THE EFFECT OF INTERNET BANKING ON KENYA’S ECONOMIC DEVELOPMENT

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DECLARATION

To the best of my knowledge, this research project has not been filed for another degree at any other university or institution of learning.

Signed: ……………………………………. Date: …………………………………...

DEDICATION.

This proposal is dedicated to my mom, the woman who defined my education and took me to

preschool.

ACKNOWLEDGEMENT

My gratitude goes to God almighty for the strength, guidance and protection this far I have come.

I will also thank all my friends for their moral support.

ABSTRACT

The study's major goal was to determine the impact of internet banking on economic development and the condition of internet banking in Kenyan commercial banks. It looked at ICT investment, the number of clients utilizing internet banking, return on assets, and the use of automated teller machines between 2009 and 2013. Gross domestic product was used to gauge economic progress. Inferential statistics were employed to analyze the data in this study, which used a causal research design and a descriptive design. Questionnaires were used to acquire primary data from 15 banks. Documentary information from CBK and KNBS was used to collect secondary data.

A linear regression model was used to examine the data. According to the findings, all fifteen commercial banks have adopted internet banking, and clients may now access some services online due to increased efficiency. The findings revealed a link between economic development and the number of people who use internet banking, the number of ATMs, and the return on assets. However, there is a negative correlation between economic development and commercial bank investment in ICT.

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ABBREVIATIONS

ATM Automated Teller MachineCBK Central Bank of KenyaDTM Deposit Taking Microfinance Institutions ICT Information and Communication TechnologyID Identification DocumentIDT Innovation Diffusion Theory

IT Information TechnologyGDP Gross Domestic Product

KNBS Kenya National of Bureau StatisticsMFI Micro-Finance Institutions PC Personal Computer

PEOU Perceived Ease of UseSACCO Savings and credit Cooperative Societies

TAM Technology Acceptance ModelTRA Theory of Reasoned ActionTV Television

CHAPTER ONE

1. INTRODUCTION

1.1 Background of the Study.

Internet banking is quickly gaining popularity. According to Guerrero, e-banking is quickly becoming the preferred route for banking customers in Kenya, as banks offer everything from balance inquiries and loan applications to funds transfer and utility bill payments through mobile and internet banking (2011). Internet banking has exploded in popularity in the financial sector of the economy over the last two decades. Individuals are now electing to access their bank queries via the internet rather than queueing in brick and mortar banks.

Kenya is keeping up with the rest of the world in terms of technical innovation. The banking sector in Kenya has invested in technological progress, which has improved service quality. It is a time when all transactions are carried out according to one's preferences. This is what the banking industry refers to as a "untapped opportunity," such as cooperating with mobile service providers like Safaricom's M-shwari to deliver internet and mobile banking services. In this regard, online banking has benefited Kenya's economy by improving and simplifying the nature of doing business (Kihiu & Moffat, 2012). However, the impact will be minimal.

1.1.1 Internet Banking

Internet banking, as described by Njuguna et al. (2012), is the use of the internet as a delivery channel for financial services, which covers both classic and novel banking services such as electronic bill presentment and payment without visiting a bank. Similarly, Hassan et al. (2010) define internet banking as a type of banking in which funds are moved between financial institutions by electronic signals rather than cash, cheques, or other negotiable instruments.

Internet banking, according to Atay and Apak (2013), is a convenient and flexible means of banking with a variety of transaction-related benefits. Traditional bank services, such as deposit, withdrawal, and transfer, as well as foreign exchange and stock exchange trading, were labor-intensive activities prior to the internet banking era. According to Gathembe, Magutu, and Muro (2013), with internet banking, the fixed costs of IT investments have increased while the variable costs have decreased.

1.1.2 Economic Development

According to Kihiu and Moffat, social development is both a result of and a component of economic development (2012). According to Bousrih (2013), the basic drive in fueling capitalism motivation is industrial advancement and innovation, which develops new production processes and new types of industrial organization. Using optimization analysis, Bousrih (2013) proposed that long-term economic development is connected to an exogenous rate of technological progress. According to Bousrih (2013), Koopmans (1965) and Cass (1965) proposed that all economies should strive for the same level of income per capita, the same level of preferences, the same population growth rate, and access to the same technology.

