



**THE IMPACT OF DIGITALIZATION ON FINANCIAL PERFORMANCE ON
PRIVATE COMMERCIAL BANK (IN CASE OF BANK OF ABYSSINIA)**

**A PAPER SUBMITTED TO MASTER OF BUSINESS ADMINISTRATION
DEPARTMENT IN PARTIAL FULFILMENT OF MASTERS OF BUSINESS
ADMINISTRATION IN FINANCE**

SET BY

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ADDIS ABABA UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

DEPARTMENT OF MBA

JUNE 2023

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Declaration

I'm Demeke Engida, declare that the research paper entitled "The impact of digitalization on financial performance of bank of Abyssinia, Addis Ababa" is my original work. I have carried out the present study independently with the guidance and support of the research advisor, Takele (Dr.).

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Date.....

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JUNE, 2023

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Table of Content

Contents	Page
Acknowledgements.....	iii
<i>Table of Content</i>	iv
List of Table.....	vii
List of Appendix	viii
Abbreviations and Acronyms	ix
ABSTRACT	x
CHAPTER ONE.....	1
INTRODUCTION	1
1.1. Background of study	1
1.2. Background of organization.....	1
1.3. Statement of problem	1
1.4. Objective of study	2
1.4.1 General objective	2
1.4.2 Specific objective.....	2
1.5. Hypothesis	3
1.6. Significance of the study	3
1.7. Scope of study.....	3
1.8. Structure of the study.....	4
CHAPTER TWO	5
2.0. literature review	5
2.1. Theoretical review.....	5
2.2. Digitalization.....	5
2.3. Digital banking.....	5
2.3.2. Advantages of Digital banking.....	6
2.3.3. Challenges of digital banking	7
2.4. Financial performance	8
2.5 Effect of Digitalization on the Profitability	9
2.6. Measures of digitalization and Financial Performance	10

2.7. Empirical review	12
2.8. Conceptual concept	13
CHAPTER THREE.....	15
3.0 RESEARCH METHODOLOGY	15
3.1. Chapter introduction.....	15
3.2 Approach of research.....	15
3.3 Research design.....	15
3.4. Area of study.....	16
3.5. Population, sampling techniques and sample size	16
3.7. Data analysis method.....	17
3.8. Specification of model.....	17
3.9. Ethical consideration	18
chapter four.....	19
4.1. Introduction.....	19
4.2 Respondent of general characteristics	19
4.3. Factors that influence consumers to use digital banking	22
4.3.1 Descriptive analysis	22
4.4. Effect of digitalization on the ROA	26
4.4.0. Diagnostic tests	26
4.4.1 Inferential statistics.....	31
4.4.1.0. Multiple regression analysis.....	31
4.4.1.1 REALIBTY TEST.....	33
4.4.2. ATM and Return on Assets.....	33
4.4.2.1 Correlation analysis	33
4.4.3 POS Terminals and Return on Assets	36
4.4.3.1 Correlation Analysis	36
4.4.3.2 Regression Analysis	36
4.4.4.2 Regression Analysis	39
4.4.5 Internet Banking and Return on Assets	41
4.4.5.1 Correlation analysis the study.....	42
4.4.5.2 Regression Analysis	42

4.4.6.1 Correlation Analysis	43
4.4.6.2 Regression Analysis	44
4.5. Reliability of research.....	Error! Bookmark not defined.
4.6 Effect of digitalization risk or challenge on profit of BOA.....	46
Chapter five	48
5.0. Summery, conclusion and recommendation.....	48
5.1. Finding of summery	48
5.2. Conclusion	49
5.3.1 Factors that influence consumers to use digital banking	50
5.3.2 Effect of digitalization on ROA	51
5.3.3 Effect of digitalization risk or challenge on profit of bank	51
5.4 Limitation of research.....	51
5.5. Area of future study.....	52
References	54

List of Table

TABLE 4.1. THE SEX OF THE SAMPLE RESPONDENT	ERROR! BOOKMARK NOT DEFINED.
TABLE 4.2 THE AGE OF THE RESPONDENT	ERROR! BOOKMARK NOT DEFINED.
TABLE 4,3 THE MARITAL STATUS OF THE SAMPLE RESPONDENT	21
TABLE 4.4 EDUCATION LEVE OF THE RESPONDENT.....	ERROR! BOOKMARK NOT DEFINED.
TABLE 4.5. WORKING EXPERIENCE LEVEL OF THE SAMPLE RESPONDENTS	22
TABLE 4.6. DESCRIPTIVE STATISTICS	ERROR! BOOKMARK NOT DEFINED.
TABLE 4.6.0 DIAGONASTIC TEST.....	32
TABLE 4.7: CORRELATION OF ATM AND RETURN ON ASSET	33
TABLE 4.8 MODEL SUMMARY FOR ATM AND ROA	ERROR! BOOKMARK NOT DEFINED.
TABLE 4.9 ANOVA FOR ATM AND ROA.....	34
TABLE 4.10 COEFFICIENTS FOR ATM AND FINANCIAL PERFORMANCE.....	ERROR! BOOKMARK NOT DEFINED.
TABLE 4.11 CORRELATION POS AND FINANCIAL PERFORMANCE.....	36
TABLE 4.12 MODEL SUMMARY FOR POS AND FINANCIAL PERFORMANCE	37
TABLE 4.13 ANOVA FOR ATM AND FINANCIAL PERFORMANCE ..	ERROR! BOOKMARK NOT DEFINED.
TABLE 4.14 COEFFICIENTS FOR POS AND ROA.....	37
TABLE 4.15 CORRELATION MOBILE BANKING AND FINANCIAL PERFORMANCE.....	38
TABLE 4.16 MODEL SUMMARY FOR MOBILE BANKING AND ROA.....	39
TABLE 4.17 ANOVA FOR MOBILE BANKING AND ROA	ERROR! BOOKMARK NOT DEFINED.
TABLE 4.18 COEFFICIENTS FOR MOBILE BANKING AND ROA.....	ERROR! BOOKMARK NOT DEFINED.
TABLE 4.19 CORRELATION INTERNET BANKING AND FINANCIAL PERFORMANCE.....	41
TABLE 4.20 MODEL SUMMARY FOR INTERNET BANKING AND ROA	42

TABLE 4.21 ANOVA FOR INTERNET BANKING AND ROA.....	ERROR! BOOKMARK NOT DEFINED.
TABLE 4.22 COEFFICIENTS FOR INTERNET BANKING AND ROA.....	42
TABLE 4.23 CORRELATION ITM AND FINANCIAL PERFORMANCE.....	44
TABLE 4.24 MODEL SUMMARY FOR ITM AND FINANCIAL PERFORMANCE	44
TABLE 4.25 ANOVA FOR ITM AND FINANCIAL PERFORMANCE.....	44
TABLE 4.26 COEFFICIENTS FOR ATM AND ROA.....	ERROR! BOOKMARK NOT DEFINED.
TABLE 4.27 TEST OF RELIABLTY	ERROR! BOOKMARK NOT DEFINED.
TABLE 4.28 DESCRIPTIVE ANALYSIS.....	46

LIST OF FIGURES

Figure 1 conceptual framework	20
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List of Appendix

Questionnaires.....	56
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Abbreviations and Acronyms

BOA	Bank of Abyssinia
ATM	Automatic Teller Machine
ITM	Interactive teller machine
MB	Mobile banking
IB	Internet banking
POS	Point of sale
DSF	Deliver financial service
ROA	Return on asset
ROE	Return on equity
EM	Equity Multiplier
LRM	Linear Regression Model
IT	Information technology
ICT	Information communication and technology

ABSTRACT

This study made to investigate the impact of digitalization on financial performance of bank of Abyssinia in Addis Ababa, Ethiopian. The main objective of study was to establish the impact of digitalization on financial performance of BOA. Specific objective were to identify the factors that influence customers to use digital banking, to study impact of digitalization of return on investment and to describe effect of digitalization risk or challenge on return on asset of organization. Quantitative and qualitative research methodologies were used. Quantitative researches were correlation and regression analysis. Data collection was used in data collection Pearson correlation coefficient helped the impact of digitalization on financial performance. On the other hand, inferential test linear regression analysis was used to analyze the impact of digitalization on financial performance. Descriptive survey was used while a questionnaire was used to gather primary data. The target study units for this paper were conveniently selected bank of Abyssinia. The study sample in term of the respondent covered the staff bank of Abyssinia and a sample of 111 was administered with the questionnaire and 63 % response rate was achieved. Statistical analysis was done with the aid of SPSS software and stata software. These studied digitalization address internet banking automated teller machine, mobile banking, point of sale, and interactive teller machines. Based on the finding of study, it can be conclude that digitalization influence financial performance of BOA positively. The study showed that return on asset bank of Abyssinia increase in upward trends due to an increasing digitalization. These studies concluded that digitalization significantly and positively affect return on asset that digital transaction led to increase ROI. This paper didn't include all bank digitalization and a future study is recommended to include Apollo, gize pay, and their impact of financial performance of bank of Abyssinia.

Keywords: Digital Banking, Performance, ATM, ITM, IB, MB, POS and bank of Abyssinia.

