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Analysis of the factors influencing customer adoption of internet banking in Nairobi

Agnes Karimi Njeru
School of Management and Commerce (SMC)
Strathmore University

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Njeru, Agnes Karimi

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DECLARATION

I declare that this work has not been previously submitted and approved for the award of a degree by this or any other University. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made in the thesis itself.

Agnes Karimi Njeru

8th June, 2017

Approval

The thesis of Agnes Karimi Njeru was reviewed and approved by the following:

Dr. James Njuguna,
Senior Lecturer, School of Management and Commerce,
Strathmore University

Dr. David Wang'ombe,
Dean, School of Management and Commerce,
Strathmore University

Professor Ruth Kiraka,
Dean, School of Graduate Studies,
Strathmore University

ABSTRACT

The adoption of internet banking as a platform for offering banking services is on a steady rise globally. The purpose of this study was to examine the factors influencing customer adoption of internet banking in Kenya. The study utilized an Integrated Model Framework to investigate the factors that influence customer adoption of internet banking in Kenya. Variables were drawn from traditional models that offered separate and theoretically sound constructs, namely; Theory of Perceived Risk, Technological Acceptance Model, Theory of Planned Behavior, Theory of Reasoned Action, Diffusion of Innovation Theory and the ABC Model of Attitudes. The scope of the research was Kenyans who held an account with any of the commercial banks in Kenya between March and April 2017. Questionnaires were distributed to customers either inside banking halls or while entering or leaving the banking hall in sampled bank branches. A sample size of 384 customers was used. Data was analysed using SPSS software where various data analysis techniques including Descriptive statistics, Pearson's Correlation Coefficients and Multiple Regression Analysis were employed. Results revealed that 47.1% of the respondents had adopted internet banking (IB) as of April 2017. Similarly, only 14.5% of the respondents had used IB frequently enough to infer full adoption. The model used in this study explained 40.9% of the variance in Adoption of Internet Banking in Nairobi. Further, Perceived Risk Facets, Diffusion of Innovation Factors, Technological Acceptance Factors, Planned Behavior Factors and Attitude were found to be predictors of Adoption of Internet Banking by customers in Nairobi. Perceived Risk Facet was found to be a negative predictor of internet banking adoption while all the other factors were found to be positive predictors of internet banking. The research may give some guidance to banks, KBA, CBK, Government of Kenya and other policy makers. For instance, policy makers may want to come up with policies and systems that mitigate risk associated with IB use thereby increasing its adoption and use. This research attempted to fill the knowledge gap existing regarding factors influencing customer adoption of internet banking in Kenya. The study suggests further research in the area to explore more factors that can explain the customer adoption of IB in Kenya as the overall research model did not explain most of the variance in the adoption of IB, suggesting that other factors exist that could account for adoption of IB in Kenya.

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LIST OF ABBREVIATIONS AND ACRONYMS

ANOVA	Analysis of Variance
AIB	Adoption of internet Banking
CB	Central Bank of Kenya
EFA	Explanatory Factor Analysis
GoK	Government of Kenya
IB	Internet Banking
IDT	Innovation Diffusion Theory
IT	Information Technology
KBA	Kenya Bankers Association
KMO	Kaiser Meyer Olkin
PCA	Principal Component Analysis
SPSS	Statistical Package for Social Sciences
TAM	Technological Acceptance Model
TPB	Planned Behavior Theory
TPR	Perceived Risk Theory
TRA	Theory of Reasoned Action
VIF	Variance Inflation Factor

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DEDICATION

Special dedication to my twin sons Fadhili and Amani. To my mother Nicerate Muthoni for always believing in me.

CHAPTER 1

INTRODUCTION

1.1.Background of the Study

Research has adjudged Africa the fastest growing region in terms of internet usage (Mbrokoh, 2016). By June 2016, Africa had an internet penetration rate of 28.7% (Internet Live Stats, 2016). Some African countries including Kenya, Ghana, Nigeria and Senegal have demonstrated that developing their internet economies has had both social and economic gains (Mbrokoh, 2016). Banks, belonging to an information-intensive industry that is significantly influenced by information technology, have been particularly affected by the internet explosion, since they have been provided with an additional channel to both promote and deliver their services (Santouridis & Kyritsi, 2014).

Information technology adoption has been defined as receiving and using new technology willingly (Yoghoubi & Bahmani, 2011). IT adoption has also been defined as the breadth and depth of applying IT into different aspects of businesses (Chuang, Nakatani & Zhou 2009). For this study, adoption of internet banking is defined as perceptible readiness to employ internet banking technology for the purpose it has been designed for (Chuang, Nakatani & Zhou, 2009; Rodgers, 2003). Adoption of this technology by banking retail consumers has been on a steady rise since its emergence in early 1990s and the Kenyan economy has not been left behind (Njuguna, 2012).

The development of internet banking technology stems back in the 1980s. Later, the 1980s saw remarkable shift in banking service distribution channels which were geared more towards self-service platforms. Due to escalating costs, more arduous customers, need to remain profitable as well as remain competitive, banks had no otherwise but to innovate in new customer service methods like internet banking (IB) (Shih & Fang, 2004).

The earliest form of the then considered virtual banking emerged in 1981 where the first city in the US to put the innovation to use was NY City. This was by serving customers remotely by use of innovative services at four major banks namely, Manufacturers Hanover, Chase Manhattan, Citibank and Chemical Bank where home banking services were made available to customers (Shih & Fang, 2004).

1.1.1.Internet Banking (IB)

Information Technology (IT) is progressively important to banking as it is an industry that involves intensive information (Shih & Fang, 2004). For customers, IB would be seen to provide effective and convenient method for personal finance management as information provision in the IB platform is both current and universally accessible from anywhere and at any given time of the day or any day of the week (Teo , 2000). Corporate banking users whose cash management is more sophisticated, found IB useful in provision of sophisticated cash management services and provision of most current information, thus allowing them ability to make timely cash management decisions (Teo , 2000).

Waithaka and Nzeveka, (2015) defined IB as the structural coordination that allow users to access their bank account and banking products and services information through a bank's website within the convenience of their location and without any need to use telephone lines, faxes or send letters with their original signatures. For this study, IB is demarcated as the access and use of banking transactions via internet by logging into a bank's website.

1.1.2.Adoption of Internet Banking

Adoption of IB is defined as perceptible readiness to employ internet banking technology for the purpose it has been aimed to support (Chuang, Nakatani & Zhou 2009; Rodgers, 2003; Burgess & Paguio, 2016).

People have been hesitant to adopt IB even since its earliest emergency. When the innovation first emerged in 1981, people did not adopt it so the innovation failed until mid 1990s when the next wave of innovation emerged (Sarreal, 2016).

1.1.3.Internet Banking in Kenya

By June 2016, Kenya's internet penetration was 68.4% (Internet Live Stats, 2016). This indicates a high level of internet usage in the population, nevertheless, financial transactions made through the internet still remain minimal. Nonetheless, Kenya is just part of the global trend where potential IB users either shy away from its adoption or do not continue its usage after adoption (Njuguna, et al., 2012).

According to Stanbic Kenya (2016), Internet Banking is a web-based service that allows you to transact online. IB is user friendly, expedient, and allows you to carry out banking securely via the internet any time of the day and any day of the week.

According to Barclays Kenya (2016), Internet Banking service will revolutionize the way customers do their banking as now customers can manage their accounts and transact from

their home, office or even on the move - all they need is an internet connection. The Internet Banking service is simple, quick and convenient but best of all you never have to visit a branch.

One can now view account information, view statements, download and print statements, view proof of payment, download and print proof of payments, transfer funds between one's bank accounts and other bank accounts within one's bank or even accounts at other banks, view one's credit card statements, link one's accounts (both credit card and additional bank accounts), carry out foreign exchange transactions, pay bills, purchase airtime and load MPESA and other mobile banking platforms, query foreign exchange and interest rates, send and receive email to and from the banker, access bank account 24/7 from anywhere in the world (Barclays Kenya, 2016).

1.2.Problem Statement

Although banks have shown great interest in offering IB services, research has shown that customers remain reluctant to use of the innovation. Despite the benefits that internet banking offers to customers, a large proportion of them are still remarkably reluctant in adopting it to perform their daily banking transactions (Santouridis & Kyritsi, 2014)

The Kenya financial sector consumers have increasingly been shying away from internet banking (Otini, 2010). By June 2016, the world internet penetration rate was at 49.5%, Africa had an internet penetration rate of 28.7% while Kenya's penetration rate was at 68.4% (Internet Live Stats, 2016). Kenya's tech-savviness surpasses that of the continent and the world at large. Yet, according to a survey carried out by Jumia Kenya, only 26% of Kenyans use internet banking (Mutegi, 2015), while according to Wanderi, et al., (2012) only 24.82 % of commercial bank customers in Nairobi County use internet banking services. This is despite a very high rate of internet access recorded (Wanderi et al., 2012).

Furthermore, Lee (2009) found adoption of IB characteristically more difficult as it initiates enduring relationships between the user and the IB services. There is considerable risk for users as they envisage going into a business association with impersonal, distant IB services which may be viewed as Perceived Risk (Lee, 2009).

According to Rodgers (2003), it is difficult getting an innovation adopted even when it has obvious advantages. Furthermore, user adoption researches suggest that when prospective adopters are offered a novel software package, a number of factors impact their decision making about whether or when they intend to adopt it (Yoghoubi & Bahmani, 2011).

Most of the studies done in Kenya (Wanderi et al., 2012; Mutegi, 2015; Mukabi & Mudida, 2012) have focused on a single banking institution. Similarly, studies done outside the country (Mbrokoh, 2016; Yoghoubi & Bahmani, 2011; Liao et al., 2016) have combined constructs from any of the existing and well known Technology Adoption Models and included other constructs anticipated to improve their explanatory powers (Hernandez & Mazzon, 2007).

However, no study has combined Theory of Perceived Risk, Innovation Diffusion Theory (IDT), Technological Acceptance Model (TAM), Theory of Reasoned Action (TRA), Theory of Planned Behaviour (TPB) and the ABC model of Attitudes to explain the extent to which they explain internet banking adoption in Kenya. This study will therefore seek to understand the factors influencing internet banking adoption by customers in Kenya while using an Integrated Model Framework.

The Researcher anticipated that Nairobi County will be a representative of the country. As such, this study's forecast was seeking to understand factors influencing customer adoption of Internet Banking in Nairobi.

1.3.Research Objectives

1.3.1. Main Objective

The study seeks to analyse factors that influence adoption of Internet Banking among bank retail users in Nairobi.

1.3.2. Specific objectives

1. To examine the extent to which the diffusion of innovation factors influence IB adoption by commercial banks customers in Nairobi.
2. To establish the extent to which perceived risk influences IB adoption by commercial banks customers in Nairobi.
3. To determine the extent to which technological acceptance factors affect IB by commercial banks customers in Nairobi.
4. To examine the extent to which planned behaviour factors influence IB adoption by commercial banks customers in Nairobi.
5. To establish the extent to which attitude influences IB adoption by commercial banks customers in Nairobi.

1.4.Research Questions

1. To what extent do diffusion of innovation factors influence IB adoption by commercial banks customers in Nairobi?

2. To what extent do perceived risk facet influence IB adoption by commercial banks customers in Nairobi?
3. To what extent do technological acceptance factors influence IB adoption by commercial banks customers in Nairobi?
4. To what extent do planned behaviour factors influence IB adoption by commercial banks customers in Nairobi?
5. To what extent does attitude influence IB adoption by commercial banks customers in Nairobi?