Some economists claim that exogenous variables determine economic growth, while others argue that it is more dependent on internal causes. GDP will be used to assess Kenya's economic development. According to Amiri & Reif, Gross Domestic Product (GDP) is the monetary value of all finished goods and services produced inside a country's borders in a given time period (2013). Within a specific territory, it includes all private and public consumption, government outlays, investments, and exports minus imports. According to Auka (2012), Kenya's banking sector provides almost 40% of GDP at market prices. In a country where commercial banks dominate the financial sector, any failure in the sector has a significant impact on the country's economic growth because bankruptcy in the sector has a contagion effect that can lead to bank runs, crises, and overall financial crisis and economic tribulations (Ongore & Kusa, 2013).

GDP is a widely used and comprehensive indicator of economic development that encompasses the entire economy rather than just one industry or market. When it comes to the disaggregates, the mixed frequency technique has many parallels to straight GDP projections, while it is clear that the information provided by coincident and leading indicators helps forecast some components better than others (Stratford, 2013).

1.1.3 The Expected Relationship Between Internet Banking and Economic Development

According to Al-Samadi (2011), growth is fueled in part by two factors: more users and faster, more widespread access. From 1.9 billion users in 2010, the global user base is expected to grow to three billion in 2016. The internet's impact is being amplified by increasing availability, notably via smartphones and other mobile devices, as well as the popularity of social media. Many consumers, particularly in developing countries, are turning to social media first.

There is a favorable association between return on asset and expenditure on e-banking ICT, according to Aduda and Kingoo (2012). The installed number of ATMs, on the other hand, has a negative relationship with the return on assets. The correlation coefficient between the number of debit cards provided to consumers and the return on assets and spending was 0.715 and 0.631, according to Aduda and Kingoo (2012). As a result, the related variable has a substantial power of relationship with the return on assets.

Their findings showed that investments in e-banking have a positive link with bank performance at a 1% level, which is consistent with theory and reflects financial innovation in banking development. It demonstrates that ICT investment has had a significant impact on the structure and activities of the banking sector, enabling for more efficient and effective transaction processing. As a result, this idea theorizes that internet banking investments will have a positive impact on Kenya's economic development.

1.1.4 Kenyan Economic Development and Internet Banking

According to Kimoro (2010), the manner of payment has an impact on the success and growth of businesses in Kenya. In light of the Technology Acceptance Model, she investigated the extent to which mobile payment services influenced small business economic growth (TAM). Low cost, perceived accessibility, ease, satisfaction, security, and support elements all had a favorable association effect with the behavioural intention of using mobile banking, according to Kimoro (2010).

In addition, the behavioural intention to use is strongly linked to actual usage. However, there is a low correlation between perceived support and actual usage in that small business owners who use mobile payment systems expect more support from both the mobile service provider and the government, such as increased minimum daily transaction amounts and reduced service line congestion.

Waiyaki (2013) claims that when all the explanatory factors are zero, GDP inflows increase by 23.81 percent. It also indicates that when the explanatory variables are set to zero, the level of real GDP improves. The variables used have an increasing effect on the level and trend of GDP growth. A one percent increase in the broad money supply results in a 0.59 percent increase in real GDP. This supports the hypothesis that a 0.59 percent gain in real GDP results in an increase in liquidity when transformed into output, igniting market demand and thus acting as an incentive for real GDP growth in Kenya.

1.2 Statement of the problem

Electronic delivery channels have become a top focus for banks due to the fast growth of online services. Online banking is predicted to be the fastest growing area in terms of IT expenditures, with a 5.3 percent increase in spending (DB Research, 2011). As a delivery mechanism, online banking is becoming increasingly popular. The internet has cut transaction costs and made geography less important. In 2010, over 45 percent of all people in the world used online banking, according to DB Research (2011). The use of numerous electronic channels improves market transparency and allows consumers to compare service offerings more easily. Internet bank customers are more likely to use other online services."According to research, a successful shift to electronic payments might save one percent of GDP each year" (Atay & Apak, 2013).

According to Guerrero (2011), internet banking has the potential to save around 1% of GDP yearly. Recent research has found a link between GDP and Internet usage levels across geographies. For example, "a 10% rise in per capita GDP is connected with a 21.5 percent increase in the number of Internet users per capita," according to one study (Andres et al., 2010). Many of these studies have concentrated on the introduction and growth of ICT in developing nations, as well as its economic impact.