CHAPTER ONE

INTRODUCTION

1.1. Background of study

Digitalization is a business opportunity and it uses digital assets and capabilities to create new services that are valuable to the customers, which can bring differentiation, business innovation, and new revenues. The impacts of digitalization on Ethiopian's financial institutions can undoubtedly be associated to the measure of individuals utilizing the internet banking and mobile banking services to pay their bills, which is the dominating factor on an average person's banking errands. The breakthrough techniques for reaching customers are becoming less expensive and less demanding than the traditional methods (Coiera, 2000) (Magatef&Tomalieh, 2015) (Wright, 2017). It also expands the need for promptness and customized services and products, which also put the bank financial sector under the demand of meeting customers' requests with minimal effort, convenient approaches to transfer cash, investment and borrowings. This senior essay study in bank of Abyssinia that solve organization problem to impact of digitalization on financial performance, and comfortable to collect data in ten city Addis Ababa branch. Research containing the research design method of study to target population. Sampling technique size and source of data and method of data collection tools and data analysis are employed.

1.2. Background of organization

Commercial bank services were inchoate stage transforming different sectors of the economy. BOA lunched to 1996 and private commercial bank in Ethiopia that provides financial service.

1.3. Statement of problem

Financial services are the broad range of financial services accessed and delivered through digital channels, including payments, credit, savings, remittances, insurance and financial information. The term digital channels refer to the internet, mobile phones (both smartphones and digital feature phones), ATMs, POS terminals, electronically enabled cards, biometric devices, tablets, ITM and any other digital system. DFS have significant potential to expand the delivery of basic financial services via affordable, convenient and secure environment to the

public at large (particularly the poor) through innovative technologies like mobile-phone-enabled solutions, electronic money models, and digital payment platforms. The digital revolution adds new layers to the material cultures of financial inclusion, offering the state new ways of expanding the inclusion of the legible and global finance new forms of ‘profiling’ poor households into generators of financial assets (Gabor and Brooks, 2016).

Research questions

To achieve these broad objectives, a central research questions are developed. The study questions address the main research question of the study.

1. What are the factors that influence consumers to use digital banking in bank of Abyssinia?
2. How do you impact of digitalization on ROA of the bank of Abyssinia?
3. What is impact of digitalization challenge on ROA on BOA?

1.4. Objective of study

1.4.1 General objective

The general objective of this study was the impact of digitalization on financial performance of private commercial bank incase BOA, ADDIS ABABA, ETHIOPIA.

1.4.2 Specific objective

The following are specific objective that the researcher wants to address.

- I. To identify the factors that influence customers to use digital product.
- II. To study the impact of digitalization on ROA/ROI
- III. To describe the impact of digitalization risk or challenge on the ROA/ROI of organization.

1.5. Hypothesis

The following are the assumptions which I drafted from my theoretical framework. These hypotheses will eventually be supported and proved relationship of digitalization and financial performance.

Research hypothesis

Hypothesis 1. Digital banking specific determinants like that IB, MB, POS, ITM, ATM determinants significantly affect bank return on asset.

Hypothesis 2. Digitalization challenges negatively affect return on asset

1.6. Significance of the study

The study provides various significances to different bodies. Some of the significance that is expect to provide includes it is expect to enable employee and management bodies of organization to know impact of digitalization on financial performance of private commercial bank, the researcher will get experience to do better than when he require doing other researchers and individuals can benefit as reference and document the study also provide useful information for the organization BOA perform well by considering its performance for failure or encourage them to do all the best to increase utilization of digitalization.

The study can help us to understand issues to be considered and the way that are applied in the digitalization practice in the real working environment. This can create awareness in the field of digital how they carefully plan to utilize digitalization that is important to performance of business. This organization give service for many costumer to use good digital ability or performance ,so to deliver service for costumer at a timely manner we ware need digitalization to maximizing customers satisfaction. This idea is initiate work of research to impact of digitalization on financial performance of bank of Abyssinia.

1.7. Scope of study

Conducted research impact of digitalization on financial performance of private commercial bank in all offices and organization running for success is necessary, but because of time, money

and knowledge/capacity the study was be limited impact of digitalization on financial performance of bank of Abyssinia at head office in Addis Ababa. This study would be restricted to the BOA in ten branches at east Addis Ababa district.it also believed that the study was available for getting reliable information from manager and other employees of organization

Geographically, the study was depends on the impact of digitalization on financial performance of bank of Abyssinia at head office and it not be represents the other, conceptually, the research focus only on impact of digitalization financial performance of private commercial bank on BOA and it does not represent the other factors that affect BOA. Methodologically, all literature review was not be reviewed, because of lack of sufficient data like reference books in library and the time and budget allowance for data collection are not sufficient to gather all the relevant data at required level.

1.8. Structure of the study

This paper was classified in to 5 (five) chapters. The first chapter is an introductory of the paper.in this provides back ground of the study, statement of problem and objective of the study, significant of the study and scope of the study. The components of this describe the purpose of the study. The second unit outlines the related literature review of data authors about the subject matters under the study. The 3rd unit describe about the methodology to be adopted in the process of research under taking. The 4th unit mainly the analyze part of study diagnosis the data collect and relates them to different aspects. Method so as to provide sound conclusion and recommendation area apply. Finally the last chapter sum up all the points that are raise in the paper, draw conclusion and raise sound recommendation

CHAPTER TWO

2.0. LITERATURE REVIEW

This chapter contains about the theoretical and empirical literature review of under this study. Chapter covers topics related to the theories and concepts of digitalization, and financial performance. Besides, the study contains findings on digitalization on financial performance.

2.1. Theoretical review

2.2. Digitalization

The digitalization process of commercial banks has also led to better provision of banking services. With the utilization of information and communication technologies, the level of banking services offered to clients is more efficient and effective. Customers' details and transactions are easily created, stored and retrieved stored on a database. This helps to control the level of paper work that commercial banks have to handle. The process of opening accounts for new accounts for new customers, prospective customers' evaluation process for new accounts and loan process has been made very easy, effective and efficient as a result of the digital transformation (Gonzalez Paramo, 2017). Abbasi and Weigand (2017) observed that information and communication technologies has brought about a boost in the financial sector specifically the support of banking services, risk management and increase in productivity and these factors have encouraged financial institutions to increase investments in the process of digitalization.

According to a study conducted by Sibanda (2014) digital banking services were initially introduced in Zimbabwe in 2010 and has triggered a lot of activity and banking institutions are continuously scuttling for their share in the digital financial services space but a gap remains open on the aspects to be researched by the researcher. There is still a gap that needs to be researched on in accordance to the implementation of digital banking systems which is the performance part of the institution.

2.3. Digital banking

A digital banking technology is computerizing old banking service and performs transaction hand phone number. It is the digitalization of all banking operations to substitute the bank's physical presence, eliminating the customer's need to visit the branch. Digital Banking contain the following Activities like that Cash deposits, withdrawals, and transfers, Bill Payments, Account management and services, applying for financial products, Loan Management and Investment in financial services.

2.3.1. Method of Digital Payment

Currently, there are different methods of digital payment available in BOA. This are Banking cards, USSD, Mobile Wallets (Gize pay), Bank Prepaid Cards, POS (Point of Sale) Terminals, Internet Banking, Mobile Banking and Abyssinia online.

2.3.2. Advantages of Digital banking

The customers can conduct various transactions using platforms like online applications and bank websites. It provides ease and convenience to the customers in managing an account.

The following Are Some Advantages of Digital Banking:

Digital Banking assists customers in performing banking functions from the comfort of their homes. It is also convenient considering the pandemic and Digital banking allows the user to operate banking services around the clock with 24x7 availability of access to its functions.

All kinds of utility bills, including gas, electricity, phone, or other bills, and recharges can be done with one click. The customer can opt for reminders on upcoming payments and outstanding dues. There's also an auto debit facility to pay bills automatically with digital banking.

Internet banking has contributed notably to online payments. Online shopping is simplified since payment gateways are integrated with online shopping portals.

With the availability of smartphones at reasonable prices and internet access, digital banking services are expanding in remote areas. This is a step closer to holistic development.

Digital banking-enabled fund transfers reduce the risk of counterfeit currency.

It saves time, resources, and workforce since banking has become economical through digitalization. The efficiency and reach of banks are better and wider than before.

2.3.3. Challenges of digital banking

Traditional Banking Habits

This happens mainly because traditional banking is what many people are used to and it can take time for them to break habits. So, online banking marketers should focus on ways to convince traditional banking users to start using online banking services.

Security

Security is one of the most significant challenges for online banking marketers. This is because, in the past, if a robber was going to steal a person's bank savings, he or she would have to break into the bank vault, and make a daring escape with the money. This was an extremely difficult prospect and involved a lot of danger and risk.

Transaction Difficulty

It can be significantly more difficult and time consuming to deposit or withdraw money from an online bank. Not only do online banks often have fewer ATM's than their traditional counterparts, but it also can simply take longer amounts of time for deposits to be processed and put into a bank account.

Technical Issues

Because online banks rely so heavily on their online platforms, this means that they can generate substantial losses if their systems crash or if there are bugs in their code.

Sustainable competitive advantage

One of the most important challenges that have been thrown into focus is the amount of digital banking initiatives that have incremental to no impact on business. Don't get me wrong: I am the fiercest advocate of experimentation.