1.5.Significance of the study

The current research is important to Kenyan banks as it analyses the reasons why many people are reluctant to adopt and use the internet banking technology. This will in turn be useful information in formulation of the banks' short term and long term marketing targets including technological innovation and decision making on what percentage of the bank's annual budget should be allocated for revamping the internet banking platform. Furthermore, banks will be informed on what their consumers' preferences are towards internet banking. Consumer behaviour and preferences are major considerations for firms' formulation of successful strategies.

Kenya Bankers Association (KBA) may benefit from this study in that based on the results of this research, KBA may formulate policies and regulations that support customer adoption of internet banking by for example requiring its members to actively and diligently market their internet banking websites to ensure that more Kenyans adopt the innovation.

1.6.Scope of the study

This study targeted commercial banking customers in Nairobi who held an account with any of the 49 commercial banks in Nairobi. The timeline was March and April 2017.

CHAPTER 2

LITERATURE REVIEW

2.1. Introduction

This chapter discussed theories used over the years to explain new technology adoption followed by a review of other studies on internet banking adoption. Conceptual Framework and the operationalization of variables has been discussed and finally a conclusion to the chapter.

2.2. Theoretical Framework for Adoption

Numerous vying theoretical frameworks have been utilized in investigation of the bases of adoption and use of novel information technology (Hernandez & Mazzon, 2007). The models utilized in this study were Theory of Perceived Risk, Innovation Diffusion Theory (IDT), Technological Acceptance Model (TAM), Theory of Reasoned Action (TRA), Theory of Planned Behaviour (TPB) and the ABC model of Attitudes.

2.2.1. Perceived Risk Theory

The perceived risk theory was initially presented by Bauer (1960) after he categorized consumer preferences as consisting of risk-taking or risk-reducing behaviour (Liao, Lin, & Liu, 2010). According to Li and Huang (2009), Perceived risk is the possibility of a loss and the subjective feelings of negative consequences contingent to the subjective vagueness of the outcomes. Lee (2009) defines perceived risk in IB as "the subjectively determined expectation of loss by an internet bank user in contemplating an online transaction".

Similarly, according to Liao et al. (2010), "perceived risk arises when an individual is engaged in situations where one is never totally certain and is concerned about the consequences of a poor or wrong decision". "A person's behaviour involves risk if the behaviour will produce consequences that he or she cannot anticipate with certainty and some of which are likely to be unpleasant" (Lee, 2009).

This model has been used since 1960s to describe consumer behaviour (Yaghoubi & Bahmani, 2011). Most studies maintain that consumers' perceived risk is a sort of a multi-dimensional concept. The dimensions of perceived risk that scholars have used include performance, social, privacy/security, financial, physical and time-loss (Yaghoubi & Bahmani, 2011). Since IB incurs no physical threat to humans the construct of physical risk does not apply and will therefore not be included in this research. The five types of risks are discussed below:

Lee, (2009) describes financial risk as possibility of losing money loss as a result of bank account exploitation or transaction fault. Voluminous customers are fearful of monetary loss as they transact over the internet since presently IB transactions do not have the guarantee offered in traditional setting via formal procedures and receipts (Kuisma et al., 2007).

Perceived performance risk denotes user's sensitivity to the possibility of the IB platform failing to work as envisioned or as promoted and therefore being incapable of proving the needed service (Yang, Liu, Li, & Yu, 2015)

According to Lee, (2009), perceived social risk denotes to the probability that using IB could lead to displeasure of one's significant circles as it is probable that one's societal eminence may be improved or disapproved conditional to how IB is regarded. It might be that societies have negative or positive perceptions of IB that in turn impact their opinions towards its adopters, or, on the other hand, not adopting IB may have favourable or unfavorable implications (Lee, 2009).

Perceived Security/Privacy Risk denotes the possible loss as a result of hacking or fraudulent deals confronting the security of an IB user (Lee, 2009).

Perceived Time Risk denotes the perceived inconveniences and probable loss of time as a result of delays and difficulties experienced while of navigating bank website and hyperlinks.

This theory is important in this study in that even though user perceptions of the risk of using IB have been researched by many scholars like Tan and Teo, (2000), Mudida and Mukabi, (2012), the perceived risk construct has been mostly shown as a single construct, this not reflecting the actual faces of perceived risk and enlightenment of why users reject this banking services (Yoghoubi & Bahmani, 2011).

The current research has shown perceived risk as a multidimensional facet of five constructs thereby providing a more exhaustive appreciation of the characteristics of such risks perceptions by banking customers in Nairobi. The variable informed by this theory is the Perceived Risk Facet which has the following constructs; Perceived Social Risk, Perceived Time Risk, Perceived Security Risk, Perceived Financial Risk and Perceived Performance Risk.

2.2.2. Innovation Diffusion Theory (IDT)

As per Rogers (1983), an invention denotes a practice, an object, or an idea supposedly novel to a person or other adoption agent and diffusion denotes the procedure through which an

invention is transferred via definite methods over time amongst the participants in a societal system (Lee, et al., 2013). According to Rogers (1983) there are five established constructs that have reliably showed to be contributing factors of diffusion rate of a technology. These are compatibility, trialability, observability, complexity and relative advantage.

First, relative advantage has been denoted as the degree to which a technology is deliberated as superior to all other alternatives (Hernandez & Mazzon, 2007).

Second, compatibility denotes the extent to which a technology is seen as being consistent with the prospective adopter's current needs, prior experiences and values (Lee, et al., 2013).

Third, complexity denoted the adopter's perceived degree of sophistication in appreciation of an innovation and its being user friendly (Lee, et al., 2013).

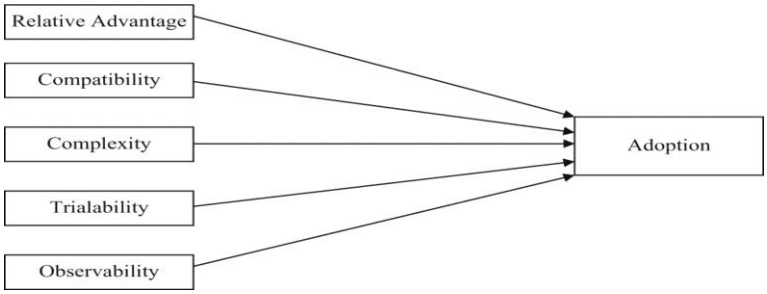
Fourth is trialability which denotes the extent to which a technology can be verified on restricted basis (Lee, et al., 2013). Or the degree to which the technology may be felt before its real use (Hernandez & Mazzon, 2007).

Finally, observability denotes the degree to which the advantages or qualities of a technology can be witnessed, described or pictured to probable adopters (Hernandez & Mazzon, 2007).

These features describe end-user acceptance of a technology and the process of making the decision (Lee, et al., 2013). The correlation between these constructs and the intent to accept a technology is positive, except for complexity whose correlates negatively with intent for adoption (Hernandez & Mazzon, 2007).

Internet Banking being an innovation in the banking services and IT industry, it is important to incorporate Rodgers, (2003) theory of innovation diffusion to find out to what extent do the factors presented in the model determine user acceptance of IB Nairobi. The variable informed by this theory is Diffusion of Innovation Factors which has the following constructs; relative advantage, complexity, compatibility, trialability and observability.

Figure 2-1: Diffusion of Innovations Theory



Source: Rogers (1983)

2.2.3. Technological Acceptance Model (TAM)

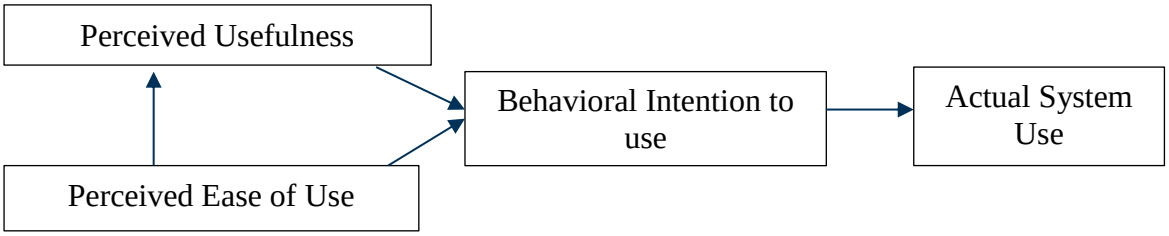
Davis (1989) proposed TAM to predict the adoption and use of new innovations in organizations (Hernandez & Mazzon, 2007). The information systems model shows how adopters end up accepting an innovation and how eventually thy use the innovation (Gordon, 2013).

In the theory, which derives from Theory of Reasoned Action, behavioural intention is determined by the attitude towards perceived usefulness of the system and its ease of use. Attitude towards acceptance of the system can be determined by both perceived ease of use and its perceived usefulness (Hernandez & Mazzon, 2007). Perceived usefulness denotes the degree by which users consider accepting certain technology is likely to improve their job accomplishment while perceived ease of use denotes degree to which adopters believe adopting a certain system will necessitate little or no effort (Davis, 1989).

A major drawback to this model would be that it only employs two constructs namely perceived ease of use and perceived usefulness to predict behavioural intent to adopt. However, behavioural intention has also been found to be explained by other factors like subjective norms (Yoghoubi & Bahmani, 2011). Moreover, though users have a strongly intend to implement a behaviour, they may not be in a position to perform it without required skills and resources (Behavioural Control) (Aljzen, 1991). As per Aljezen (1991), Theory of Planned Behaviour resolves this issue by providing more variables as discussed below.

This theory is important in this study in that the constructs presented by this model have been found to influence actual use or adoption of new systems. Empirically, this model has been used in bits where researchers used either of the two constructs in their models (Taylor & Todd, 1995). Furthermore, other models like the Planned Behaviour Theory originated from this theory. The constructs presented in this model as well as those presented by its successor TPB, will be utilized in the conceptual framework to predict their impact on adoption of IB in Nairobi.

Figure 2- 2: Technology Acceptance Model (TAM



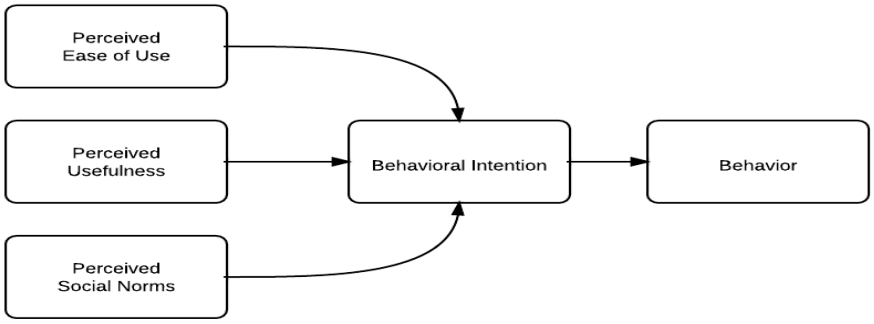
Source: Davis et al (1989)

2.2.4. Theory of planned behaviour (TPB)

TPB denotes an individual's opinion toward absence or presence of necessary opportunities or resources requisite to performance of the said behavior. The planned behavior theory (TPB) explains that intention is the major factor influencing social behavior and it is influenced by perceived behavioral control, subjective norm and attitude toward behavior (Ajzen et al., 1985).

The societal perception on the external and internal constraints to their behavior or precisely how hard or easy society believe it is to execute certain behaviors (Liao et al., 2010). Attitude to behavior denotes extent to which enactment of the action is negatively or positively regarded and is influenced by all the available behavioral opinions connecting the behavior to different outcomes (Ajzen et al., 1985).