However, the conclusions about the link between ICT use and economic growth in poor countries are equivocal. The issue of causality's direction must be formally addressed. Did ICT-rich countries achieve high levels of wealth as a result of increased use of these technologies, or was ICT dissemination a result of increased economic growth (Economist Intelligence Unit, 2012).

Because no study that the researcher is aware of has linked internet banking to economic development with GDP as the measure of this development, no study has been done in Kenya. As a result, the researcher is attempting to fill a knowledge vacuum on the relationship between internet banking and economic development.

1.3 Research Objective

The goal of the study is to determine the impact of online banking on economic development as well as the current state of internet banking in Kenya.

1.4 Significance of the Study

Through the study, the banking industry would be able to determine their contribution to Kenya's economic growth. It increases the likelihood of success in deploying internet banking. It also aids the Board of Directors and top management in strategic planning and implementation. This study will aid banks by demonstrating that internet banking has a favorable impact on the economy. Banks with a national economy goal work to increase national savings, generate national capital, and mobilize trade and industrial investments. In addition, internet banking provides a convenient and effective way for bank customers to manage their personal money because it is available 24 hours a day, 365 days a year, without having to visit the bank and from any place.

It will also improve the economic benefits of internet banking, such as lower bank operating costs, automated processes, accelerated credit decisions, lowered minimum loan size to be profitable, lower margins in lower cost of entry, expanded financing reach and increased transparency, and expanded reach through self-service through lower transaction costs, making some corporate services economically feasible for small businesses.

Apart from the banking industry, the expansion of internet banking in Kenya has a favorable impact on other sectors. First, authentication solutions developed by banks are used by other service providers, such as government agencies, to provide Internet services, allowing customers to use their internet bank ID as an identification or signature tool for other services.Second, on the ICT supply side, the growth of Online banking has sparked a process of competency building in the ICT industry in areas like Internet application software and internet security solutions. Third, on the demand side, internet banking has begun to change the way people live and interact, and the PC and internet skills acquired, as well as the investments made and behaviors adopted, might be transferred to other private and public Internet services, thereby increasing their use.

CHAPTER TWO

2.1 INTRODUCTION

Three hypotheses and empirical research on the impact of internet banking on Kenya's economic development will be reviewed in this section. There are three theories that support this viewpoint. First, Innovation Diffusion Theory seeks to investigate the phenomenon of innovation diffusion Theory attempts to explore elements that impact a person's decision to accept a new technology (Rogers, 1995). Second, the Technology Acceptance Model illustrates how information technology acceptance is determined (Davis, 1989). Third, the Triandis Model includes a variety of variables that presume an attitude-intention behavior link (Chang & Cheung, 2001). Internet banking has emerged as a crucial competitive arena for financial services in the future. Banks have evolved to keep up with advances in information technology and communication. The use of computer and communication technologies to replace manual and paper activities with electronic operations; online banking is the most popular approach used by banks.

2.2 THEORETICAL FRAMEWORK

2.2.1 Theory of Innovation Diffusion

The innovation diffusion hypothesis seeks to investigate the elements that impact an individual's decision to adopt a new technology or an innovation (Rogers, 1995). According to this hypothesis, five primary assumptions tend to impact the adoption of a new technology or any innovation: compatibility, relative advantage, trial ability, and feasibility. Rogers' list of complexity and observability (1995). As a result, innovation adoption is a process of reducing uncertainty. Individuals and banks gathering and synthesizing information tend to lessen uncertainty about new technology.

First, relative advantage refers to how much an innovation is thought to be superior to the notion it replaces. It necessitates a cost-benefit analysis of using an innovation, which can be expressed monetarily or socially.

Second, compatibility refers to how well an invention fits in with current values, past experiences, and the demands of future customers.It is assessed in light of the adopter's sociocultural values and beliefs, as well as previously introduced ideas and client innovation demands. If technology is consistent with their current ways of completing financial transactions and does not go against their current beliefs, it has a better chance of being accepted in the context of Internet banking.

Finally, complexity is defined as the degree to which an innovation is judged to be difficult to comprehend and use. The level of physical or mental effort required to employ an innovation is measured by its complexity. Fourth, the belief in trial ability, which is defined as the extent to

which a new idea can be tested on a restricted scale. This belief enables the adopter to put an innovation to the test so that it has meaning for them. Fifth, there is observability, which is defined as how evident the results of an innovation are to others.