Understanding customer context

The other area where organizations have suffered is trying to superimpose digital solutions on traditional customers. We were fortunate to identify this challenge early and craft a tech centric consumer segmentation approach called DISC (Digital Native, Intelligent, Social, Connected).

Automation and the future of work

According to Ayana (2014), the major barriers Ethiopian banking industry faces in the adoption of Electronic banking are: security risk, lack of trust, lack of legal and regulatory framework. Lack of ICT infrastructure and absence of competition between local and foreign banks. Lack of suitable legal and regulatory framework for E-commerce and Electronic payment is another impediment for the adoption of new technology in banking industry. There is no separate legislation that deals with electronic banking including enforceability of the validity of electronic contracts, digital signatures and intellectual copyright and restricts the use of encryption technologies and High rates of illiteracy. Low literacy rate is a serious impediment for the adoption of E-banking in Ethiopia as it hinders the accessibility of banking services. For citizens to fully enjoy the benefits of Ebanking, they should not only know how to read and write but also possess basic ICT literacy (W 2010) (Gardachew, 2010).

2.4. Financial performance

According to Malesav et al. (2021) . a financial performance can also be expressed as the results obtained from various activities carried out within the available financial resources. Financial performance can be seen through the results of financial statement analysis or financial ratio analysis. According to Pollak et al. (2021) in analyzing a financial performance, the analysis requires a concept or aspect that can describe the company's financial data. Financial performance is an achievement achieved by a company in a certain period in describing the level

of excellence of the company. According to Peter et al. (2020) and Pollak et al. (2021) this can be the basis for assessing the condition of financial performance based on financial statement analysis.

Digital technology is developing very rapidly so that it is widely accepted and almost all over the world. The main goal in implementing digitalization is to provide maximum results in the customer satisfaction process. According to Peter et al. (2020) and Pollak et al. (2021), digital marketing has traceability capabilities that can help business people calculate the ROI (Return of Investment). According to Syazali et al. (2019) and Wanasida et al. (2021), the difference between this research and the previous one is to analyze the existence of digitalization and the use of digital payment on the financial performance. The results of this study are expected to provide benefits both theoretically and managerially. For this theoretical benefit, this research is expected to provide academic insight for all researchers as additional knowledge and input in research on matters related to digital payments to improve business performance, by paying attention to aspects of digitalizing. Return on assets measures how efficiently the bank is run and the return on equity measures how well the owners are doing on their investment return on Assets: net profit after taxes per dollar of assets.

$$\text{ROA} = \text{net profit after taxes} / \text{assets}$$

Return on Equity: net profit after taxes per dollar of equity capital

$$\text{ROE} = \text{net profit after taxes} / \text{equity capital}$$

Relationship between ROA and ROE is expressed by Equity Multiplier: the amount of assets per dollar of equity capital

$$\text{EM} = \text{Assets} / \text{Equity Capital}$$

Net profit after taxes/equity capital = net profit after taxes assets x assets equity capital

$$\text{ROA} = \text{ROE} * \text{EM}$$

2.5 Effect of Digitalization on the Profitability

Form of bank capital, from depositors, and from money that it borrows from other banks or by selling debt securities a bank buys assets primarily with funds obtained from its liabilities as can be seen from the following classic accounting equation.

Assets= Liabilities + Bank Capital (Owners' Equity)

The ROA is determined by the amount of fees that it earns on its services and its net interest income: Net interest income depends partly on the interest rate spread, which is the average interest rate earned on its assets minus the average interest rate paid on its liabilities.

2.6. Measures of digitalization and Financial Performance

Digitalization is an umbrella term for the process by which a customer may perform banking transactions electronically without visiting a brick –and- mortar institution. The following are the indicators of e-banking when used by customers and commercial banks: personal computer (PC) banking, Internet banking virtual banking, online banking, home banking, remote electronic banking, and phone banking. PC banking and Internet or online banking is the most frequently used designations. The Basle Committee on Banking Supervision of the Bank of International Settlements (BIS) has recommended using capital adequacy, assets quality, management quality, earnings and liquidity (CAMEL) as criteria for assessment of financial performance (ADB 2002). The sixth component, market risk (S) was added to CAMEL in 1997 (Gilbert, Meyer and Vaughan 2000).

CAMEL's framework is a common method for evaluating the soundness of financial institutions including commercial banks. This system was developed by regulatory authorities of the U.S banks. The Federal Reserve Bank, the Comptroller of the Currency and the Federal Deposit Insurance Corporation all use this system (McNally 1996). Monetary authorities in most of the countries are using this system to check up the health of an individual financial institution. CAMEL's framework system looks at six major aspects of a financial institution: capital adequacy, asset quality, management soundness, earning, liquidity, and sensitivity to market risk (Hilbers, Krueger and Moretti 2000).

Capital Adequacy

Capital adequacy ultimately determines how well commercial banks shocks to their balance sheets. Thus, it tracks capital adequacy ratios that take into account the most important financial risks, foreign exchange, credit and interest rate risks by assigning risk weightings to the institution's assets.

Asset Quality

Credit risk is one of the factors that affect the health of an individual commercial bank. The credit risk depends on the quality of assets held by an individual commercial bank.

Management Quality

Sound management is key to bank performance but is difficult to measure. It is primarily a qualitative factor applicable to individual institutions. Several indicators, however, can jauntily serve as an indicator of management soundness.

Earning Performance

Earning capacity or profitability keeps up the sound health of a commercial bank. Chronically unprofitable commercial bank risks insolvency on one hand and on the others, unusually high profitability can reflect excessive risk taking of a commercial bank.

Liquidity

Liquidity risk threatens the solvency of financial institutions. In the case of commercial banks, first type of liquidity risk arises when depositors of commercial banks seek to withdraw their money and the second type does when commitment holders want to exercise the commitments recorded off the balance sheet. In this approach, total net liquidity is worked out by deducting the total of uses of liquidity from the total of sources of liquidity. In addition, different liquidity exposure ratios such as borrowed funds to total assets, core deposit to total assets, loans to deposits, and commitments to lend to total assets are used to measure the liquidity position of the commercial bank (Saunders and Cornett 2004).

Sensitivity to Market Risk

Commercial banks are increasingly involved in diversified operations such as lending and borrowing, transactions in foreign exchange and selling off assets pledged for securities. All these are subject to market risk like interest rate risk, foreign exchange rate risk, and financial asset and commodity price risk. The health of a commercial bank is more sensitive to market risk is more hazardous than that of less sensitive. Foreign exchange risk, interest rate risk, equity price risk and commodity price risk are the indicators of sensitivity to market risk.

2.7. Empirical review

Several studies indicate that online bankers are the most profitable and wealthiest segment to banks (Robinson, 2000. Nyangosi, 2006). Electronic banking thus offers many benefits to banks as well as to customers. However, in global terms the majority of private bankers are still not using electronic banking channel. Finally, customers have been afraid of security issues (Sathye, 1999). E-banking continues to influence banks activities and their income structure. Among the activities that may be subject to stronger pressures for change are those that, up to today, have remained relatively insulated from ICT developments. This applies mainly to some retail banking activities that are suitable for standardization, and also to developments in remote banking (Kariuki, 2005). Simpson (2002) suggests that e-banking is driven largely by the prospects of operating costs minimization and operating revenues maximization.

While Sullivan and Richard (2000) finds no systematic evidence of a benefit of internet banking in USA brick and mortar banks. Furst et al: (2002) found that federally chartered USA banks had higher Return on Equity (ROE) by using the click and mortar business model.

Sushanta et al:(2006) studied the impact of information technology on the banking industry. They analyzed both theoretically and empirically how information technology and its related products such as are internet banking, electronic payments, security investments and information exchanges impact the banks performances. Berger et al: (2003) related how banks spending can affect bank profits via competition in financial services that are offered by the banks. Using a panel of 68 US banks for a period of over 20 years to estimate the impact of IT on profitability of banks, they found out that though IT might lead to cost saving, higher IT spending can create network effects lowering bank profits. They further contend that the relationship between IT

expenditures and bank's financial performance is conditional to the extent of network effect. They say that if network effect is too low, IT expenditures are likely to reduce payroll expenses, increase market share, and increase revenue and profit. Hernando and Nieto (2006) while studying whether internet delivery channels change bank's performance.

Mabrouk and Mamoghli (2010) in their study on Dynamics of Financial Innovation and Performance of Banking Firms: Context of an Emerging Banking Industry, analyzed the effect of the adoption of two types of financial innovations namely, product innovation (telephone banking and SMS banking and so on) and process innovation (Magnetic strip card (debit, ATM and credit card), Automatic cash dispenser: (Automatic teller machine: Electronic payment terminal and so on) on the performance of banks. Their analysis included two adoption behaviors, first mover in adoption of the financial innovation and imitator of the first movers. Behaviors, Time and cost savings and freedom from place have been found the main reasons underlying online banking acceptance. We measure digitalization in terms of digital connectivity, uses of the internet, e-business, and e-commerce to affect financial performance. By using different econometric techniques to a sample of ten city branch in bank of Abyssinia, we demonstrate the positive influences of digitalization on the developments of financial performance.

2.8. Conceptual concept

Mobile banking remains an avenue for increasing the profitability of commercial banks, as mobile banking services are geared towards increasing the velocity and circulation of money in the economy. This generates more profits for the banks through commission incomes as well as gradual reduction in overhead expense. The study revealed that digital banking has strong and significance marginal effects on returns on asset in the BOA.