Figure 2- 3: Theory of planned behaviour (TPB)



Source: Aljzen et al., (1985)

Subjective norm denotes the supposed social compel to engross not to engross in a certain conduct. It is presumed to be explained by the aggregate set of available normative beliefs regarding the anticipations of significant referents (Ajzen, 1985). Perceived behavioural control denotes commons opinions of their capacity to engage in a certain conduct. It is presumed that perceived behavioural control is explained by the aggregate array of available control beliefs - beliefs regarding the existence of elements that may expedite or hinder enactment of the behavior (Ajzen et al., 1985).

Intention suggests a person's willingness to perform a certain behavior and is the direct precursor of behavior. Intention is established on subjective norm, perceived behavioral control and attitude about the behavior with each determinant measured for its significance relative to target population and the behavior (Ajzen, 1985).

Behavior denotes the apparent and noticeable reaction to a situation in respect to a certain object. Distinct behavioral observations may be combined across situations and contexts to

give a broader illustrative measure of behavior. In TPB, behavior is explained by perceptions of behavioral control and compatible intention. Theoretically, perceived behavioral control is anticipated to control the influence of intent on behavior, so that good intention yields the behavior just when perceived behavioral control is strong (Ajzen et al., 1985).

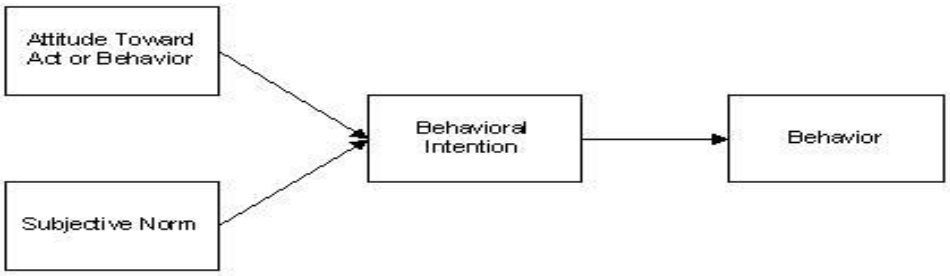
This theory is important in this study as the constructs presented in this model which are like those presented by its predecessor TAM, will be utilized in the conceptual framework to determine their influence on IB adoption in Nairobi. These are perceived behavioral control and subjective norm.

2.2.5. Theory of Reasoned Action (TRA)

The model of TRA is perhaps one of the supreme models utilized in prediction of human behavior (Hernandez & Mazzon, 2007). The theory, which has its roots in social psychology, suggests three broad concepts, namely; attitude, subjective norm and behavioral intention (Liao et al., 2010). In other words, the model purports that behavioral intention would be predicted by subjective norm and attitude towards behavior (Hernandez & Mazzon, 2007).

This theory is important in this study as most studies seeking to explain societal behavior have employed it (Liao et al., 2010; Hernandez & Mazzon, 2007). Internet banking adoption is similarly a social psychology behavior and the constructs presented in the model have also been studied in other models such as the ABC Model and TPB.

Figure 2- 4: Theory of Reasoned Action (TRA)



Source: Fishbein and Ajzen (1975)

2.2.6. The ABC model of Attitudes

According to McLeod, 2014, attitude may be described as a structure of three elements namely; Affective components which comprises a person's emotions or feelings concerning the attitude target, Behavioral (conative) component which defines the way the attitude a person has

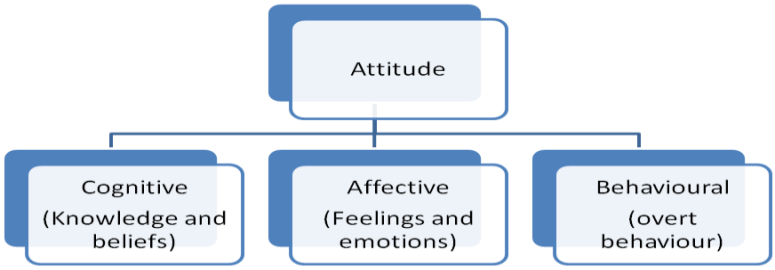
influences how the person acts or behaves and Cognitive element which encompasses an individual's belief or understanding concerning an attitude target.

Studies have shown that people seek consistency between their attitudes and their behaviour and therefore seek to reconcile any divergent attitudes and align them to behavior to maintain rationality and consistency. Further, studies have concluded that where inconsistency between attitude and behavior exists, forces are initiated to return the individual to equilibrium state by altering either attitudes or behavior (Citeman, 2006). Likewise, the principle of consistency considers the notion that people are rational and try to act rationally at all times and that a person's behavior would be coherent with their attitude(s) (McLeod, 2014).

This model is important in this research in that deducing from existing studies, positive attitude towards a technology may lead to its adoption (Bauer, 1960; Davis, 1989; Ajzen, 1985; Fishbein & Ajzen, 1975; McLeod, 2014). People's attitude towards technology determines whether they adopt the technology in question (Ajzen et al., 1985; Crites et al., 1994; Crowell, 2003; Hernandez & Mazzon, 2007; Yoghoubi & Bahmani, 2011; Hogg & Vaughan, 2011).

The variable informed by this theory is Attitude which has the following contsructs: Affective Attitude, Behavioral Attitude and Cognitive Attitude.

Figure 2- 5: ABC model of Attitudes



Source: McLeod, (2014)

2.3. Empirical Literature Review

Most researches in this area have concluded that the factors explaining adoption of IB in Nairobi are perceived usefulness, perceived relative advantage, perceived ease of use, and self-efficiency. These researches however do not say how other factors mentioned in the technology adoption frameworks influence internet banking.

2.3.1. Perceived Risk Factors and Adoption of Internet Banking

A study carried out in Iran on Behavior Methodology to Policy Making of the IB Industry while focusing on Factors Influencing Consumers Acceptance of IB Services, combined the TPB and TPR to understand consumers' acceptance of IB Iran. This study utilized a unsystematically selected sample of Iranian national bank customers with Three Hundred Forty-Nine (349) respondents and used the structural Equation Modelling (SEM) to test the causalities in the proposed model and the strength of the hypothesized relationships.

The inference made in this study is that time risk, social risk and performance risk would be a negative predictor of attitude towards use of internet banking services while Security risk and financial risk would be a negative predictor of both attitude towards and intention to use internet banking services (Yoghoubi & Bahmani, 2011). This research revealed that monitoring risk associated with IB is far more significant than providing benefits.

Research has shown that numerous customers fear to suffer monetary loss as they transact online because presently IB transactions lack the guarantee offered in traditional set up through strict procedures and receipts (Kuisma et al., 2007). Just like Yoghoubi and Bahmani, (2011), Kuisma et al., (2007) infers that perceived financial risk is a negative determinant of internet banking adoption.

According to Yang et al., (2015), perceived performance risk negatively influences customer adoption of internet banking. This inference is similar to that of Kuisma et al., (2007) and Yoghoubi and Bahmani, (2011). This is because of the perceived possibility that an internet banking system will malfunction or not work as intended or as advertised and thus be unable to provide the desired service.

Perceived social risk may be either a positive predictor or a negative predictor of internet banking adoption by customers. As per Lee, (2009), individuals may have favourable or unfavourable opinions of IB that in turn influence their perception of IB adopters (Lee, 2009). The extent to which it is perceived that use of internet banking will cause disagreements with one's social circles may either be a positive or a negative predictor of customer IB adoption banking depending on whether its viewed favourably or unfavourably by significant others.

Most researches have shown that perceptions of insecurity or privacy risk negatively predict IB adoption (Lee, 2009; Yang et al., 2015; Kuisma et al., 2007)

Intrusion by phishers and hackers leads to monetary loss and violates the user's privacy which is a major setback to many internet users (Lee, 2009). Although most researches have shown that perceived security/privacy risk is a negative predictor of customer adoption of internet banking, Liao et al., (2016), suggested that there is no relationship between privacy concerns and behavioral intention of customers to adopt Internet Banking. This study seeks to identify whether perceived security risk predicts customer adoption of internet banking in Kenya.

Research has also shown that perceived time risk is a negative predictor of customer adoption of internet banking (Lee, 2009; Mudida & Mukabi, 2012; Yang, Liu, Li, & Yu, 2015). Disorganized and confusing websites and pages that load too slowly is a major source of concern to internet users as they feel that there is possibility of losing time while making a wrong purchasing decision through time wastage in learning how to use a product or a service, researching and making the purchase, and finally replacing it if it does not perform as desired (Lee, 2009).

Njuguna, et al., (2012) in his research tested perceived risk as one of his variables in his research and argues that although perceived risk is found to be insignificant in his research, there is need for more research to probe more on effects of perceived risk on intention to adopt internet banking based on consideration of previous research outcomes.

Thus, the current research will analyse the relationship between perceived risk as an independent variable and actual adoption of internet banking as the dependent variable using Theory of Perceived Risk in the research model while examining the five perceived risk facets to provide an elaborate understanding of the elements with regard to IB adoption in Nairobi.

2.3.2. Diffusion of Innovation Factors and Adoption of Internet Banking

Research has shown that diffusion of innovation factors does affect customer adoption of internet banking. To start with, Njuguna, et al., (2012) used the TAM model and the Perceived Characteristics of Innovation (PCI) model in their research whose purpose was to determine the factors that explain acceptance of IB among the people who hold accounts with commercial banks in Nairobi County, Kenya (Njuguna, et al., 2012).

A regression Analysis was applied on a sample of 300 individuals with results showing that only 24.82% of the respondents used IB. Further, the results revealed that relative advantage, compatibility, perceived ease of use, result demonstrability, self-efficacy, and perceived usefulness have a significant association with intention to use internet banking, while trialability, visibility, and risk are not significant (Njuguna, et al., 2012).

However, only two theories were used to arrive at this deduction namely, TAM and PCI. The current research will therefore fill the research gap by combining different research models on a sample that is a good representative of the Commercial Bank customers' population in Nairobi.

2.3.3. Technology Acceptance Factors and Adoption of Internet Banking

Research has shown that perceived usefulness and perceived ease of use are positive predictors of technology adoption (Hernandez & Mazzon, 2007; Taylor & Todd, 1995; Mukabi & Mudida, 2012; Njuguna, et al., 2012). Hernandez and Mazzon, (2007) argue that the greater the perceived usefulness and the greater the perceived ease of use of a particular innovation, healthier are individual's response towards the invention and the greater their intent to adopt it (Hernandez & Mazzon, 2007). Taylor and Todd, (1995) infers that both of this constructs positively explains usage behavior in technology adoption.

Further, Mukabi and Mudida, (2012) employed the extended TAM framework to explore the influences that determine retail customers' acceptance of IB in Kenya. The exploratory research which was in context of Commercial Bank of Africa, found that the results were consistent with TAM studies that have found Perceived usefulness to be the strongest predictor of an individual's adoption of technology.

Further, four out of five factors examined were found to explain 76.7% of the dependent variable. These factors were, customer's perceived web security, customer's perceived usefulness, customer's access to the internet and customer's perceived ease of use (Mukabi & Mudida, 2012). It was established that Customer awareness was insignificant in determining its IB adoption (Mukabi & Mudida, 2012).

According to the regression Analysis utilized by Mukabi and Mudida (2012), these factors were found to be statistically significant in that they explained the dependent variable (adoption of Internet banking in Kenya) 76.7% and only 23.3% of the dependent variable was explained by other factors not included in the study.

These results are similar to those of Njuguna, et al., (2012) in that both researchers found that perceived ease of use and perceived usefulness are significant factors that influence adoption of internet banking in Kenya.

