (Garson G.David, 2012). Therefore, there may be no evidence of significant multicollinearity among the research variables.

Table 10 Correlations matrix

|             |                 | Correlations |                      |                       |                |                 |                        |
|-------------|-----------------|--------------|----------------------|-----------------------|----------------|-----------------|------------------------|
|             |                 | Awareness    | Perceived Usefulness | Perceived Ease of Use | Perceived Risk | Perceived Trust | Intention to Implement |
| MBawrs @3   | Pearson Corre   | 1            | .386**               | .061                  | -.269**        | -.204*          | .052                   |
|             | Sig. (2-tailed) | .000         | .000                 | .000                  | .000           | .000            | .000                   |
|             | N               | 96           | 96                   | 96                    | 96             | 96              | 96                     |
| MBacce ble  | Pearson Corre   | .386**       | 1                    | .105                  | .000           | -.026           | .263**                 |
|             | Sig. (2-tailed) | .000         | .000                 | .000                  | .000           | .000            | .000                   |
|             | N               | 96           | 96                   | 96                    | 96             | 96              | 96                     |
| MBPeas e@3  | Pearson Corre   | .061         | .405                 | 1                     | -.132          | -.030           | .072                   |
|             | Sig. (2-tailed) | .000         | .000                 | .000                  | .000           | .000            | .000                   |
|             | N               | 96           | 96                   | 96                    | 96             | 96              | 96                     |
| MBPris k@3  | Pearson Corre   | -.269**      | .000                 | -.132                 | 1              | .079            | .003                   |
|             | Sig. (2-tailed) | .000         | .000                 | .200                  |                | .000            | .000                   |
|             | N               | 96           | 96                   | 96                    | 96             | 96              | 96                     |
| MBPtru st@1 | Pearson Corre   | -.204*       | -.026                | -.030                 | .793           | 1               | .247*                  |
|             | Sig. (2-tailed) | .000         | .000                 | .000                  | .000           | .000            | .000                   |
|             | N               | 96           | 96                   | 96                    | 96             | 96              | 96                     |
| MBintel @4  | Pearson Corre   | .523         | .263**               | .723                  | -0.03          | .247*           | 1                      |
|             | Sig. (2-tailed) | .000         | .000                 | .000                  | .000           | .000            | .000                   |
|             | N               | 96           | 96                   | 96                    | 96             | 96              | 96                     |

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

From the above correlation matrix, we can deduce that Perceived Ease of use and Intention to implement mobile banking has highest positive correlation coefficient which is 0.723 at p<0.05 level of significant. This result showed that PEOU has significant positive effect on intention to implement mobile banking technology.

Awareness and Trust have significant positive correlation with intention to implement mobile banking with coefficient of 0.523 and 0.247 respectively at P<0.05 significant level. On the other hand, Perceived Risk at correlation coefficient -0.03 has significant negative correlation with intention to implement mobile banking. Therefore, Awareness, Perceived risk, PEOU, and PT tend to have association with mobile banking implementation.

Regression Analysis

Here under the first column labeled by R was represented multiple coefficients of correlation

between the independent variable (intention to implementation of mobile banking) and the independent variables (Awareness, PU, PEOU, PR and Trust). The value under model summary table11, determines the value of R2, which is a measure of the variability in the outcome is accounted for by the predictors.

The output result showed that 63.4% of the variance on intention to implementation of mobile banking is defined by the proposed independent variables. The second output determined by using table 11, is all about analysis of variance (ANOVA) and this take a look at is determining the version is substantial at predicting the final results of the independent variable. That is showed by the importance level of F statistics (P<0.05). The closing output summarized under table11, tells us the parameters of the model. The coefficient of impartial variables decided via the fee in column A. In other phrase, the fee under B represents the level of each contribution within the model.