This research analyzed how this technology helps unbanked and under banked populations decrease financial risk and gain entry to more secure financial services. The results indicated that consumers could increasingly turn to mobile phones to meet personal financial needs when banking services are not generally available. In this study, the importance of digital banking is indicated as threefold: Firstly, providing financial services in locations without banks. Secondly.

it raises important regulatory and competition policy issues and thirdly, by splitting and separating financial services into its component parts, it gives important conceptual insights into the nature of financial services. Virtual banking of Abyssinia bank is the first pioneer of interactive teller in Ethiopia and that have hayride experience of automotive teller machine and remote teller video chat. Bank of Abyssinia provide interactive teller machine to customer for the alternative option of visiting branch and avoid branch hassle with increase customer satisfaction and increasing availability for service enhancement.

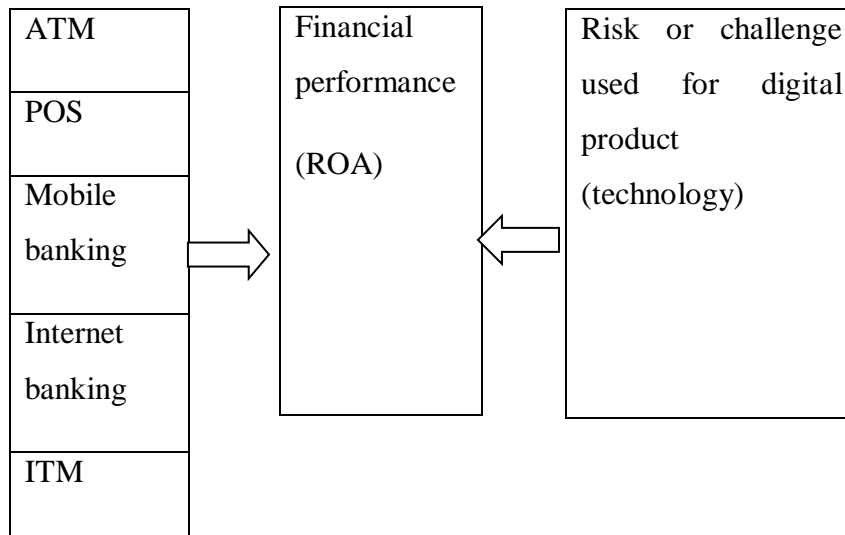


Figure 1: conceptual framework

CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1. Chapter introduction

This study in bank of Abyssinia that to solve organization problem to effect of digitalization on financial performance and comfortable to collect data in this branch. This section of research containing the research design method of study to target sample of population, Sampling, size and source of data and method of data collection tools and data analysis are employed.

3.2 Approach of research

Three approaches are used in conducting a given paper in term of the data used. The first approach quantitative data includes closed ended information like attitude, behavior and performance instrument. Collection of this kind of data using closed checklist on which the research checks the behaviors seen. The second and third approach qualitative and mixed approach of research.

3.3 Research design

Researcher used the casual method of research design to conduct study impact of digitalization on the financial performance in case of bank of Abyssinia, because descriptive research helps to explained state of affairs as it exists at the present and also tried to answer the question like what, who, when, and descriptive research also help to obtain information about current status of phenomena. Causal research is the investigate impact of digitalization on financial performance, and to determine causality of its. The assumption made relating to LRM, MRM and correlation

3.4. Area of study

This study in Addis Ababa because Addis Ababa is head office of BOA, which represent the city and out of city branch in the country. Most digital expert of BOA is located at head office that found capital city of the country.

3.5. Population, sampling techniques and sample size

The target population of this research is Abyssinia bank. The equations are distributed to the employee of Abyssinia bank that particularly employee who work on digital banking department and online banking department Addis Ababa at head office based on convenience sampling of non-probability sampling. Those selections were selected based on availability and willingness of employee and a number of staff found in digital banking and online banking department.

The number of equation distributing to one hundred eleven employees of bank.

$$n = \frac{N}{1 + Ne^2}$$

$$n = \frac{154}{1 + 154(0.05)^2}$$

$$n = \frac{154}{1 + 0.385}$$

$$n = \frac{154}{1.385} = 111$$

3.6. Source of data and method of data collection

To obtain the necessary data from the target respondent the researcher was used primary and secondary data. The primary data was obtained from employee of organization by questionnaire that the raw data of this study were collected from bank of Abyssinia. In Addis Ababa district employees by distributing questionnaire to company employees. Therefore, close ended questions for the respondent to express their opinion and ideas.

Secondary source of data can get from various sources like written documents, and company record and some other observed materials of the organization. The researcher uses both quantitative data that in the form of count where each data had unique number value associated with it and qualitative data cannot be expressed as a number. Data that represent nominal and order scales that usually considered being qualitative data to study.

To conduct this study the researcher, use different data collection methods.to collect primary data and questioner was used. To collect 2nd data relevant documents were reviewed and used. To conduct this study the researcher was collect information secretly for the safety and security of respondent. In the questionnaire the researcher was prepare the question and distribute to each employee of organization.

3.7. Data analysis method

If the data collected, it would be analysis for give conclusion and summery. The researcher describes quantitative and qualitative data analysis. Data analysis is bringing order and structure and meaning to mass of the collected data. The data collect through questionnaire by using close ended question and it was analyzed quantitatively by using percentage, tabulation, to interpret and analyze the data. Qualitative analysis of data was search for general statement about relationship of variable

3.8. Specification of model

This study built specific model and show on below

$$ROA=B + B1X1 +B2X2 + B3X3+B4X4+B5X5+e$$

Where ROA=return on asset

X1 = Mobile Banking,

X2 = ATM

X3= POS

X4 = Internet Banking

X5= ITM

B1– B5 are regression co-efficient mean independent variable change in dependent variable change. E is standard error term that affects ROA but not include in model

3.10. Ethical consideration

The aim of this study was to conduct meaningful research would effect of digitalization on financial performance. On this study used appropriate methodology used and give unbiased conclusion along with all data kept on confidentiality. On this study used objective measured identifying variable of interest in testing and relationship and carried accurate data analysis

Chapter four

Data analysis, interpretation with presentation

4.1. Introduction

This study investigates the impact of digitalization on financial performance of bank of Abyssinia. Specifically investigate digital product like mobile banking, internet banking, interactive teller machine, automated teller machine impact on return on asset. This chapter contains general background of respondent, data analysis, interpretation and finding. Organized data presentation base on specific objective of study.

As it was methodology section the information mentioned here was gathered by distributing questionnaires to the employees of bank of Abyssinia selective department. From thus distributed questionnaires 41 of them were not returned and the remaining 70 questionnaires used for interpretation and analysis of data here after. The analysis and justification of the findings from the information were approached by summarizing the relevant questions and respective responses for the topic on an issue and then further analyses is done sequentially. Tables were used to present the data and interpreted by using descriptive and inferential analysis method.

4.2 Respondent of general characteristics

Table 4.1 respondent sex

Sex					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	male	38	54.3	54.3	54.3
	female	32	45.7	45.7	100
	Total	70	100	100	

Source research own survey 2023

On the above table show item N_o 1, 38 (54.3%) of the respondents have found to be male and the rest 32(45.7%) of them were females. This shows that the most of respondents were males

Table 4.2 age of respondent

Age group					
	Age	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20-30 year	39	55.7	57.4	57.4
	31-40 year	22	31.4	32.4	89.7
	41-50 year	5	7.1	7.4	97.1
	51-60 year	2	2.9	2.9	100
	Total	68	97.1	100	
Missing	System	2	2.9		
Total		70	100		

Source: Researchers Own survey, 2023

The age distribution of the respondent is also indicated on the table item N_o1, it shows that 39(55.7%) were respondent age range of 20-30 year, 22(31.4%) were respondent age between 31-40 year, 5(7.1%) of them were categorized in the age group between 41-50 years, 2(2.9%) of them were categorized in the age between 51-60 years. The remaining 2(2.9%) of the respondents were not give response. This show that most of organization employee in the adult group of age which means 52(74.2%) of the respondents were between 20-30 years. This enables the most person easily understand digital technology from actual and potential skill and knowledge of respondent through digitalization.

Table

Table 4.3 The marital status of sample respondent

Marital Status					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	single	20	28.6	29.4	29.4
	married	39	55.7	57.4	86.8
	divorced	7	10	10.3	97.1
	widowed	2	2.9	2.9	100
	Total	68	97.1	100	
Missing	System	2	2.9		
Total		70	100		

Source: Researchers Own survey, 2023

The above table show majority of the respondent 39(55.7%) of were married. and 20(28.6%) of the respondents were unmarried. In addition to this it is revealed that 7(10%) of the respondents were divorced, 2(2.9%) respondent widowed and the remaining 2(2.9%) respondent not give response. Therefore, it can be understood that most of respondents married.

Table 4.4 respondent education level

Education status					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Degree	66	94.3	100	100
Missing	System	4	5.7		
Total		70	100		

Source: Researchers Own survey, 2023

The above table show distribution sample of respondent on the base of their education level. As it can be understood from the above table, 66(94.3%) of the respondent's educational level have got their bachelor degree and masters in different fields, the remaining respondent 4(5.7%) of

were not give response. From this the researcher can summarize that most of the respondents were well educated, which means all of the respondent have got degree holder.