Contrary to Njuguna, et al., Mukabi and Mudida found that perceived web security was a significant factor in customer adoption of internet banking. Mukabi and Mudida, (2012) study has a major limitation in that the researcher's conclusions have been drawn from a population

of a single bank in Kenya, while as per Central Bank, Kenya has forty-two (42) commercial banks and hosts representative offices of seven (7) foreign banks.

2.3.4. Planned Behavior Factors and Adoption of Internet Banking

Empirically, Subjective Norms and Perceived Behavioral Control are positive determinants of innovation adoption (Yoghoubi and Bahmani, 2011; Taylor & Todd, 1995; Ajzen, 1985).

In their research on elements affecting adoption of IB in Iran, Yoghoubi and Bahmani, (2011) tested among other factors, perceived behavioral control which they defined as facilitating conditions or the extent to which an individual considers the required resources are available to support IB, and subjective norms which was denoted as the extent to which an individual believes that significant others considers that he/she should use IB.

This factors were found to both have a substantial effect on IB adoption in Iran (Yoghoubi & Bahmani, 2011). It would be important to test this factors and infer on whether they influence adoption of internet banking in Nairobi.

According to Taylor and Todd, (1995), perceived behavioral control and social influence (Subjective Norm) are salient beliefs that may affect IT adoption. He further explains that these factors are direct determinants of behavioral intension which in turn impacts on technology usage behavior.

2.3.5. Attitude and Adoption of Internet Banking

An attitude is a comparative lasting establishment of feelings, beliefs and behavioural inclinations towards socially important events, groups, symbols or objects. An overall sentiment or assessment – negative or positive - concerning some object, person or issue (Hogg & Vaughan, 2011).

Similarly, attitude towards behavior is the extent to which enactment of the behavior is negatively or positively valued and is influenced by the total set of available behavioral opinions connecting the behavior to various outcomes and other qualities (Ajzen, 1975). An attitude denotes a hypothetical construct which cannot be seen, touched or physically examine (Hogg and Vaughan, 2011).

From these definitions, it could be said that attitudes are generalizable comprising some amount of perception, are fairly enduring and are restricted to socially significant events or objects (Hogg & Vaughan, 2011). Consequently, attitudes are made up of a cluster of behavioral intentions, feelings, thoughts, dislikes, likes, and ideas.

Most scholars have looked at attitude as consisting of three components namely behavioral, affective and cognitive (McLeod, 2014; Krech et al., 1962; Rosenberg & Hovland, 1960; Beckler, 1984). These components are examined below.

First, the Affective component refers to the emotional reaction one has towards an attitude object or simply put, the extent of negative or positive affect related to some psychological object (Crowell, 2003; Hogg & Vaughan, 2011). This component refers to the feelings and emotions on has about the attitude object, in our case, feelings and emotions towards adoption of internet banking.

This study will therefore utilize affective judgemental scale to measure the level of people's emotions and feelings towards adoption of internet banking. These affective judgemental scales include positive emotions such as joy, desire, fascination, satisfaction and negative emotions and feelings such as fear, boredom, sadness and disgust (Desmet, 2003; Russell, 1980).

Second, the Cognitive component refers to the beliefs, knowledge and thoughts one has about an attitude object. It is an implied tendency that has a generalising and steady effect on how we make decision, what is good or bad, desirable or undesirable, and so on (Crowell, 2003). An attitude denotes a remote occurrence that is not observable outwardly and whose presence can only be inferred. It is made up of a mental inclination to action and monitors evaluative responses (Hogg & Vaughan, 2011).

This study therefore utilize cognitive judgemental scale with a Likert scale to measure respondents' cognitive attributes towards IB adoption. The positive cognitive attributes included usefulness, functional, beneficial and nice while the negative cognitive attributes will include useless, harmful, disadvantageous and unusable (Crites et al., 1994).

Finally, the Behavioral component refers to the way people behave when exposed to an attitude object or behavioural tendencies towards socially significant objects (Crowell, 2003; Hogg & Vaughan, 2011). This study will utilize the overall opinion towards internet banking to measure behavioral attitude towards adoption of internet banking (Crowell, 2003).

Deducing from existing literature about technology acceptance, Attitude is a major component in technology adoption. Furthermore, the TPR, TAM, TPB, TRA theories and the ABC Model of Attitudes, discussed above, support that positive attitude towards a technology may lead to its adoption (Bauer, 1960; Davis, 1989; Ajzen, 1985; Fishbein & Ajzen, 1975; McLeod, 2014).

In addition, many studies have revealed that people's attitude towards technology determines whether they accept the said technology (Ajzen et al., 1985; Crites et al., 1994; Crowell, 2003;

Hernandez & Mazzon, 2007; Yoghoubi & Bahmani, 2011; Hogg & Vaughan, 2011). As such, this study will test Attitude as a variable as it has been found to dominate technology adoption theories and social behavior research (Hogg & Vaughan, 2011).

2.3.6. Adoption of Internet Banking

IT adoption denotes the action of acceptance of technology usage readily (Yoghoubi & Bahmani, 2011). IT adoption has also been defined as the breadth and depth of applying IT into different aspects of businesses (Chuang, Nakatani & Zhou 2009).

According to Rodgers, (2003), it is difficult getting an innovation adopted even when it has obvious advantages. Furthermore, the conclusions from user acceptance inquiries propose that when consumers are offered with a novel innovation, a number of elements effect their judgment about how and when they will use it (Yoghoubi & Bahmani, 2011). Rodgers, (2003) presents five stages of technology acceptance process namely; Persuasion, Knowledge, Implementation, Decision and Confirmation (Burgess & Paguio, 2016).

The first is the Knowledge Stage which happens hence an individual is informed of an existing technology and begins to understand its functionality. The stage may have been influenced by chance or may be as a result of a conscious effort to seek out an innovation after an individual has identified a need for it (Seligman, 2006; Burgess & Paguio, 2016).

The second is Persuasion Stage where unfavourable or favourable attitude towards the invention is made. The person seeks invention assessment evidence to reduce insecurity about the consequences expected from the invention. The attitude formation is dependent upon the opinions of significant others and their experiences with the innovation. Moreover, as attitude creation starts before persuasion, information seeking at this stage is mainly for affirming, justifying, or modifying the attitude (Seligman, 2006).

The third is the Decision Stage where an individual engages in activities that lead to either choosing to adopt the innovation or to reject it. Adoption may be partial or full, probationary or complete and rejection may be active or passive while trial adoption can be done vicariously by observing or asking about the peers' adoption experience it (Burgess & Paguio, 2016; Seligman, 2006).

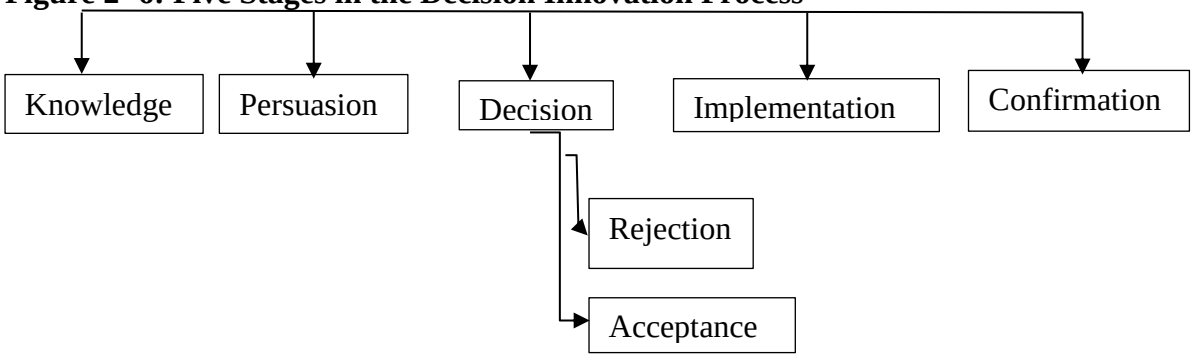
The fourth is the Implementation stage where adopter puts the innovation into use and seeks technical information for implementation. It is likely that at this stage some uncertainty in relation to the adoption of the innovation still exist, necessitating adopter to seek further

information regarding how to obtain and use the innovation (Rodger, 2003; Seligman, 2006; Burgess & Paguio, 2016).

Final stage is the Confirmation Stage where adopter seeks reinforcement of his adoption or rejection decision. Here, a decision is made on whether or not to use or discontinue use of the innovation (Seligman, 2006).

This stages are summed up in Rodgers, (2003) diagram shown in Figure 2-6 below.

Figure 2- 6: Five Stages in the Decision Innovation Process



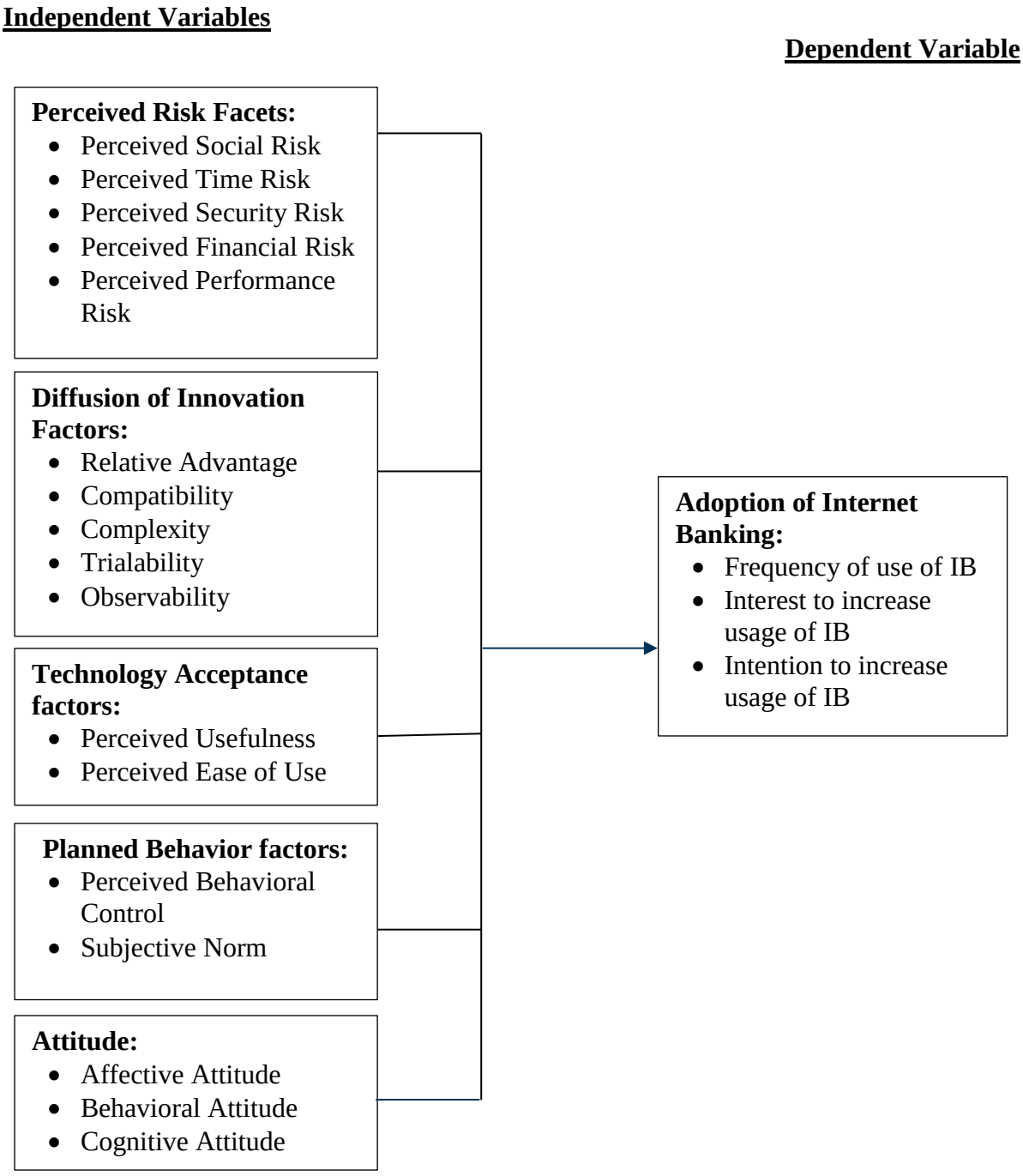
Source: Rodgers (2003)

For this study, adoption of internet banking is defined as demonstrable willingness to employ internet banking technology for the tasks it has been designed to support (Chuang, Nakatani & Zhou 2009; Rodgers, 2003).