Except for observability, internet banking is examined on the four beliefs of innovation diffusion theory. Due to the nature of the targeted technology chosen, which was related to internet banking, Baraghani (2008) eliminated observability from his analysis. Individuals typically conduct Internet banking transactions in private, and such activities are not apparent or observable to others. These four beliefs have a good impact on an individual's attitude toward using Internet banking, and that attitude has a positive impact on the intention to utilize the technology.

2.2.2 Acceptance Model for Technology

The Technology Acceptance Model (TAM) was established by Davis (1989) as an adaption of the Theory of Reasoned Action (TRA) modelled in accepting information systems.

TAM aspires to be both theoretically and pragmatically justified in describing the factors of computer adoption and user behavior across a wide range of end-user computing technologies and user groups. TAM's major goal is to create a foundation for tracking the impact of external circumstances on internal beliefs, attitudes, and intentions. TAM was created in an attempt to attain these goals by identifying a small group of core variables revealed by past research on the cognitive and affective factors that influence internet acceptance.

According to Davis, TAM contends that perceived ease of use (PEOU) and perceived usefulness (PU) are the most important factors in technology acceptance behavior (1989). The degree to which a potential user believes that utilizing a certain system will improve his or her job performance is referred to as perceived usefulness. A user believes in the presence of a favorable use-performance connection for a system with a high perceived utility, such as internet banking. PEOU measures how confident a potential user is that utilizing a specific system will be painless. If all other factors are equal, consumers are more likely to adopt an application that is seen to be easier to use.

2.2.3 Triandis Model

According to Chang and Cheung (2001), the Triandis model includes a variety of variables that presume an attitude intention-behavior link. This approach takes into account things like facilitating conditions, social factors, and habit. The probability of executing an act is a function of facilitating conditions, intention to undertake the act, and habit, according to this theory. The intention to carry out a specific behavior is influenced by social variables, perceived consequences, and affect. The supporting conditions include the resources and assistance required to carry out the behavior, such as money, time, software, network connectivity, hardware, and expertise (Chang & Cheung, 2001). The Triandis model has been used in recent studies on technology acceptance, internet adoption, and Executive Information Systems.

2.2.4 Theoretical comparison

TAM, Triandis, and IDT are all comparable in certain ways. To begin, according to Baraghani (2008), perceived utility in TAM is analogous to relative advantage in IDT and, to a lesser extent, perceived consequences in the Triandis model. In this regard, the argument in TRA that perceptions about the outcomes of behavior are important to formulation of attitude toward the behavior is supported by perceived usefulness, perceived consequences, and relative advantage in many models. Second, Triandis and TAM imply an attitude-intention-behavior link, in which cognitive and normative or effective beliefs combine to generate an attitude, which influences behavioral intention and actual behavior usage (Baraghani, 2008).Third, one's sense of whether behavior is under his control and whether he has access to the resources and opportunities needed to assist behavior is referred to as perceived behavioural control. Fourth, TAM's perceived ease of use construct is similar to IDT's complexity construct.

2.3 Empirical Review

Banking has traditionally been a service industry focused on individual or institutional clients. The delivery of banking services has changed dramatically over the previous two decades. In today's browser-based competitive finance world, banks must enhance their client service perspective with web-enabled capabilities in order to retain existing clients and attract new ones (Maduku, 2013). Internet banking has emerged as a crucial competitive arena for financial services in the future. Banks have evolved to keep up with advances in information technology and communication. This transition, according to Ma, Zhao, and Li (2013), comprises leveraging computer and communication technologies to replace manual and paper procedures with electronic activities; internet banking is the most frequent approach used by banks.

Internet banking chances, according to Okiro and Ndungu (2013), lessen the barriers between large banks and smaller newcomers. Customers have additional options, reducing their reliance on a single financial institution to meet all of their banking needs. Finally, online banking saves time and provides more accurate and fast financial information. While internet banking allows clients to access their accounts from anywhere in the world with an internet connection, Amiri and Reif point out that different and contradictory national restrictions make it difficult for internet banks to reach every customer in every part of the globe (2013).

Internet banking attempts to get beyond these regulatory barriers in order to reach clients across borders. As a result, the primary challenges banks have faced in encouraging the use of new technology are client ignorance and unwillingness to switch systems. The acceptance of internet banking is heavily influenced by education. Because they are more familiar with a computer and the internet, more educated persons are more likely to use internet banking services. The percentage of people who use internet banking is directly proportional to their educational level. According to Iraki (2012), in outsourcing Vision 2030, education and economic level play a significant role in the use of internet banking services.