Table 4.5. Working Experience level of the sample respondents

How long have you worked in the Banking Sector					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1- 5 year	29	41.4	42	42
	6 -10 year	33	47.1	47.8	89.9
	11-15 year	4	5.7	5.8	95.7
	16-20 year	1	1.4	1.4	97.1
	above 20 year	2	2.9	2.9	100
	Total	69	98.6	100	
Missing	System	1	1.4		
Total		70	100		

Source: Researchers Own survey, 2023

The table shows the distribution respondent on the base of their Working Experience. As it can be understood from the above table, out of 70 respondent's 41.4% respondents staid in the bank for 1-5 years, 47.1% respondents staid in the bank for 6-10 years, 5.7% respondents staid in the bank for 11-15 years, 2.9% respondents staid in the bank for above 20 years, and the rest 1.4% respondents were not give response. This implies most of staff was high work experience.

4.3. Factors that influence consumers to use digital banking

4.3.1 Descriptive analysis

This part of study contain mean and standard deviation along with minimum and maximum value of dependent based on SPSS output.

This section also shows whether the standard deviation is far from or close to the mean of each variable. Because low standard deviation show close to mean and vice versa. Descriptive statistics and frequency were presented.

This part has regarded to factor affecting customer to use digital banking and customer keep you opinion that much.

Table 4.6 descriptive statistics

	N	Strongly agree %	Agree	neutral	disagree	Strongly disagree	Mean	Std. Deviation
Using digital banking for my banking transaction is convenient	66	28.6	42.9	14.3	5.7	2.9	2.06	0.99
Digital banking program is easy for you to manage your finances.	70	31.4	34.3	28.6		5.7	2.14	1.053
Digital banking makes me more comfortable to communicate with the bank	70	37.1	31.4	17.1	8.6	5.7	2.14	1.183
Using digital banking is clear and understandable	70	30	44.3	20		5.7	2.07	1.012
Most of the time there is internet/network interruption while using banking service	70	24.3	48.6	15.7	8.6	2.9	2.17	0.992
Digital banking requires many steps and more complex	70	35.7	32.9	14.3	11.4	5.7	2.19	1.207
Using digital banking to do my banking business fits into my work style	70	52.9	28.6	17.1	1.4		1.67	0.812
you have received enough information about the benefits of digital banking	70	40	41.4	10		8.6	1.96	1.135

Source: compiled by SPSS

Using digital banking for my banking transaction is convenient

As show on above table 4.6, 42.9 % were agree and 28.6 % were strongly agree and 14.3 % were neutral, 5.7% disagreed last one were 2.9% strongly disagree that Using digital product has been convenient. Mean score of digital banking convenient was 2.06 that imply most respondent who agree statement of digital banking is convenient. The standard deviation of the respondent was 0.99 that indicate spread in one standard deviation from mean.

The implies customers have aware about digital banking use digital product and more information about digitalization with more informative benefit of digitalization.

Digital banking is easy to manage your finances

Based on the above table 4.6. 34.3% were agreed , 31.4 % were strongly agree and 28.6 % were neutral, and 5.7% strongly disagree that Digital banking program is easy for you to manage your finance. Digital product easy to you to manage your finance was 2.17. This mean score imply most of the respondent agreed to digital banking is easy to manage you finance. The standard deviation was 1.053 that spread on the respondent

Digital banking makes me more comfortable to communicate with the bank

Based on above table 4.6, 31.4 % were agree, 37.1 % were strongly agree, 17.1 % was neutral, 8.6% disagree and 5.7% strongly disagree that Digital product make more comfortable to communicate with BOA. The mean score of digital banking makes comfortable to communicate with bank was 2.14 that imply most of the respondent said comfortable to communicate bank. And the standard deviation is 1.183.

Using digital banking is clear and understandable

Based on table 4...6, 44.3% were agree, 30 % were agree, 20 % neutral and 5.7% strongly disagree that Using digital banking is clear and understandable. Mean score, using digital banking is clear and understandable were 2.07 that imply most respondent agree about using digitalization is clear and understandable. Standard deviations of 70 sample of respondent were 1.012.

Most of the time network affects using digital banking

Based on table 4.6, 48.6% were agree , 24.3 % were strongly agree, 15.7 % neutral , 8.6 % disagree and 2.9 % strongly disagree that most of the respondent compline on internet interruption. the mean score of response about network or internet interruption was 2.17. This implies most of the customer agrees the network interruption. The standard deviation of the statement was 0.992 that imply good spread of response.

.Digital banking requires many steps and more complex

As show on table 4 .6, 32.9 % were agree, 35.7 % were strongly agree, 14.3 % was neutral, 11.4 disagree, 5.7% strongly disagree that Digital banking requires many steps and more complex. The mean score of statement Digital banking requires many steps and more complex was 2.17 that imply most the customer compline about digital banking usage step on the other hand standard deviation was 1.053.

Using digital banking to do my bank fits in to my work style.

On the table4.6, 28.6% were agree, 52.9 % were strong agree, 17.1 % neutral, 1.4% disagrees that Using digital product to do my bank fits into my work style. Mean score of this statement was 1.67 that imply most of respondent agree this statement and fits into work style. The standard deviation of using digital banking to do fit into my work style was 0.812.

You have received enough information about the important of digitalization

On table4.6, 41.4% were agree, 40 % were agree, 10 % were neutral , 8.6 % strongly disagree that You have received enough information about the important of digitalization. mean score of You have received enough information about the important of digitalization was 1.96 that imply most customer that have enough information about digitalization. Standard deviation of you have received enough information about the important of digitalization of response was 1.135.

Generally, the influences of customer to use digitalization are convenient, affordable, easy to understand, and communicate easily to bank with perform transaction on digital system. finally customer to use digital product for any time with any place without restriction.

4.4. Effect of digitalization on the ROA

The second objective of this study was the impact of digitalization on return on investment or return on asset on bank of Abyssinia.

4.4.0. Diagnostic tests

In this section the describe on classical linear regression model are tested individually.

A. Test for Heteroskedasticity

According to (Brooks, 2008), the variance of the disturbances should be consistent for all observations. If there is a constant variance of errors it fulfills the assumption of Homoscedasticity. On the other hand, if the variance changes for a range of observations, it violates the assumption of homoscedasticity or it is said to be heterosekedasticity is existed.

Hypothesis

H0: there is homoscedasticity

H1: there is heteroskedasticity

This assumption is tested by white test for heteroskedasticity post estimation technique.

Table Heteroskedasticity stata out put

```
. estat imtest, white

White's test for Ho: homoskedasticity
  against Ha: unrestricted heteroskedasticity

      chi2(20)    =    25.19
      Prob > chi2 =    0.1944

Cameron & Trivedi's decomposition of IM-test
```

Source	chi2	df	p
Heteroskedasticity	25.19	20	0.1944
Skewness	11.91	5	0.0361
Kurtosis	2.41	1	0.1208
Total	39.50	26	0.0437

Source: STATA output

According to STATA output the p value of chi square is $>$ (greater than) α (0.05). This indicates that there is no heteroskedasticity. Due to this the null hypothesis is accepted. Therefore, this implies which errors of variance constant across observation.

B. Test for Normality

This post estimation technique tests is the assumption of disturbances are normally distributed through skewness/kurtosis test for normality methods.

Hypothesis

HO= error term are normally distributed

HO= error term are not normally distributed

Skewness/Kurtosis test for normality

Table Normality test

```
. predict resid, residuals
. sktest resid
```

Skewness/Kurtosis tests for Normality						
Variable	Obs	Pr(Skewness)	Pr(Kurtosis)	adj	joint chi2(2)	Prob>chi2
resid	70	0.2217	0.1069		4.23	0.1208

On table of STATA output show that kurtosis is asymptotically distributed and value is 0.1069 > 0.05). So, the null hypothesis is accepted due to p value greater than α , and residuals show normal distribution.

C. Test for Multicollinearity

If there is a linear correlation between independent variables it cause for multicollinearity. So, it must be tested by VIF (Variance Inflation Factor) for no multicollinearity problem.

Table of multicollinearity test

```
. reg Q29 ATM POS MOBILEBAKING IB ITM
```

Source	SS	df	MS	Number of obs	=	70
Model	39.4115745	5	7.88231491	F(5, 64)	=	15.21
Residual	33.1741398	64	.518345934	Prob > F	=	0.0000
Total	72.5857143	69	1.05196687	R-squared	=	0.5430
				Adj R-squared	=	0.5073
				Root MSE	=	.71996

Q29	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
ATM	.2943197	.1330295	2.21	0.031	.0285627	.5600768
POS	.209064	.1146204	1.82	0.073	-.0199165	.4380445
MOBILEBAKING	-.0040977	.1452734	-0.03	0.978	-.2943147	.2861194
IB	.4060572	.1715052	2.37	0.021	.0634362	.7486783
ITM	.0104489	.1626551	0.06	0.949	-.314492	.3353898
_cons	.2118599	.255864	0.83	0.411	-.2992871	.7230069


```
. vif
```

Variable	VIF	1/VIF
IB	3.40	0.293987
ITM	2.68	0.373228
POS	2.09	0.477740
MOBILEBAKING	2.07	0.482807
ATM	1.95	0.513093
Mean VIF	2.44	

The STATA output of table shows the mean VIF as 2.44 which is less than 10. As a result, this shows that there is not multicollinearity. Due to this null hypothesis is accepted.