2.4. Conceptual Framework

Very largely, previous research on IB Adoption have presented constructs from one or more of the available Technology Adoption Models and added other constructs anticipated to improve their explanatory abilities (Hernandez & Mazzon, 2007). However, Mazzon (2007) observes that adding of new constructs has added very little to increasing the explanatory capability of these models, perhaps due to the effect of multi-collinearity between the new constructs and those previously present in the original models.

Figure 2- 7: Conceptual Framework



Source: Author (2017)

2.5. Conclusion

On grounds of the literature review, this study proposes an integration of six theories that have been utilized in research on innovation adoption to examine the factors that influence customer adoption of internet banking in Kenya. These are the Theory of Perceived Risk, Diffusion of

Innovation Theory, Technological Acceptance Model, Theory of planned Behaviour, Theory of Reasoned Action and the ABC model of Attitudes.

2.6. Operationalization of Variables

The proposed model encompasses five sets of independent variables and one dependent variable. From the Theory of Perceived Risk, five variables were identified namely Perceived Privacy Risk, Perceived Time Risk, Perceived Social Risk, Perceived Financial Risk and Perceived Performance Risk (Bauer, 1960); (Yaghoubi & Bahmani, 2011). From Innovation Diffusion Theory; Observability, Trialability, Compatibility, Relative Advantage and Complexity. TAM gives two variables that influence Attitude towards system use namely Perceived Usefulness and its Perceived Ease of Use (Hernandez & Mazzon, 2007) while from the Aljzen, (1991)'s Theory of Planned Behavior (TPB) came Subjective Norms, Perceived Behavioral Control and Attitude. Further, from the ABC Model of Attitudes the variables identified are Affective Attitude, Behavioral Attitude and Cognitive Attitude.

Figure 2- 8 : Operationalization of Variables

Variable	Construct	Operational Definition	Measurement Indicator	Source
Perceived Risk Factors (Independent Variable)	Perceived Social Risk	The likelihood that adopting IB may result in displeasure of one's significant circles.	Five point Likert scale	(Lee, 2009)
	Perceived Time Risk	The perceived waste of time and inconveniences experienced as a result of delays and difficulties in navigating the website	Five point Likert scale	(Yang, Liu, Li & Yu, 2015)
	Perceived Security Risk	The perceived possible loss as a result of fraudulent or hacking deals that may compromise security of an IB user	Five point Likert scale	(Lee, 2009)
	Perceived Financial Risk	The perceived possibility for monetary loss as a result of a transaction error or account misuse	Five point Likert scale	(Yang, Liu, Li & Yu, 2015)

Variable	Construct	Operational Definition	Measurement Indicator	Source
	Perceived Performance Risk	The perceived likelihood of the internet banking system failing or not functioning as intended or as marketed	Five point Likert scale	(Yang, Liu, Li & Yu, 2015)
Diffusion of Innovation Factors (Independent Variable)	Relative Advantage	The degree to which a technology is considered superior to other available options	Five point Likert scale	(Hernandez & Mazzon, 2007)
	Compatibility	The extent to which a technology is seen to be consistent with potential user's existing prior experiences, values and needs	Five point Likert scale	(Lee, et al., 2013)
	Complexity	The potential adopter's perceived degree of difficulty in understanding the technology	Five point Likert scale	(Lee, et al., 2013)
	Trialability	The extent a technology may be tested on limited basis or can be experienced before actual adoption	Five point Likert scale	(Lee, et al., 2013; Hernandez & Mazzon, 2007)
	Observability	The degree to which the attributes or benefits of a technology may be seen, pictured, observed or described to potential adopters	Five point Likert scale	(Hernandez & Mazzon, 2007)
Technology Acceptance factors (Independent Variable)	Perceived Usefulness	The extent to which potential adopters believe that adopting the new technology would enhance their performance	Five point Likert scale	(Davis, 1989; Hernandez & Mazzon, 2007).

Variable	Construct	Operational Definition	Measurement Indicator	Source
	Perceived Ease of Use	The extent to which potential adopters believe that using a technology would require no effort	Five point Likert scale	(Davis, 1989; Hernandez & Mazzon, 2007)
Planned Behavior factors (Independent Variable)	Perceived Behavioral Control	Potential adopters perceptions of their being able to perform a task which is determined by the total set of accessible control beliefs	Five point Likert scale	(Ajzen, 1985; Taylor & Todd, 1995)
	Subjective Norm	The perceived social pressure to engage in a behavior which is influenced by the total set of accessible normative beliefs pertaining to the expectations of significant referents.	Five point Likert scale	(Ajzen, 1985; Taylor & Todd, 1995)
Attitude (Independent Variable)	Affective Attitude	A person's positive or negative feelings about adopting internet banking	Five point Likert scale	(Ajzen, 1985; McLeod, 2014)
	Cognitive Attitude	Beliefs, knowledge and thoughts one has about an attitude object. a private event that is unobservable externally and whose existence can only be inferred. It consists of a mental readiness to act and also guides evaluative (judgmental) responses	Five point Likert scale	(Crowell, 2003; Hogg & Vaughan, 2011; Crites et al., 1994)
	Behavioral Attitude	Refers to the way people behave when exposed to an attitude object or behavioral tendencies	Five point Likert scale	(Crowell, 2003; Hogg & Vaughan, 2011)

Variable	Construct	Operational Definition	Measurement Indicator	Source
		towards socially significant objects		
Adoption of Internet Banking (Dependent Variable)		Adoption of internet banking is defined as demonstrable willingness to employ internet banking technology for the tasks it has been designed to support.		(Chuang, Nakatani & Zhou 2009; Rodgers, 2003; Burgess & Paguio, 2016)
	Frequency of use of IB	Number of times IB has been used within the month	Five point Likert scale	(Chuang, Nakatani & Zhou 2009; Burgess & Paguio, 2016)
	Interest to increase usage of IB	Customer attention to internet banking services not currently being used	Five point Likert scale	(Lichtenstein & Williamson, 2006)
	Intention to increase usage of IB	Customer readiness to adopt more internet banking services	Five point Likert scale	(Ajzen, 1985; Hernandez & Mazzon, 2007; Burgess & Paguio, 2016)

Source: Author (2017)

CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

3.1. Introduction

The chapter aims at explaining how data was gathered and analysed to attain research objectives. The chapter is divided into various sections as follows: research philosophy, research design, target population and sampling, data collection methods, data analysis and ethical considerations.

3.2. Research Philosophy

Research philosophy relates to the development of knowledge and the nature of that knowledge. According to Mackenzie and Knipe (2006), the main influence of the research philosophy is the researcher's particular view of the relationship between knowledge and the process by which it is developed.

The assumption underpinning this research is the philosophy of positivism. Positivism recognizes that we cannot be positive about our claims of knowledge when studying the behavior and actions of humans (Trochim, 2006). Further, through positivism, the researcher is concerned about the facts and not impressions (Creswell, 2003).

3.3. Research Design

This study used a survey design. Survey design was the preferred research method. According to Tan et al. (2007), survey method is the most appropriate when investigating ecommerce and technology adoption. A cross-sectional survey design was employed for this study. A cross-sectional survey gathers data to make inference of a desired population at a particular time (Creswell, 2003).

3.4. Target Population and sampling

3.4.1. Target Population

Target population refers to the entire group of objects in which the researcher is interested in making an inference (Creswell, 2003). The target population in this study comprised all customers who held a bank account with any of the forty-nine (49) commercial banks operating in Nairobi between March and April 2017.

According to Central Bank of Kenya (CBK) (2017), the number of commercial banks in Kenya as at April 2017 was 42 licensed commercial banks with two of them under receivership, namely; Chase Bank and Imperial Bank. There were also 7 foreign banks with offices in Kenya.

This made a sample frame of 49 banks shown in Appendix III. The number of customers who held accounts in each of the branches of the 49 banks was unknown to the researcher but was estimated to be much more than 10,000 given that according to Internet Live Stats (2016), Nairobi's population was slightly over 3 million and most people hold an account with any of the 49 banks.

3.4.2. Sampling

A sample may be defined statistically as a subset of the population and is drawn from the target population (Kothari, 2004). Sampling may then be defined as the process by which the researcher draws a sample from the target population (Saunders, et al., 2009). According to Saunders, et al. (2009), sampling is used when it is impracticable to survey entire population, researcher is faced with budget or time constraints or researcher needs survey results quickly.

This study used Simple Random Sampling; a probability sampling technique, as it is best for survey research (Creswell, 2003). Probability sampling happens where random and unbiased selection of sample members has been employed to ensure that every member of the population may be selected for scientific study (Saunders, et al., 2009).

According to Saunders, et al., (2009), simple random sampling involves the researcher randomly selecting the sample from the sampling frame using a computer or an online random number generator. The sampling frame in this study was the 49 commercial banks operating in Kenya as of April 2017. This method was chosen as it is accurate, easily accessible and is best for a small sample size (Saunders, et al., 2009). According to Mugenda and Mugenda (2003), a sample size of between 10% and 30% is considered adequate. The research therefore sampled 12.24% of the population. Thus six banks were randomly selected from the 49 banks. This were sampled as a means to ensuring that the target population which was banking customers were objectively selected.

To calculate a sample size for the main focus of this study, that is, commercial bank customers in Kenya, Fisher, et al., (1991)'s formula was employed as below. Fisher, et al., (1991) describes formula for sample calculation as follows:

$$n = \frac{z^2 pq}{d^2} \times 100$$

where:

n = desired sample size assuming population is more than 10,000

z = standard normal deviation set at 1.96 which statistically corresponds to 95% confidence level

p= proportion of target population estimated to have adopted internet banking. Since there is no reasonable estimate, this study has used the maximum of 50%

q = 1.0 – p

d = degree of desired accuracy. This study sets it at 0.05 which correspond to 1.96

$n = \frac{(1.96)^2 \times 0.5 \times (1.0 - 0.5)}{(0.05)^2} \times 100$

n = 384.16 Approximately 384 bank customers

Therefore, the sample size was Three Hundred Eighty-Four (384) commercial bank customers.

3.5. Data Collection Methods

Data collection refers to gathering information about a situation, person, problem or phenomenon (Kumar, 2005). In this study, data was collected from primary sources where a self-administered questionnaire was distributed to the respondents in person or by assistance of a research assistant. According to Kumar (2005), a questionnaire is a written list of questions, the answers to which are recorded by respondents. This method of data collection was chosen as it provides low cost even when universe is large, provides freedom from bias of the interviewer (Kothari, 2004).