Table 11 Regression Analysis and Correlations matrix

| Model Summary <sup>a</sup> |                   |          |                   |                            |
|----------------------------|-------------------|----------|-------------------|----------------------------|
| Model                      | R                 | R Square | Adjusted R Square | Std. Error of the Estimate |
| 1                          | .796 <sup>a</sup> | .634     | .614              | .60840                     |

a. Predictors: (Constant), MBadopt@2, MBPease@1, MBusefulness, MBPtrust@1, MBawrs@3, MBPrisk@3

| ANOVA <sup>a</sup> |            |                |    |             |        |                   |
|--------------------|------------|----------------|----|-------------|--------|-------------------|
| Model              |            | Sum of Squares | df | Mean Square | F      | Sig.              |
| 1                  | Regression | 57.676         | 5  | 11.535      | 31.164 | .000 <sup>b</sup> |
|                    | Residual   | 33.314         | 90 | .370        |        |                   |
|                    | Total      | 90.990         | 95 |             |        |                   |

a. Predictors: (Constant), MBadopt@2, MBPease@1, MBusefulness, MBPtrust@1, MBawrs@3, MBPrisk@3  
b. Dependent Variable: MBAadopt@1

| Coefficients <sup>a</sup> |              |                             |            |                           |        |      |
|---------------------------|--------------|-----------------------------|------------|---------------------------|--------|------|
| Model                     |              | Unstandardized Coefficients |            | Standardized Coefficients | t      | Sig. |
|                           |              | B                           | Std. Error | Beta                      |        |      |
| 1                         | (Constant)   | 1.475                       | .547       |                           | 2.697  | .008 |
|                           | MBusefulness | .235                        | .141       | .211                      | 1.667  | .099 |
|                           | MBPease@1    | .381                        | .161       | -.184                     | -1.440 | .153 |
|                           | MBPrisk@3    | .048                        | .086       | .053                      | .556   | .579 |
|                           | MBPtrust@1   | .122                        | .073       | .156                      | 1.672  | .098 |
|                           | MBawrs@3     | .440                        | .111       | .411                      | 3.968  | .000 |

a. Dependent Variable: MBAadopt@1

The results obtained within the above table 11, showed that the coefficient B and p value of Perceived Ease of Use were positive and significant (B = zero.381, p< 0.05). Hence, Perceived Ease of Use has a positive and significant impact on purpose to implement mobile banking. This significant positive relationship is visible in the positive coefficient's values reflected, for this reason; supplying strong support for H1 that perceived Ease of use is significantly impact on intention to mobile banking implementation. This means that after mobile banking services are easy to apply, retail banking customers sense that they may exert less effort to operate the services, leading to the improvement of a positive attitude toward utilization. The finding changed into consistent with past studies conducted related to implementation of mobile banking services (Abdul Kabeer Kaziia, Muhammad Adeel Mannanb,2013; Tariq Bhatti, 2007; Imtiaz Arif Sahar A and Arshian S.,2016).

The results of multiple regressions, as presented in above, revealed that Perceived Usefulness has a positive relation however not significant impact on determinates to implement mobile banking with (B=0.05, p=0.235> zero.05). Consequently, the researcher now not helps the initial speculation; Perceived Usefulness has a positive and significant effect on determinates to implement mobile banking. This studies finding contradicts with many former research findings (Davis, 1989; Oluoch R. Akinyi etal,

2012). Unluckily, this finding becomes consistent with the finding obtained by using Karma Nancy George, Ibrahim Siddig Ballal and Ali Abdel Hafiez (2014) on Sudanese commercial bank customers.

As presented in our findings, the most unusual finding was perceived usefulness has no significant effect on behavioral aim to implement mobile banking. The reasons for this finding are not clear, but several feasible reasons may exist. With recognize to perceived usefulness table 8, the descriptive facts suggests that the general public of the respondents (70%) agreed that mobile banking is convenient and appearing transaction extra speedy. even though, they may be greater aware of the usefulness of the technology there are different elements deterring the proper use of the technology. For example, consumers decide to make transactions on-line, maximum of the time the receiver (dealer) might also refuse such kind of payment system for many reasons.