E. Omission of relevant variables from the model

This diagnostic test method used to check whether relevant explanatory variables are excluded from the model or not.

Hypothesis

H0=there is no omission of relevant variables

H1= there is omission of relevant variables

no omission of relevant variables

Table of Omission variable test

```
. reg Q29 ATM POS MOBILEBAKING IB ITM
```

Source	SS	df	MS	Number of obs	=	70
Model	39.4115745	5	7.88231491	F(5, 64)	=	15.21
Residual	33.1741398	64	.518345934	Prob > F	=	0.0000
Total	72.5857143	69	1.05196687	R-squared	=	0.5430
				Adj R-squared	=	0.5073
				Root MSE	=	.71996

Q29	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
ATM	.2943197	.1330295	2.21	0.031	.0285627 .5600768
POS	.209064	.1146204	1.82	0.073	-.0199165 .4380445
MOBILEBAKING	-.0040977	.1452734	-0.03	0.978	-.2943147 .2861194
IB	.4060572	.1715052	2.37	0.021	.0634362 .7486783
ITM	.0104489	.1626551	0.06	0.949	-.314492 .3353898
_cons	.2118599	.255864	0.83	0.411	-.2992871 .7230069

```
. ovtest
```

```
Ramsey RESET test using powers of the fitted values of Q29
```

```
Ho: model has no omitted variables
```

```
F(3, 61) = 2.40
```

```
Prob > F = 0.0766
```

Source: STATA output

According to STATA output p value was 0.0766 was greater than 0.05. Therefore, null hypothesis was accepted. And this implies that all the relevant explanatory variables are included in the model.

4.4.1 Inferential statistics

Quantitative data is usually analyzed through statistical procedure. Regression analysis valuable for quantifying the effect of various influences upon a single dependent variable. Simple linear regression equation was used to determine the effect of digitalization on return on asset of BOA. The independent variables of ATM, POS, MB, IB, and ITM. B is intercept and B1, B2, B3, B4, B5, are coefficients for independent variable that dependent variable of return on investment. On the other hand, e represents error term that represents residual or disturbance factors or value. Multiple linear regressions used to determine the impact digitalization on return on investment BOA.

This study used SPSS in data analysis. The analysis was at 0.05 level of significance. The study conducted regression analysis for the follow analysis model.

$$ROA=B+B1X1+B2X2+B3X3+B4X4+B5X5$$

$$X1=ATM$$

$$X2= POS$$

$$X3= Mobile Banking$$

$$X4= Internet Banking$$

$$X5 = ITM$$

B1 to B5 are regression coefficient

E is random error

4.4.1.0. Multiple regression analysis

This section of the quantitative analysis shows the effects of digitalization on dependent variable. Therefore, this part clearly shows the effect ATM, POS, mobile banking, internet banking and ITM on ROA.

. reg Q29 ATM POS MOBILEBAKING IB ITM

Source	SS	df	MS	Number of obs	=	70
Model	39.4115745	5	7.88231491	F(5, 64)	=	15.21
Residual	33.1741398	64	.518345934	Prob > F	=	0.0000
				R-squared	=	0.5430
				Adj R-squared	=	0.5073
Total	72.5857143	69	1.05196687	Root MSE	=	.71996

Q29	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
ATM	.2943197	.1330295	2.21	0.031	.0285627 .5600768
POS	.209064	.1146204	1.82	0.073	-.0199165 .4380445
MOBILEBAKING	-.0040977	.1452734	-0.03	0.978	-.2943147 .2861194
IB	.4060572	.1715052	2.37	0.021	.0634362 .7486783
ITM	.0104489	.1626551	0.06	0.949	-.314492 .3353898
_cons	.2118599	.255864	0.83	0.411	-.2992871 .7230069

Estimated equation of ROA

$$ROA = 0.2118 + 0.2943X_1 + 0.2091X_2 - 0.0041X_3 + 0.4061X_4 + 0.0104X_5 + e$$

The finding shows that the constant term 0.2118 that imply without affect by independent variable in the specific model of ROA is 0.2118. adjusted R squared is 51% that model are relevant and has effect on dependent variable. The remaining indicates the error terms.

4.4.1.1 Reliability of research

Table 4.27 reliability test

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.884	.887	5

Source: researchers Own survey, 2023

The alpha coefficient for this study is 0.884 for five items, and those result relatively high consistency because reliability coefficient of alpha greater than 0.70 considered acceptable in most social science research.

4.4.2. ATM and Return on Assets

4.4.2.1 Correlation analysis

The study determined strength of relation between ATM and ROA of BOA. Pearson correlation was used. ATM and ROA have strong positive correlation and the value is 0.583 with a significantly positive relationship.

Table 4.7 correlation of ATM and return on asset

Bayes Factor Inference on Pairwise Correlation				
			ATM	return on asset
ATM		Pearson Correlation	1	0.583
		Bayes Factor		0.000
		N	70	70
Return on asset		Pearson Correlation	0.583	1
		Bayes Factor	0.000	

Source: researchers Own survey, 2023

4.4.2.2 Regression analysis

This study explained simple linear regression ATM and ROA and adjusted R squared is 0.34 and which a coefficient of determination that indicates the variation in dependent variable resulting from the change in the independent.

Table 4.8 Model Summary for ATM and return on asset

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.583 ^a	0.340	0.330	0.83958	0.340	34.974	1	68	0.000
a Predictors: (Constant), ATM									
b Dependent Variable: Return on asset									

Source: researchers Own survey, 2023

Table 4.9 ANOVA for ATM and return on asset

ANOVA						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	24.653	1	24.653	34.974	.000 ^b
	Residual	47.933	68	0.705		
	Total	72.586	69			
a Dependent Variable: Return on asset						
b Predictors: (Constant), ATM						

Source: researchers Own survey, 2023

$$Y = 0.796 + 0.657X_1 \dots \dots \dots \text{Equation 1}$$

The above regression equation implies BOA constant that not affected by ATM the performance was 0.796. On the other hand ATM changed by one unit financial performance changed by 0.657.

Table 4.10 Coefficients for ATM and Financial Performance

Coefficients										
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		<u>Collinearity Statistics</u>	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	0.796	0.255		3.117	0.003	0.287	1.306	0.796	0.255
	ATM	0.657	0.111	0.583	5.914	0	0.435	0.879	0.657	0.111

a Dependent Variable: Return on asset

Source: researchers Own survey, 2023

The above tables shows ATM have generate income for bank of Abyssinia. Therefore, the bank more expands ATM around potential area that customer use ATM with bank collects profit.

4.4.3 POS Terminals and Return on Assets

4.4.3.1 Correlation Analysis

The study determined strength of relation between POS and ROA of BOA. Pearson correlation was used. POS and ROA have strong positive correlation and the value is 0.615 that imply a significantly positive relationship with significant level of 0.5%.

Table 4.11 Correlation POS and Financial Performance

Bayes Factor Inference on Pairwise Correlation			
		Return on asset	POS
Return on asset	Pearson Correlation	1	0.615
	Bayes Factor		0
POS	Pearson Correlation	0.615	1
	Bayes Factor	0	

^a Bayes factor: Null versus alternative hypothesis.

Source: researchers Own survey, 2023

4.4.3.2 Regression Analysis

This study explained simple linear regression between POS and ROA and the adjusted R squared was 0.368 and which a coefficient of determination that indicates the variation in dependent variable resulting from the change in the independent variable. This implies 36 % age variation of ROA due to POS.

Table 4.12 Model Summary for POS and Financial Performance

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.615 ^a	0.378	0.369	0.81500	0.378	41.280	1	68	0.000
a Predictors: (Constant), POS									
b Dependent Variable: return on asset									

Source: researchers Own survey, 2023

Table 4.13 ANOVA for ATM and Financial Performance

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	27.419	1	27.419	41.28	.000b
	Residual	45.167	68	0.664		
	Total	72.586	69			
a Dependent Variable: return on asset						
b Predictors: (Constant), POS						

Source: researchers Own survey, 2023

$$ROA=0.926+0.576X2.....Equation2$$

The above regression equation implies ROA financial performance that not affected by POS was 0.926. On the other hand POS changed by one unit financial performance changed by 0.576. This regression show 57% change ROA that change associated with POS by one unit.

Table 4.14 Coefficients for POS and ROA

Coefficients										
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	0.926	0.219		4.232	0.000	0.490	1.363	0.926	0.219
	POS	0.576	0.090	0.615	6.425	0.000	0.397	0.755	0.576	0.090

a Dependent Variable: Return on asset

Source: researchers Own survey, 2023

Complementary findings in a study done bank of Abyssinia that improve asset to minimize transaction cost of bank. The above table's shows POS have generate income for bank of Abyssinia. Therefore, the bank more expands POS around potential area(like hotel, supper market, gas station etc) that customer use POS with bank collects profit.