Since the sample size was Three Hundred Eighty-Four (384) commercial bank customers to be randomly selected from the sample of Six (6) Commercial Banks (sampled from a population of 49 banks), sixty-four (64) questionnaires were distributed to randomly selected customers in each of the 6 banks' Head Offices where Head of Research or such other appointee by the said bank gave authority over the branch to be surveyed. To ensure randomness, every 3rd customer who entered the bank between 10 am and 4 pm in each of the 6 banks' chosen branch was issued with a questionnaire. This was repeated until all the questionnaires per bank had been fully distributed.

Due to bank bureaucracies, only 4 banks gave accent for the researcher to interact with customers. Questionnaires were however distributed to other two banks based on the banks proximity to where respondent was at the moment of the interview.

According to Saunders, et al., (2009) a response rate between 50% and 70% is adequate for research. Therefore, it was estimated that only 70% of questionnaires would be received back from respondents. 500 questionnaires were thus printed and distributed to respondents.

3.6. Data Analysis

Data analysis involves data recording, data storage, establishment of categories, coding of the raw data, tabulation and drawing statistical inferences (Kothari, 2004). It includes managing the data and examining it to answer the research questions. Raw data was coded directly to SPSS for analysis and descriptive statistics.

Raw data before being processed and analysed conveys very little or no meaning to most people and therefore needs to be processed to turn it into information (Saunders, et al., 2009).

3.6.1. Descriptive analysis

Descriptive analysis is largely the study of distributions of one variable and involves rearranging, ordering and manipulating data to generate descriptive information (Kothari, 2004). In this study, Descriptive Statistics such as the metrics of central tendency, variability and symmetry were measured.

3.6.2. Multiple Regression Analysis.

The method is used if the researcher has a single dependent variable presumed to be a function of more than one independent variables and its objective is to make a prediction about the dependent variable based on its covariance with all the concerned independent variables (Saunders, et al., 2009). This analysis was chosen in this study because it was assumed that data was normally distributed, a linear relationship was assumed between the independent variables and the single dependent variable and there is only one dependent variable, that is, Adoption of Internet Banking.

The multiple regression models were as follows:

$Y= \beta_0+ \beta_1 X_1+\varepsilon$……equation 1

$Y= \beta_0+ \beta_2 X_2+ \varepsilon$……equation 2

$Y= \beta_0+ \beta_3 X_3+ \varepsilon$……equation 3

$Y= \beta_0+ \beta_4 X_4+\varepsilon$……equation 4

$Y= \beta_0+ \beta_5 X_5+\varepsilon$ ……equation 5

$Y= \beta_0+ \beta_1 X_1+ \beta_2 X_2+ \beta_3 X_3+ \beta_4 X_4+ \beta_5 X_5+\varepsilon$……equation 6

Where;

Y = Adoption of Internet Banking

X_1 = Perceived Risk Facets

X_2 = Diffusion of innovation Factors

X_3 = Technology Acceptance Factors

X_4 = Planned Behavior Factors

X_5 = Attitude

$\beta 0$ = Constant term

β_1, β_2, β_3, β_4 and β_5 = are the coefficients of independent variables X_1, X_2, X_3, X_4 and X_5 respectively

ε = Error Term

Equation 1- 5 measures the relationship between the Dependent Variable and each of the independent variables X_1, X_2, X_3, X_4 and X_5 while equation 6 is the overall multiple regression model.

3.7. Ethical Consideration in Data Collection

To ensure that participants in this study were not put at risk and that the research respected vulnerable populations, a letter of introduction was issued to the institutions and individuals who participated in the study.

The letter, shown in Appendix 1, which included among other details name, university and contact details of the researcher, study objectives, promise of confidentiality and a request for their participation.

CHAPTER 4

PRESENTATION OF FINDINGS

4.1. Introduction

To transform data into useful information, quantitative analysis such as charts, graphs and statistics help us to explore, present, describe and examine relationships within the data (Saunders, et al., 2009). This chapter therefore presents analysis and interpretation of data collected from the research respondents as set out in research methodology. The main objective of this research was to examine the factors influencing customer adoption of internet banking in Nairobi. To begin with, the study presents preliminary analysis showing response rate followed by descriptive statistics and finally regression analysis and Pearson's correlation analysis were presented.

4.2. Response Rate

Out of the 384 questionnaires distributed to respondents, only 344 questionnaires were successfully qualified for analysis as others were either incomplete or were not received back. This represented 89.58% of the target sample. A response rate of 70% and above is considered excellent for research (Saunders, et al., 2009; Mugenda & Mugenda 2003).

4.3. Descriptive Statistics

This section discussed the various results based on descriptive analysis of the survey data.

4.3.1. Demographic Analysis

Out of the 344 respondents 226 or 65.7% were male while 118 or 34.3% were female. 131 respondents or 38.1% were aged 30 years and below, 238 respondents representing 69.2% of all respondents were aged 40 years and below while 39.8% were aged above 40 years. This implies that all ages were represented amongst the respondents indicating a representative sample of the population in terms of age.

Similarly, 69.2% of the respondents were either Diploma or Degree holders while only 18% of the respondents were below Diploma holders. 56.1% of the respondents earned a monthly salary of KES. 50,000 and below while 77.3% of the respondents earned a monthly salary of KES 100,000 and below monthly. Also, 64.2% of the respondents had been using a computer for more than 5 years and 66.0% had been using internet for more than 5 years. A summary of these findings is shown in Table 4-1 below.

Table 4- 1: Demographic Characteristics

Variable	Classification	Frequency	Percent
Sex	Male	226	65.7%
	Female	118	34.3%
Age	18-30 Years	131	38.1%
	31-40 Years	107	31.1%
	41-50 Years	67	19.5%
	51-60 Years	27	7.8%
	61 Years and above	12	3.5%
Education	Below Diploma	62	18.0%
	Diploma	119	34.6%
	Bachelor's Degree	119	34.6%
	Master's Degree	42	12.2%
	Doctorate Degree	2	0.6%
Monthly Income	KES 50,000 and Below	193	56.1%
	KES 50,001 - KES 100,000	73	21.2%
	KES 100,001 - KES 300,000	49	14.2%
	KES 300,001 - KES 800,000	22	6.4%
	KES 800,001 and Above	7	2.0%
Computer Use in Years	Never Used	23	6.7%
	Below 1 Year	28	8.1%
	1 - 2 Years	22	6.4%
	3 -5 Years	50	14.5%
	Above 5 Years	221	64.2%
Internet Use in Years	Never Used	20	5.8%
	Below 1 Year	18	5.2%
	1 - 2 Years	26	7.6%
	3 - 5 Years	53	15.4%
	Above 5 Years	227	66.0%
Total		**344**	**100.0%**

Source: Author (2017)

4.3.2. Adoption of Internet Banking

Results indicate that only 47.1 % of the respondents had adopted IB as of April 2017 while 52.9% of the respondents had not used internet banking at all. Only 14.5% had used IB for more than 5 years. Further, only 8.7% had adopted IB within the last year indicating slow intake of the innovation. 18% indicated that they had used IB 1 to 3 times in the past month while only 14% of the respondents had used IB for more than 10 times in the past month.

However, interest and intention to adopt IB was highly indicated by the respondents where 79.7% of the respondents agreed to being interested in learning about IB and 78.2% of the respondents agreed to have intentions to adopt IB. See Table 4-2 below for more details.

Table 4- 2: Adoption of Internet Banking

Variable	Classification	Frequency	Percent	Mean	Std. Deviation
Length of time IB has been used	Not used at all	182	52.90%	2.22	1.51
	Below 1 year	30	8.70%		
	1 - 2 years	55	16.00%		
	2-3 years	27	7.80%		
	Above 5 years	50	14.50%		
Frequency of use of IB	Not used at all	181	52.60%	2.09	1.44
	1-3 times	62	18.00%		
	4-6 times	37	10.80%		
	7-10 times	16	4.70%		
	10 + times	48	14.00%		
Interest to increase usage of IB	Strongly Disagree	17	4.90%	3.94	1.01
	Disagree	15	4.40%		
	Neutral	38	11.00%		
	Agree	176	51.20%		
	Strongly Agree	98	28.50%		
Intention to increase usage of IB	Strongly Disagree	15	4.40%	3.87	0.96
	Disagree	17	4.90%		
	Neutral	43	12.50%		
	Agree	192	55.80%		
	Strongly Agree	77	22.40%		
	Total	**344**	**100.00%**		

Source: Author (2017)

4.3.3. Perceived Risk Facet

A Likert Scale of 1 to 5 (where 1 was Strongly Disagree and 5 was Strongly Agree) was used to measure respondents' perception on risk of adopting IB. More than 60% of the respondents failed to disagree that they perceived security risk in adopting IB. Further, more than 60% too did not disagree that they perceived financial risk in adopting IB while more than 70% did not disagree that they perceived performance risk in adopting IB. This could indicate that the respondents perceived security risk, financial risk and performance risk as pertains to adoption of IB. however, more than 80% of the respondents did not agree that they perceived social risk as pertains to adopting IB. Similarly, more than 80% of the respondents disagreed that they

perceived time risk as pertains to adopting IB. Social and Time risks had a less than average mean score with a standard deviation of 1.2 and 1.08 respectively as compared to mean scores above 3.3 for Security, Performance and Financial risks. This means that when deciding whether to adopt IB, social circles and time risk were not a determining factor.

Table 4-3 below gives more descriptive statistics regarding Perceived Risk Facet.

Table 4 - 3: Perceived Risk Facet

Variable	Classification	Frequency	Percentage	Mean	Std. Deviation
Perceived Social Risk	Strongly Disagree	99	28.80%	2.34	1.2
	Disagree	118	34.30%		
	Neutral	58	16.90%		
	Agree	49	14.20%		
	Strongly Agree	20	5.80%		
Perceived Time Risk	Strongly Disagree	115	33.40%	2.12	1.08
	Disagree	131	38.10%		
	Neutral	51	14.80%		
	Agree	37	10.80%		
	Strongly Agree	10	2.90%		
Perceived Security Risk	Strongly Disagree	33	9.60%	3.39	1.23
	Disagree	60	17.40%		
	Neutral	52	15.10%		
	Agree	138	40.10%		
	Strongly Agree	61	17.70%		
Perceived Financial Risk	Strongly Disagree	35	10.20%	3.29	2.46
	Disagree	75	21.80%		
	Neutral	67	19.50%		
	Agree	127	36.90%		
	Strongly Agree	39	11.30%		
Perceived Performance Risk	Strongly Disagree	23	6.70%	3.42	1.08
	Disagree	48	14.00%		
	Neutral	76	22.10%		
	Agree	157	45.60%		
	Strongly Agree	40	11.60%		
	Total	**344**	**100.00%**		

Source: Author (2017)

4.3.4. Diffusion of Innovation Factors

A Likert Scale of 1 to 5 (where 1 was Strongly Disagree and 5 was Strongly Agree) was used to measure respondents' perception on Diffusion of Innovation Factors as pertains to adoption of IB. More than 78% of the respondents agreed that they perceived Relative Advantage in adoption of IB while more than 70% of the respondents agreed that they would be more willing to adopt IB if they had a chance to try it first, that is, if it was trialable before its adoption. Further, more that 90% of the respondents did not disagree that they would be more willing to adopt IB if it was observable while more than 80% of the respondents did not agree that adopting IB was complex.

Table 4-4 below gives more statistical description of the Diffusion of Innovation Factors.