Commercial banks' distribution strategy has benefited greatly from early technological advancements. Banks deliver their products and services using a range of creative channels, including online banking, automated teller machines, mobile banking, phone banking, and television banking, among others (Okiro & Ndungu, 2013). According to Schumpeter (1991), the financial intermediary sector influences the route of economic advancement by influencing the allocation of savings rather than the rate of saves. Because they pick which enterprises get to spend society's savings, financial intermediaries play a critical role in economic development.

Banks, according to Driscoll (2004), may play a unique role in the propagation of economic fluctuations. The first role is the endogenous problem, which requires determining whether output-money correlations are due to output responding to money rather than money demand responding to predictions of future output. According to Driscoll, the positive link between output and lending is statistically larger for construction and investment loans, and the impact of a change in bank lending is the most severe on small businesses at the microeconomic level. According to the findings, state-specific money demand shocks have significant economic and statistical consequences on the amount of loans provided by banks in that state.

The telecommunications sector continues to grow rapidly, according to the Economist Intelligence Unit (2012), with Tele-banking and the internet leading the way. In 2011, the number of telebanking accounts increased by 42% to 18.9 million, while the expected number of internet users increased by 95% to 17.4 million. Following the advent of third generation mobile broadband services in a number of markets, mobile networks are primarily delivering internet service. For example, more than 10% of Kenya's GDP currently flows through the MPESA mobile banking service, which now has more users than the country's bank accounts.

Money can be sent in seconds from one section of Kenya to another. It is utilized by 25% of Kenya's population, or 9.5 million people, who yearly transfer the equivalent of 11% of the country's GDP (Iraki, 2012). Despite the apparent frictionless movement of money across the air, making a money transfer system operate needs a lot of backend labor. The fundamental idea behind Mpesa, for example, is that the over 100,000 small shopkeepers in Kenya who already sell mobile phone airtime in the form of scratch cards can also register to be mobile money agents, accepting and disbursing cash.

According to Kunur, the internet has enabled banks and non-traditional businesses like mobile phones to establish new revenue streams in emerging regions (2009). According to the World Bank's 2013 Global Financial Development Report, 2.5 billion adults lack access to a bank account. By 2020, the World Bank wants to ensure that every working-age adult has access to financial services. Mobile and internet services can help achieve this goal by replacing traditional financial networks and equipment. Smart phones are now being utilized as mobile wallets in sophisticated countries, replacing services traditionally offered by major retail banks.

Low-income people benefit the most from technological advancements like mobile payments and banking. Mobile-commerce / e-commerce makes financial services more affordable and accessible to the poor, women, and rural inhabitants, especially those who live in distant, sparsely inhabited areas without bank offices (Wang & Pho, 2009).

Mpesa is the de facto bank of Kenya. Safaricom, the mobile phone company, has built a network of 30,000 outlets where consumers may deposit and withdraw money from their Mpesa mobile wallet accounts (Iraki, 2012). It is almost 200 times the number of branches operated by Kenya's largest bank. Mobile money services are used by 65 percent of Kenya's 29 million mobile customers, or 19 million Kenyans.

Money and banking are heavily controlled, and the internet may be the last of the information-based industries to be disrupted. Non-banking entities, on the other hand, have gotten a jump on the mobile payments industry in both developing and established countries. In developed economies, banks will continue to provide essential services through their extensive brick-and-mortar networks, but they now face significant disruption due to the disintermediation of key services currently provided by mobile operators, technology companies, and specialist payment providers.

Every country needs a strong banking industry to generate economic growth and ensure financial stability throughout the financial system. The information and technological revolution prompted banks to invest more in technology in order to maximize returns and attract more consumers who will not accept anything less than excellent service. Banks are investing in internet banking as a new cost-effective delivery channel, driven by cost-cutting, market share expansion, and client retention goals (Atay & Apak, 2013). The performance of the internet banking sector is influenced by favorable economic conditions. As a result, the bank should take advantage of economic boom conditions as much as possible to offset the negative consequences that the bank may experience during the economic downturn.