4.4.4 Mobile Banking and Return on Assets

4.4.4.1, correlation analysis

The study determined strength of relation between mobile banking and ROA of BOA. Pearson correlation was used. Mobile banking and ROA have strong positive correlation and the value is 0.526 that imply a significantly positive relationship with significant level of 0.5%.

Table 4.15 Correlation mobile banking and Financial Performance

Bayes Factor Inference on Pairwise Correlations			
		Return on asset	Mobile banking
return on asset	Pearson Correlation	1	0.526
	Bayes Factor		0.000
Mobile banking	Pearson Correlation	0.526	1
	Bayes Factor	0.000	
a Bayes factor: Null versus alternative hypothesis.			

Source: researchers Own survey, 2023

4.4.4.2 Regression Analysis

This study explained simple linear regression between mobile banking and ROA and the adjusted R squared was 0.276 and which a coefficient of determination that indicates the variation in dependent variable resulting from the change in the independent variable. This implies 27 % age variation of ROA due to POS change in one unit.

Table 4.16 Model Summary for mobile banking and ROA

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.526 ^a	0.276	0.266	0.87891	0.276	25.965	1	68	0.000
a Predictors: (Constant), mobile banking									
b Dependent Variable: Return on asset									

Source: researchers Own survey, 2023

Table 4.17 ANOVA for mobile banking and ROA

ANOVA						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	20.057	1	20.057	25.965	.000 ^b
	Residual	52.528	68	0.772		
	Total	72.586	69			
a Dependent Variable: Return on asset						
b Predictors: (Constant), mobile banking						

Source: researchers Own survey, 2023

$$Y = 0.903 + 0.628X_3 \dots \dots \dots \text{Equation 3}$$

The above regression equation implies ROA financial performance that not affected by mobile banking was 0.903. On the other hand mobile banking changed by one unit financial performance changed by 0.628. This regression show 62% change ROA that change associated with mobile banking by one unit.

Table 4.18 Coefficients for mobile banking and ROA

Coefficients										
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	0.903	0.273		3.310	0.001	0.359	1.447	0.903	0.273
	Mobile banking	0.628	0.123	0.526	5.096	0.000	0.382	0.874	0.628	0.123

a Dependent Variable: Return on asset

Source: researcher own survey 2023

Complementary findings in a study done bank of Abyssinia that improve asset to minimize transaction cost of bank. The above table’s shows mobile banking has generated income for bank of Abyssinia to directly and indirectly. Therefore, the bank more expands potential user of this digital banking product with bank collects profit

4.4.5 Internet Banking and Return on Assets

4.4.5.1 Correlation analysis

the study determined strength of relation between internet banking and ROA of BOA. Pearson correlation was used. Mobile banking and ROA have strong positive correlation and the value is 0.679 that imply a significantly positive relationship with significant level of 0.5%

Table 4.19 Correlation internet banking and Financial Performance

Bayes Factor Inference on Pairwise Correlations				
			Mobile banking	return on asset
Mobile banking		Pearson Correlation	1	0.679
		Bayes Factor		0.000
Return on asset		Pearson Correlation	0.679	1
		Bayes Factor	0.000	

Source: researchers Own survey, 2023

4.4.5.2 Regression Analysis

This study explained simple linear regression between mobile banking and ROA and the adjusted R squared was 0.276 and which a coefficient of determination that indicates the variation in dependent variable resulting from the change in the independent variable. This implies 27 % age variation of ROA due to mobile banking change in one unit.

Table 4.20 Model Summary for internet banking and ROA

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.679 ^a	0.461	0.453	0.75873	0.461	58.088	1	68	0.000
a Predictors: (Constant), IB									
b Dependent Variable: Return on asset									

Source: researchers Own survey, 2023

Table 4.21 ANOVA for internet banking and ROA

ANOVA						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	33.440	1	33.440	58.088	.000 ^b
	Residual	39.146	68	0.576		
	Total	72.586	69			
a Dependent Variable: Return on asset						
b Predictors: (Constant), IB						

Source: researchers Own survey, 2023

$$Y = 0.564 + 0.747X_4 \dots \dots \dots \text{Equation 4}$$

The above regression equation implies ROA financial performance that not affected by internet banking was 0.564. On the other hand mobile banking changed by one unit financial

performance changed by 0.747. This regression show 75% change ROA that change associated with mobile banking by one unit.

Table 4.22 Coefficients for internet banking and ROA

Coefficients										
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	
1	(Constant)	0.564	0.231		2.438	0.017	0.102	1.025	0.564	0.231
	IB	0.747	0.098	0.679	7.622	0.000	0.551	0.942	0.747	0.098

a Dependent Variable: Return on asset

Source: researcher own survey 2022

Complementary findings in a study done bank of Abyssinia that improve asset to minimize transaction cost of bank. The above table's shows mobile banking has generated income for bank of Abyssinia to directly and indirectly. Therefore, the bank more expands potential user of this digital banking product with bank collects profit.

4.4.6 ITM and return on asset

4.4.6.1 Correlation Analysis

The study determined strength of relation between internet banking and ROA of BOA. Pearson correlation was used. Mobile banking and ROA have strong positive correlation and the value is 0.578 that imply a significantly positive relationship with significant level of 0.5%.

Table 4.23 Correlation ITM and Financial Performance

Bayes Factor Inference on Pairwise Correlation				
			ITM	return on asset
ITM		Pearson Correlation	1	0.578
		Bayes Factor		0.000
Return on asset		Pearson Correlation	0.578	1
		Bayes Factor	0.000	

Source: researchers Own survey, 2023

4.4.6.2 Regression Analysis

This study explained simple linear regression between ITM and ROA and the adjusted R squared was 0.335 and which a coefficient of determination that indicates the variation in dependent variable resulting from the change in the independent variable. This implies 35.5 % age variation of ROA due to mobile ITM change in one unit.

Table 4.24 Model Summary for ITM and Financial Performance

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.578 ^a	0.335	0.325	0.84282	0.335	34.183	1	68	0.000
a Predictors: (Constant), ITM									
b Dependent Variable: Return on asset									

Source: researchers Own survey, 2023

Table 4.25 ANOVA for ITM and Financial Performance

ANOVA						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	24.282	1	24.282	34.183	.000b
	Residual	48.304	68	0.71		
	Total	72.586	69			
a Dependent Variable: Return on asset						
b Predictors: (Constant), ITM						

Source: researchers Own survey, 2023

$$Y = 0.801 + 0.680X5 \dots \dots \dots \text{Equation5}$$

The above regression equation implies ROA financial performance that not affected by ITM was 0.801. On the other hand mobile banking changed by one unit financial performance changed by 0.68. This regression show 68% change ROA that change associated with ITM by one unit.

Table 4.26 Coefficients for ITM and ROA

Coefficients										
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	0.801	0.257		3.113	0.003	0.288	1.315	0.801	0.257
	ITM	0.680	0.116	0.578	5.847	0.000	0.448	0.912	0.680	0.116
a Dependent Variable: Return on asset										

Source: researchers Own survey, 2023

Complementary findings in a study done bank of Abyssinia that improve asset to minimize transaction cost of bank. The above table’s shows ITM have generated income for bank of Abyssinia to directly and indirectly. Therefore, the bank more expands potential user and expand accessibly of this digital banking product with bank collects resource from customers.

4.6 Effect of digitalization risk or challenge on profit of BOA

This part discuss about the impact of digitalization risk or challenge on profit of bank of Abyssinia.

Table 4.28 descriptive analysis

Table 4.28 descriptive analysis

	Strongly agree %	Agree %	Neutra 1 %	Disagr ee %	Strongly disagree %	Mean	Std. Deviation
Bank vulnerable to cyber attacks	5.7	40	22.9	21.4	10	2.9	1.118
Create awareness to illiterate peoples negatively affect profitability of bank	18.6	12.9	32.9	24.3	11.4	2.97	1.262
Problem of network affect digital transaction hence affect banks profitability	18.6	28.6	31.4	11.4	10	2.66	1.202
Fright of losing money in the online transaction	17.1	35.7	25.7	15.7	5.7	2.57	1.124
Accessing financial information using digital banking channels is secure	10	38.6	27.1	18.6	5.7	2.71	1.065

Source: researcher own survey 2023

On this part, respondent give answer to their risk of digitalization on your opinioned of extend agreement. Bank vulnerable to cyber-attacks, respondent said 5.7% wares strongly disagree, 40% ware agree, 22.9% were neutral, 21.4% ware disagreed while 10% strongly disagreed.

respondents indicated that they 18.6% ware strongly agree, 12.9%ware agree, 32.9% ware neutral,24.3% ware disagree, strongly disagreed ware 11.4% on Create awareness to illiterate peoples negatively affect profitability of bank.

They were asked to Problem of network affect digital transaction hence affect banks profitability. 10% were strongly disagreed, 11.4% disagreed, 31.4 were neutral about it, 28.6% agreed while 18.6% strongly agreed.

They were also asked Fright of losing money in the online transaction. 5.7% were strong disagree, 15.7% were disagree, 25.7% were neutral, 35.7 were agree and 17.1 strongly agreed.

The agreement of respondent about financial information accessing on digital banking channels is secure. 5.7% strongly disagreed, 18.6% disagreed, 27.1 were neutral, 38.6 agreed while 10% were strongly agree.

Generally, challenge of digitalization is interruption of network and system failed, attitude or behavior of client negatively affects return of asset that negatively affected negatively.