Table 4- 4: Diffusion of Innovation Factors

Variable	Classification	Frequency	Percentage	Mean	Std. Deviation
Relative Advantage	Strongly Disagree	13	3.80%	4.04	0.95
	Disagree	15	4.40%		
	Neutral	24	7.00%		
	Agree	184	53.50%		
	Strongly Agree	108	31.40%		
Compatibility	Strongly Disagree	12	3.50%	3.83	0.98
	Disagree	20	5.80%		
	Neutral	66	19.20%		
	Agree	163	47.40%		
	Strongly Agree	83	24.10%		
Trialability	Strongly Disagree	14	4.10%	3.68	0.98
	Disagree	27	7.80%		
	Neutral	72	20.90%		
	Agree	172	50.00%		
	Strongly Agree	59	17.20%		
Observability	Strongly Disagree	15	4.40%	3.6	0.99
	Disagree	37	10.80%		
	Neutral	65	18.90%		
	Agree	182	52.90%		
	Strongly Agree	45	13.10%		
Complexity	Strongly Disagree	50	14.50%	2.56	1.11
	Disagree	151	43.90%		
	Neutral	61	17.70%		
	Agree	64	18.60%		
	Strongly Agree	18	5.20%		
	Total	**344**	**100.00%**		

Source: Author (2017)

4.3.5. Technology Acceptance Factors

A Likert Scale of 1 to 5 (where 1 was Strongly Disagree and 5 was Strongly Agree) was used to measure respondents' perception on Technology Acceptance Factors as pertains to adoption of IB. 75% of the respondents agreed that internet banking is useful while 79% agreed that they perceived IB to be easy to use. This may imply that IB is perceived to be both useful and easy to adopt. However as shown on Table 4-1 Adoption of Internet Banking Descriptive Statistics above, less than half the respondents have not yet adopted IB besides perceiving it as both useful and easy to use.

Table 4- 5 below gives more statistical description of the Technology Acceptance Factors

Table 4- 5 Technology Acceptance Factors

		Frequency	Percentage	Mean	Std. Deviation
Perceived Usefulness	Strongly Disagree	13	3.8%	3.82	0.93
	Disagree	17	4.9%		
	Neutral	56	16.3%		
	Agree	191	55.5%		
	Strongly Agree	67	19.5%		
Perceived Ease of Use	Strongly Disagree	9	2.6%	3.94	0.86
	Disagree	12	3.5%		
	Neutral	50	14.5%		
	Agree	194	56.4%		
	Strongly Agree	79	23.0%		
	Total	344	100.0%		

Source: Author (2017)

4.3.6. Planned Behaviour Factors

A Likert Scale of 1 to 5 (where 1 was Strongly Disagree and 5 was Strongly Agree) was used to measure respondents' perception of Planned Behaviour Factors as pertains to adoption of IB. 55% of the respondents indicated that they perceived behavioural control while 28.5% were neutral with only 16% disagreeing that they perceived behavioural control towards adoption of IB. Further, 70% agreed that there was subjective norm in terms of availability of resources necessary to adopt IB only 6% disagreed that there was subjective norm in adoption of IB. More descriptive statistics are shown in Table 4-6 below.

Table 4- 6: Planned Behaviour Factors

		Frequency	Percentage	Mean	Std. Deviation
Perceived Behavioral Control	Strongly Disagree	13	3.8%	3.48	0.98
	Disagree	42	12.2%		
	Neutral	98	28.5%		
	Agree	149	43.3%		
	Strongly Agree	42	12.2%		
Subjective Norm	Strongly Disagree	6	1.7%	3.97	0.83
	Disagree	17	4.9%		
	Neutral	36	10.5%		
	Agree	209	60.8%		
	Strongly Agree	76	22.1%		
	Total	344	100		

Source: Author (2017)

4.3.7. Attitude

A Likert Scale of 1 to 5 (where 1 was Strongly Disagree and 5 was Strongly Agree) was used to measure respondents' attitude towards adoption of IB. More than 80% of the respondents

expressed positive affective attitudes towards adoption of IB where respondents either agreed or strongly agreed to feelings of joy and desire about adoption of IB. Similarly, 83% of the respondents had a positive behavioural attitude where they either agreed or strongly agreed to experience satisfaction and felt it is nice to adopt IB. Finally, 87.2 % of the respondents had a positive cognitive attitude where they either agreed or strongly agreed that their overall opinion is that adopting IB is a great idea.

Table 4- 7: Attitude Descriptive Statistics

		Frequency	Percentage	Mean	Std. Deviation
Affective Attitude	Strongly Disagree	5	1.5%	4.22	0.80
	Disagree	14	4.1%		
	Neutral	39	11.3%		
	Agree	205	59.6%		
	Strongly Agree	81	23.5%		
Behavioral Attitude	Strongly Disagree	7	2.0%	4.00	0.80
	Disagree	18	5.2%		
	Neutral	81	23.5%		
	Agree	171	49.7%		
	Strongly Agree	67	19.5%		
Cognitive Attitude	Strongly Disagree	4	1.2%	3.79	0.88
	Disagree	9	2.6%		
	Neutral	31	9.0%		
	Agree	165	48.0%		
	Strongly Agree	135	39.2%		
	Total	**344**	**1**		

Source: Author (2017)

4.3.1.Measuring reliability with Cronbach's alpha test

Cronbach's alpha in SPSS Statistics was used to measure internal consistency or reliability of the scale used in the data. This shows that 343 out of 344 cases were used in the analysis. Further, 1 case was excluded from analysis possibly because it is an outlier. Please see Table 4- 8 below.

Table 4- 8: Case Processing Summary

		N	%
	Valid	343	99.7
	Excluded(a)	1	.3
	Total	344	100.0

a Listwise deletion based on all variables in the procedure.

Source: Author (2017)

Cronbach's alpha is 0.808, which indicates a high level of internal consistency for the scale with the sample. The number of variables is represented by N=50.

Table 4- 9: Cronbach's alpha Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.808	.835	50

Source: Author (2017)

4.3.2.Multicollinearity test

Multicollinearity refers to a situation in which two or more explanatory variables in a multiple regression model are highly linearly related meaning that one can be linearly predicted from the others with a substantial degree of accuracy, for example where X_2 is a function of X_1, ($X_2 = a + bX_1$). While it is good to have a relationship between dependent and independent variables, it is bad to have a relationship between independent variables (Asthana, et al., 2016).

A Multicollinearity test was performed in SPSS and a few samples are shown below in Table 4-12 and Table 4-13 below.

Table 4- 10: Multicollinearity Test 1 Coefficients (a)

Model	Collinearity Statistics	
	Tolerance	VIF
Demographic Factors	.912	1.097
Perceived Risk Facet	.893	1.120
Technological Acceptance Factors	.522	1.917
Planned Behavior Factors	.514	1.947
Attitude	.485	2.064

Dependent Variable: Diffusion of Innovation Factors

Source: Author (2017)

Table 4- 11: Multicollinearity Test 2 Coefficients (a)

Model	Collinearity Statistics	
	Tolerance	VIF
Demographic Factors	.868	1.152
Perceived Risk Facet	.873	1.146
Diffusion of Innovation Factors	.515	1.942
Technological Acceptance Factors	.560	1.786
Planned Behavior Factors	.597	1.676
Diffusion of Innovation Factors	.664	1.507

Dependent Variable: Attitude

Source: Author (2017)

All the Multicollinearity tests had results of VIF below 3 as shown above indicating no signs of correlation between the independent variables. The general rule of thumb is that VIFs below

3 are acceptable, those exceeding 4 warrant further investigation, while VIFs exceeding 10 are signs of serious Multicollinearity requiring correction (Asthana, et al., 2016).

4.3.3.Correlations and Regression Analysis

4.7.1. Perceived Risk Facets

Pearson's correlation

Table 4-16 below shows a Pearson coefficient of correlation matrix for the Perceived Risk Facet. In order to investigate possible association and the direction of the association between variables in the Perceived Risk Facet and the dependent variable Adoption of Internet Banking, a two-tail bivariate correlation test was run in SPSS.

The test indicated negative linear relation between Perceived Risk Facets and Adoption of Internet Banking with the exception of Perceived Performance Risk. Further, the magnitude of the association is small as it is below 0.3.

Table 4- 12: Pearson's Correlations Coefficients for Perceived Risk Facets

		AIB	Perceived Social Risk	Perceived Time Risk	Perceived Security Risk	Perceived Financial Risk	Perceived performance Risk
AIB	Pearson Correlation	1	-.030	-.152(**)	-.114(*)	-.113(*)	.011
	Sig. (2-tailed)		.580	.005	.035	.036	.834
	N	344	344	344	344	344	344
Perceived Social Risk	Pearson	-.030	1	.041	.060	.056	.089
	Sig. (2-tailed)	.580		.443	.267	.297	.100
	N	344	344	344	344	344	344
Perceived Time Risk	Pearson	-	.041	1	.198(**)	.143(**)	.096
	Sig. (2-tailed)	.005	.443		.000	.008	.074
	N	344	344	344	344	344	344
Perceived Security Risk	Pearson	-.114(*)	.060	.198(**)	1	.205(**)	.312(**)
	Sig. (2-tailed)	.035	.267	.000		.000	.000
	N	344	344	344	344	344	344
Perceived Financial Risk	Pearson	-.113(*)	.056	.143(**)	.205(**)	1	.172(**)
	Sig. (2-tailed)	.036	.297	.008	.000		.001
	N	344	344	344	344	344	344
Perceived Performance Risk	Pearson	.011	.089	.096	.312(**)	.172(**)	1
	Sig. (2-tailed)	.834	.100	.074	.000	.001	
	N	344	344	344	344	344	344

** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).

Source: Author (2017)

Regression Analysis

A linear regression analysis was done to further explain the relationship between perceived risk facet and adoption of internet banking.

Table 4-15 below summarizes the Linear Regression Analysis results. In the regression, Perceived Risk Facets was the independent variable while Adoption of Internet Banking was the dependent variable.

The results indicate R = 0.231, R^2 = 0.048, F (1, 342) = 19.306, P< .0001. The R value explains how well the model describes the data. In this case, the model describes 23.1% of the data. R^2 explains the extent to which the variability of the dependent variable, Adoption of Internet Banking is explained by the independent variable Perceived Risk Facets. In this case, 5.3% of the variability in Adoption of Internet Banking was explained by the independent variable Perceived Risk Facets. Sometimes R^2 may be overestimated so SPSS gives us the adjusted R^2 which in this case gave 5.1% meaning that 5.1% of Adoption of Internet Banking was explained by Perceived Risk Facets.

The analysis of variance (ANOVA) table provides statistics about the overall significance of the model being fit. The significant value which is also P-Value in the model is 0.000 which indicates that the independent variable in the model explains the dependent variable. This value which is less than 0.05 means that researcher can reject the ANOVA null hypothesis which in this case states that the model has no explanatory power. Researcher therefore rejected the null hypothesis by stating that Perceived Risk Facets is a predictor of Adoption of Internet Banking.

Further, in the coefficients table, the P-value for the independent variable is .000 further indicating Perceived Risk Facets' significance at prediction the dependent variable Adoption of Internet Banking.

The Beta (B) values were used as coefficients to complete the previously formulated regression model $Y= \beta_0+ \beta_1X_1+\varepsilon$. The regression model therefore was as follows:

$Y= 4.094 - 0.294X_1$

Where;

4.094 = constant value of Internet Banking Adoption when the value of Perceived Risk Facets is zero, that is, if customers perceive no risk in adopting internet banking

- 0.294= Coefficient of perceived risk facets. For every unit increase in perceived risk facets, we expect approximately 29.4% decrease in adoption of internet banking.