2.4 Summary and conclusion of the chapter

As our access to information becomes increasingly common in every part of the globe, it will begin to drive our economy, increasing productivity and efficiencies while also increasing the value provided by each employee and citizen. The ICT revolution can be viewed as a massive and long-term positive supply shock, resulting in stronger and probably more steady economic growth without the need for additional inflation (Houben & Kakes, 2002). As a result, spending on R&D employment in the economy as a whole or in the financial services industry has a beneficial impact on mixed banks' return on assets or equity, and lowers their cost-income ratios.

Internet banking research and development is not a competitive advantage in Kenya. Information technology spending as a percentage of GDP does not contribute to improved banking performance; rather, it diminishes returns by increasing expenses. Outlays on communication technology, on the other hand, indicate that higher long-term interest rates reduce the return on assets of internet banks without raising their cost-to-income ratio.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

According to Burns and Grove (2003), the researcher uses a research technique as a guide when collecting, evaluating, and interpreting data. This chapter will lay out a roadmap for research design, population, sampling, data collection, and data analysis.

3.2 Research Plan

Burns and Grove (2003) define research design as "a plan for performing an investigation with utmost control over the factors that may interfere with the validity of the findings." As a result, it is a plan that specifies the data collection and analysis procedure. In this study, a causal research design was employed to determine the cause and effect linkages between the study variables of Internet banking and GDP. It involves a field experiment, which is a genuine situation in which the researcher manipulates one or more independent variables under tightly controlled conditions as the situation allows.

3.3 Population

The complete set of relevant units of study or data might be defined as a population. It is the collection of cases that meet a predetermined set of criteria.There are a finite number of sampling units in a finite population. Random clients or employees of a Kenyan bank or financial institution were utilized as the target audience.

3.4 Sampling

According to Kothari (2003), sampling is the process of selecting a sample, which is a group of people who will be utilized to collect data. In this investigation, stratified or proportionate random sampling was used. It entails segmenting the population into homogenous subgroups and then randomly sampling each subgroup. It is used to ensure that not only the entire population, but also relevant subgroups of the population, are represented. The strata were mutually exclusive in the sense that any element of the population (bank) could only be assigned to one of them. With the assumption that they use financial services, the researcher used 33 random respondents in Kenya.employed to determine the cause and effect linkages between the study variables of Internet banking and GDP. It involves a field experiment, which is a genuine situation in which the researcher manipulates one or more independent variables under tightly controlled conditions as the situation allows.

3.5 Data collection

The study gathered both primary and secondary data. Secondary data on GDP was obtained from the Kenyan Central Bank and the Kenya National Bureau of Statistics. This secondary data, which comprised of annual data covering the years 2007 to 2012, was used for regression analysis. Self-administered questionnaires with close-ended and scale type items were also used to acquire qualitative data. The 33 respondents were chosen completely on a judgmental and purposeful basis, with an emphasis on staff who work in Kenyan commercial banks' internet banking departments and have some expertise of internet banking and economic growth.Customers were also given questionnaires to discover which internet banking services they utilize.

3.6 Data Analysis

Data analysis is the process of calculating particular metrics and looking for patterns of relationship between data sets (Creswell, 2003). Data analysis, according to Kothari (2004), entails data conversion for decision-making and interpretation purposes through editing, coding, recoding, tabulation, and classifications. The analysis was carried out with the use of the Statistical Package for Social Sciences and the Regression Analysis Model (SPSS). Y= 0+1X1+2X2+3X3+4X4 + Ksh is the proposed regression model.Y is the GDP-based economic development impact as evaluated by return on assets (investment in internet banking). Customers were also given questionnaires to discover which internet banking services they utilize.It is the major focus of the dependent variable, which reflects a quantity that fluctuates from individual to individual throughout the population. As a residual term, it indicates the sum of all other forms of individual differences that were not explicitly recognized in the model. X1 represents the variable investment in internet banking as measured by the number of internet banking customers, X2 represents the size variable as represented by the banks' total assets, X3 represents the investment in ICT variable, and X4 represents the variable economic growth as measured by GDP annually.

3.7 Validity and Reliability of Data

A pre-test with open ended questions will be used to examine data for validity; for content validity, which is the extent to which an instrument provides adequate coverage of a topic, a pre-test with open ended questions will be used. The questionnaire will be pre-tested with a few respondents for face validity, which is the risk that a question will be misread or misinterpreted. For additional confirmation, direct interviews and brochure material will be used.