Chapter five

5.0. Summery, conclusion and recommendation

This chapter contain summery of finding, conclusion, recommendation and need for the future study. This study describe the effect of digitalization on financial performance in bank of Abyssinia

5.1. Finding of summery

This study finding was the impact of digitalization on financial performance like that return on asset or investment. Most of organization employee in the adult group of age, male and high working experience. This enables the most person easily understand digital technology from actual and potential skill and knowledge of respondent through digitalization. Additionally, the education level of respondent influences to use digital technology that most respondent have been more educated and high user of digital product.

Quantitative data is usually analyzed through statistical procedure. Regression analysis valuable for quantifying the effect of various influences upon a single dependent variable. Simple linear regression equation was used to determine the effect of digitalization on return on asset of BOA. The independent variables of ATM, POS, MB, IB, and ITM. On the other hand, e represents error term that represents residual or disturbance factors or value. Multiple linear regressions used to determine the impact digitalization on return on investment BOA.

On this part, respondent give answer to their risk of digitalization on your opinioned of extend agreement. Bank vulnerable to cyber-attacks, respondent. Respondents indicated that they Create awareness to illiterate peoples negatively affect profitability of bank. They were asked to Problem of network affect digital transaction hence affect banks profitability.

Finally, digitalization especially internet and mobile banking digital product focused. The major finding of the first objective shows that speed of delivery, ease of use, access and reliability of services were positively related and influences to use digital product of bank. The second objective of study shows those determines return on asset that ATM, POS, mobile banking, internet banking and interactive teller machine were positively impacted to ROA and were

significant at 0.05 significant levels. The third and finally objective shows digitalization risks that affect bank profitably and were negative related.

Digital banking services can be done anywhere. The only challenge is that most of the users of digital banking services in Ethiopia are literate who are well-informed with technology and the usage of the digitalization. This implies that those who are illiterate cannot use internet-banking services for their daily activities. The illiterate could not easily use internet banking services hence they were satisfied with the services provided by their bank. The key concern was service quality

5.2. Conclusion

This study attempts to examine impact of digitalization on bank's financial performance. One private commercial banks (Bank of Abyssinia) were selected. Bank digitalization's have that influence financial performance of Bank of Abyssinia was positively. ATM, POS, mobile banking, internet banking, and ITM. Digitalization on financial technology provide competition among a bank and attract potential customer for the use of digital product about bank provide good, understandable, convenient, comfortable digital technology to customers. On the other hand digital technology beyond competition advantage that minimizes human resource cost material cost and maximize usage of client and so on.

In general, the bank of Abyssinia in recent year has been provide excellent digital technology with operation and way of providing digital technology but bank of Abyssinia still not full of digitalization that mean starting of digital technology but not ending. Therefore through these researches the following findings are confirmed.

- The influence of customer use digitalization of banking services in BOA. The customer use digital technology due to reliability of technology, easily understandable of digital technology, conveniently of technology, affordability of digital product are directly and positively affect customer to use digital technology. On the other way, customer directly affected by your behavior or attitude that use digital technology. So attitude and behavior directly affect use of digital technology.

- The second objective of this research was the effect of digitalization on financial performance. Doing this research several method use to evaluate digitalization that affect financial performance. Quantitative data is usually analyzed through statistical procedure. Regression analysis valuable for quantifying the effect of various influences upon a single dependent variable. Simple linear regression equation was used to determine the effect of digitalization on return on asset of BOA. Multiple linear regressions used to determine the impact digitalization on return on investment BOA. The analysis was at 0.05 level of significance. The study conducted regression analysis for analysis model. General, digitalization like that automotive teller machine, interactive teller machine, interactive teller machine directive, strongly, and positively affect financial performance of return on asset.

- The last one is risk or challenge of the customer to use digitalization on ROA. Risk of digitalization for banks are losing of potential customer to lack of knowledge of customer due to enforce that provides digital banking to use. Developing digital technology, customer have lack of confident use those technology. This finding implies the user of digital technology not confident to use digital technology and not reliable digital technology get by customer.

5.3. Recommendation of research

The recommendation of this study based on specific objective of study

5.3.1 Factors that influence consumers to use digital banking

This study contain factor that influence consumers to use digital banking on that bank of Abyssinia. The researcher recommended, banking that choice digital banking of bank of Abyssinia that customer first choice BOA digital banking. Digital banking product should be the most affordable, convenient, easily to understand, hassle of visiting branch, system of digital banking has been easily to communicate and eco-friendly to digital product. Finally, digital product of bank of Abyssinia should most updating digital product to use digitalization.

5.3.2 Effect of digitalization on ROA

Bank of Abyssinia have been adapt digitalization on continuously with aggressive to protect customer need and satisfaction that maximize banks financial performance along with protect banks good will. researcher recommended to bank of Abyssinia that invest on mobile banking that the customer easily digital banking and the bank minimize transaction cost due to self-service of customer. On the other way, other digital banking product like that ATM which bank collect service charge fee that the bank increase profit, so the BOA should deployed more ATM due to maximize profit for self service, commission and collect resource.

That BOA could intensify effort deploy digital banking product to minimize transaction cost, increase availability, enhance service and so on. Bank of Abyssinia should endeavor to reactive all channels like mobile banking, internet banking, ATM, POS, ITM and so on. Finally, the bank periodically reviews the digital channel product and updates the system to increasing customer loyalty with reduction of cost.

5.3.3 Effect of digitalization risk or challenge on profit of bank

On this study Challenge of digitalization was raise from illiterate or lack of education to manage finance on digital banking. So bank of Abyssinia to solve this problem by assign assistance for digital banking user to adapted how to use digital banking, when and where to accesses those digital product and create awareness to customer. On the other hand, bank of Abyssinia draft gaud line and give to customer for easily manage the account on digital channel with convenient, affordable, easily to understand and so on. Finally, bank of Abyssinia identify challenge by highest risk to low risk of challenge and give immediate response before risk can be performed.

5.4 Limitation of research

The study was a number of limitations that shorten the research capacity. Some of the problem are involuntariness of the organization to provide needed source of secondary data, lack of experience to the work of the research, some of the respondent won't willing and fill out the

question and somewhere not returned the questionnaires they take to fill which made data collection and data analysis difficult task.

5.5. Area of future study

On this study exclude some digital platforms, therefore the future or the further study should be recommended to include digital banking like that Apollo, gize pay, and other that affect financial performance of bank of Abyssinia return on asset. Bank of Abyssinia that study about digitalization contributed to performance of finance that ROA.

On the other way, these studies not include digitalization increase service quality, customer satisfaction and hassle of going to branch. Beside on, digitalization on the switching cost of banks studied. Finally, the researcher study on digital banking product that affects financial performance.

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APPENDIX
ADDIS ABABA UNIVERSITY
COLLEGE OF BUSINESS AND ECONOMICS
DEPARTMENT OF MBA

Introduction

Dear respondent:- My name is Demeke Engida I am conducting research for my Master of business administration at Addis Ababa University. The title of my research project is “The effect of digitalization on financial performance in case of bank of Abyssinia”. In order to collect representative data I would like to interview you. So, you are kindly requested to give accurate and relevant information which is the most valuable input for the success of my study. Please be aware that there is no any political, economic, social or psychological harm on you due to responding these questions. Therefore the researcher hopes that you will answer all questions confidently and frankly. Your consideration will be greatly appreciated.

Yours sincerely

Demeke .E

B.N:- Don't write your name. Make for alternative questions

	understandable					
5	Most of the time there is internet/ network interruption while using banking service					
6	Digital banking requires many steps and more complex.					
7	Using digital banking to do my banking business fits into my work style.					
8	you have received enough information about the benefits of digital banking					

Section C. Effect of digitalization on return on assets of the bank.

This section has statements regarding the effect of digitalization on return on assets of the bank.

Kindly respond with the response that matches your opinion

NO.	Statement	Strong disagree	Disagree	Neutral	Agree	Strong agree
1	ATMs influence reduction of operational costs and hence better return on assets for the bank					
2	Incomes from ATMs have had positive impact on bank income margins					
3	Incomes from POS terminals have had positive impact on bank income margins					
4	Mobile banking influence reduction of operational costs and hence better return on assets for the bank					
5	incomes from mobile banking have had positive impact on bank income margins					

6	Internet banking influence reduction of operational costs and hence better return on assets for the bank					
7	Incomes from internet banking have had positive impact on bank income margins					
8	ITMs influence reduction of operational costs and hence better return on assets for the bank					
9	Incomes from ITMs have had positive impact on bank income margins					
10	BOA implement ITMs early on can have a competitive advantage over more traditional competitors					

Section D. effect of digitalization risk or challenge on profit of bank

This section has statements regarding the effect of digitalization risk or challenge on profit of bank of Abyssinia. Kindly respond with the response that matches you opinion.

No.	Statement	Strong disagree	Disagree	Neutral	Agree	Disagree
1	Bank vulnerable to cyber attacks					
2	Create awareness to illiterate peoples negatively affect profitability of bank					
3	Problem of network affect digital transaction hence affect banks profitability					
4	Fright of losing money in the online transaction					
5	Accessing financial information using digital banking channels is secure					

Thank you for taking your time to respond to this research questionnaire