The results of table 11, showed that the coefficient beta and p value of Perceived Trust were (B=0.122, P<0.05). Thus, our research hypothesis, such that, Perceived Trust has positive and significant effect on implement of mobile banking was confirmed. The study was in line with previes study by (Tobbin, P. E. 2010, Majharul Talukder, Ali Quazi and Milind Sathye ,2014) The overall effect of the variables under the model summary table11 above tell us how much of

the variance in the dependent variable (implement of mobile banking) is explained by the model.

In this research the value of R is 0.634, this means that our model explains 63.4% of the variance on implement of mobile banking. Thus, those independent variables PEOU, Awareness, perceived trust has positive effect on intention to implementation of mobile banking. On the other hand, perceived risk has negative effect on intention to implement mobile banking. The relationship of the variables was explained by the following multiple linear equation.

$$MB \text{ implementation} = 0.440Aw + 0.05PU + 0.235PEoU + 0.381PR + 0.048PT + 1.22$$

The partial increase in the usage of mobile banking due to one unit change in Perceived ease of use is 0.381, while other things remain constant and it is statistically significant at 95% level of confidence. The partial increase in the usage of mobile banking due to one percent change in awareness is 0.235. While other things remain constant and it is statistically significant at 95% level of significance (Table 11). The partial increase in the usage of mobile banking due to one percent change in Perceived trust is 0.122 while other things remain constant and it is statistically significant at 95% level of confidence.

## V. CONCLUSION AND RECOMMENDATION

### 5.1 Conclusion

The study was successfully identified factors that affect customers' intention to implementation of mobile banking. The study revealed that Perceived Ease of use, Awareness, perceived risk and perceived trust are able to determine the level of mobile banking implementation in logia Branch. If Commercial banks customers become more aware of the technology and thus the rate of implementation increases. This means that, for a person to implement a technology, seeing, hearing about or in general sufficient level of level of information is required. Mobile banking users would be concerned with the effort needed to use that application and the difficulty of the process involved. Such perceived ease of browsing, identifying information and performing financial transactions will enhance intention to implement the behavior. Lack of trust including fear of the performance of the technology and the promises made to them are major barrier towards successful mobile banking

implementation. Finally, the risk concern such as identified personal information and financial transactions security (privacy concern), the hacking of their money using the technology are barriers for successful implementation of. Greater the customers perception about the risk associated with the use of internet, greater will be the importance of security for customer.

### 5.2 Recommendation

Here, the effort put forth by commercial banks to improve their customer's awareness will have multiplied effect on motivating customers to be mobile banking users. As the level of information increases customers become more rational on their decision. In other words, commercial banks have to communicate to their customers about the security aspects and the safest mode of financial transaction rather than the usual traditional banking system. Commercial bank should take in to account their mobile banking technology in terms of being user friendly. Because the research result revealed that customers more prefer if using the system free of effort.

Safe guarding the technology from unauthorized act, possible of reduction in uncertainties, ambiguities, risks and frauds related to financial transactions while using the technology will enhancing the likelihood of increasing customers implementing mobile banking. Thus, creating favorable environment in mobile banking technology will help the new emerging agent banking technology will defuse with short period of time.

The main objective of this research is for academic purpose but the implication will extend to that organization which provides mobile banking service. The academic implications of this study are basically technology acceptance model by itself insufficient in estimating customer's intention to implement mobile banking; since the observed finding embrace from different models.

Today mobile baking services have become competitive channel where banks move on to gain sharp edge of competitive advantage. Therefore, these research finding is important for commercial banks to understand their customers behavior.

The effect of basic demographic variables such as age, gender and education qualification on intention to implement mobile banking was not intensively investigated. Some demographic variables are

significant which might have influence on the usages of mobile banking. Furthermore, splitting users from non-users and studying their particular behavior is important. Since the study was limited to logia administration it is difficult to infer to other parts of the country to have complete reflection. Moreover, the risk factor was significantly reducing the Determinates rate further study required in detail on specific elements of risk factors.

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