Y = Adoption of Internet Banking

X_1 = Perceived Risk Facets

Table 4- 13: SPSS Regression Output for Perceived Risk Facets

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
	.231(a)	0.053	0.051	0.79528		
a Predictors: (Constant), Perceived Risk Facet						
ANOVA(b)						
Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	12.211	1	12.211	19.306	.000(a)
	Residual	216.305	342	0.632		
	Total	228.516	343			
a Predictors: (Constant), Perceived Risk Facet b Dependent Variable: Adoption of Internet Banking						
Coefficients(a)						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
(Constant)		4.094	0.186		22.054	0.000
Perceived Risk Facet		-0.294	0.067	-0.231	-4.394	0.000
a Dependent Variable: Adoption of Internet Banking						

Source: Author (2017)

4.7.2. Diffusion of Innovation Factors and Adoption of Internet Banking

Pearson's correlation

The Table 4-16 below shows a Pearson coefficient of correlation matrix for the Diffusion of Innovation Factors. In order to investigate possible association and the direction of the association between variables in the Diffusion of Innovation Factors and the dependent variable Adoption of Internet Banking, a two-tail bivariate correlation test was run in SPSS.

The test indicated statistically significant linear relation between Diffusion of Innovation Factors and Adoption of Internet Banking as shown by P values for most variables that have P values below 0.05 ($P < 0.05$). All variables are statistically significant except for Complexity 3 variable whose $P= 0.146$ indicating statistical insignificance.

The results indicate that the direction between Diffusion of Innovation Factors and Adoption of Internet Banking is positive except for Complexity which has a negative relationship with AIB.

Table 4- 14: Pearson's Correlations for Diffusion of Innovation Factors

		AIB	Relative Advantage	Compatibility	Trialability	Observability	Complexity
AIB	Pearson Correlation	1	.254(**)	.323(**)	.199(**)	.290(**)	-.079
	Sig. (2-tailed)		.000	.000	.000	.000	.146
	N	344	344	344	344	344	344
Relative Advantage	Pearson Correlation	.254(**)	1	.446(**)	.350(**)	.326(**)	-.129(*)
	Sig. (2-tailed)	.000		.000	.000	.000	.017
	N	344	344	344	344	344	344
Compatibility	Pearson Correlation	.323(**)	.446(**)	1	.460(**)	.383(**)	-.202(**)
	Sig. (2-tailed)	.000	.000		.000	.000	.000
	N	344	344	344	344	344	344
Trialability	Pearson Correlation	.199(**)	.350(**)	.460(**)	1	.466(**)	-.206(**)
	Sig. (2-tailed)	.000	.000	.000		.000	.000
	N	344	344	344	344	344	344
Observability	Pearson Correlation	.290(**)	.326(**)	.383(**)	.466(**)	1	-.090
	Sig. (2-tailed)	.000	.000	.000	.000		.097
	N	344	344	344	344	344	344
Complexity	Pearson Correlation	-.079	-.129(*)	-.202(**)	-.206(**)	-.090	1
	Sig. (2-tailed)	.146	.017	.000	.000	.097	
	N	344	344	344	344	344	344

** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).

Source: Author (2017)

Regression Analysis

A linear regression analysis was done to further explain the relationship between Diffusion of Innovation Factors and adoption of internet banking.

Table 4-17 above summarizes the Linear Regression Analysis results. In the regression, Diffusion of Innovation Factors was the independent variable while Adoption of Internet Banking was the dependent variable.

The results indicate R = 0.329, R^2 = 0.108, Adj R^2 = 0.105 F (1, 342) = 40.395, P< .0001. The R value explains how well the model describe the data. In this case, the model describes 32.9% of the data. R^2 explains the extent to which the variability of the dependent variable, Adoption of Internet Banking is explained by the independent variable Diffusion of Innovation Factors. In this case, 10.8% of the variability in Adoption of Internet Banking was explained by the independent variable Diffusion of Innovation Factors. Sometimes R^2 may be overestimated so SPSS gives us the adjusted R^2 which in this case gave 10.5% meaning that 10.5% of Adoption of Internet Banking was explained by Diffusion of Innovation Factors.

The analysis of variance (ANOVA) table provides statistics about the overall significance of the model being fit. The significant value which is also P-Value in the model is 0.000 which indicates that the independent variable in the model explains the dependent variable. This value which is less than 0.05 means that researcher can reject the ANOVA null hypothesis which in

this case states that the model has no explanatory power. Researcher therefore rejected the null hypothesis by stating that Diffusion of Innovation Factors is a predictor of Adoption of Internet Banking.

Further, in the coefficients table, the P-value for the independent variable is .000 further indicating Diffusion of Innovation Factors' significance at prediction of the dependent variable Adoption of Internet Banking.

The Beta (B) values were used as coefficients to complete the previously formulated regression model $Y= \beta 0+ \beta_2 X_2+ \varepsilon$. The regression model therefore was as follows:

$Y= 1.496 + 0.520X_2$

Where;

1.496 = constant value of Internet Banking Adoption when the value of Diffusion of Innovation Factors is zero

0.520 = Coefficient of Diffusion of Innovation Factors. For every unit increase in Diffusion of Innovation Factors, we expect approximately 52.0% increase in adoption of internet banking.

Y = Adoption of Internet Banking

X_2 = Diffusion of Innovation Factors

Table 4- 15: SPSS Regression Output for Diffusion of Innovation Factors

Model Summary

Model	R	R Square		Adjusted R Square	Std. Error of the Estimate
1	.329(a)	.108		.105	.77203

a Predictors: (Constant), Diffusion of Innovation Factors

ANOVA (b)

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	24.672	1	24.672	41.395	.000(a)
Residual	203.843	342	.596		
Total	228.516	343			

a Predictors: (Constant), Diffusion of Innovation Factors
b Dependent Variable: Adoption of Internet Banking

Coefficients (a)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.496	.284		5.277	.000
Diffusion of Innovation Factors	.520	.081	.329	6.434	.000

a Dependent Variable: Adoption of Internet Banking

Source: Author (2017)

4.7.3. Technology Acceptance Factors and Adoption of Internet Banking

Pearson's correlation

The Table 4-18 below shows a Pearson coefficient of correlation matrix for the Technology Acceptance Factors. In order to investigate possible association and the direction of the association between variables in the Technology Acceptance Factors and the dependent variable Adoption of Internet Banking, a two-tail bivariate correlation test was run in SPSS.

The test indicated statistically significant linear relation between Technology Acceptance Factors and Adoption of Internet Banking as shown by P values for all variables that are all $P < 0.001$. All variables are statistically significant. The results indicate that the direction between Technology Acceptance Factors and Adoption of Internet Banking is positive as shown by the correlation values r which lie between .289 and .385. Further, that the magnitude of the association is strong as shown by the r values above .3.

Table 4- 16: Pearson's Correlations for Technology Acceptance Factors

		AIB	Perceived Usefulness	Perceived Ease of Use
AIB	Pearson Correlation	1	.304(**)	.289(**)
	Sig. (2-tailed)		.000	.000
	N	344	344	344
Perceived Usefulness	Pearson Correlation	.304(**)	1	.511(**)
	Sig. (2-tailed)	.000		.000
	N	344	344	344
Perceived Ease of Use	Pearson Correlation	.289(**)	.511(**)	1
	Sig. (2-tailed)	.000	.000	
	N	344	344	344

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

Source: Author (2017)

Regression Analysis

A linear regression analysis was done to further explain the relationship between Technology Acceptance Factors and adoption of internet banking.

Table 4-19 below summarizes the Linear Regression Analysis results. In the regression, Technology Acceptance Factors was the independent variable while Adoption of Internet Banking was the dependent variable.

The results indicate R = 0.381, R^2 = 0.145, Adj R^2 = 0.143, F (1, 342) = 58.122, P< .001. The R value explains how well the model describe the data. In this case, the model describes 38.1% of the data. R^2 explains the extent to which the variability of the dependent variable, Adoption of Internet Banking is explained by the independent variable Technology Acceptance Factors. In this case, 14.5% of the variability in Adoption of Internet Banking was explained by the independent variable Technology Acceptance Factors. Sometimes R^2 may be overestimated so SPSS gives us the adjusted R^2 which in this case gave 14.3.0% meaning that 14.3.0% of Adoption of Internet Banking was explained by Technology Acceptance Factors.

The analysis of variance (ANOVA) table provides statistics about the overall significance of the model being fit. The significant value which is also P-Value in the model is 0.000 which indicates that the independent variable in the model explains the dependent variable. This value which is less than 0.05 means that researcher can reject the ANOVA null hypothesis which in this case states that the model has no explanatory power. Researcher therefore rejected the null hypothesis by stating that Technology Acceptance Factors is a positive predictor of Adoption of Internet Banking. Further, in the coefficients table, the P-value for the independent variable is .000 further indicating Technology Acceptance Factors' significance at prediction of the dependent variable Adoption of Internet Banking.

The Beta (B) values were used as coefficients to complete the previously formulated regression model $Y= \beta_0+ \beta_3X_3+ \varepsilon$.

The regression model therefore was as follows:

$Y= 1.729 + 0.416X_3$

Where;

1.729 = constant value of Internet Banking Adoption when the value of Technology Acceptance Factors is zero

0.416 = Coefficient of Technology Acceptance Factors. For every unit increase in Technology Acceptance Factors, we expect approximately 41.6% increase in adoption of internet banking.

Y = Adoption of Internet Banking

X_3 = Technology Acceptance Factors

Table 4- 17: SPSS Regression Output for Technology Acceptance Factors

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.381(a)	.145	.143	.75572

a Predictors: (Constant), Technology Acceptance Factors

ANOVA (b)

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	33.194	1	33.194	58.122	.000(a)
Residual	195.321	342	.571		
Total	228.516	343			

a Predictors: (Constant), Technology Acceptance Factors

b Dependent Variable: Adoption of Internet Banking

Coefficients (a)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.729	.210		8.225	.000
Technology Acceptance Factors	.416	.055	.381	7.624	.000

a Dependent Variable: Adoption of Internet Banking

Source: Author (2017)

4.7.4. Planned Behaviour Factors and Adoption of Internet Banking

After Factor Analysis, 3 variables from the Planned Behaviour factors model did not load into any of the 13 factors. As a result, only one of the 4 factors was subjected to further analysis as shown below.

Pearson's correlation

The Table 4-20 below shows a Pearson coefficient of correlation matrix for the Planned Behaviour factors. In order to investigate possible association and the direction of the association between variables in the Planned Behaviour factors and the dependent variable Adoption of Internet Banking, a two-tail bivariate correlation test was run in SPSS.

The test indicated statistically significant linear relation between Planned Behaviour factors and Adoption of Internet Banking as shown by the P value for the variables

P=.000. P values that are < 05 are considered statistically significant. The results indicate that the direction between Planned Behaviour factors and Adoption of Internet Banking is positive as shown by the correlation value r which is .274. Further, that the magnitude of the association is medium as shown by the r value which is below .3.

Table 4- 18: Pearson's Correlations for Planned Behaviour factors

		AIB	Perceived Behavioural Control
AIB	Pearson Correlation	1	.274(**)
	Sig. (2-tailed)		.000
	N	344	344
Perceived Behavioural Control	Pearson Correlation	.274(**	1
	Sig. (2-tailed)	.000	
	N	344	344

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

Source: Author (2017)

Regression Analysis

A linear regression analysis was done to further explain the relationship between Planned Behaviour factors and adoption of internet banking.

Table 4-21 below summarizes the Linear Regression Analysis results. In the regression, Planned Behaviour factors was the independent variable while Adoption of Internet Banking was the dependent variable.

The results indicate R = 0.330, R^2 = 0.109, Adj R^2 = 0.106, F (1, 342) = 41.851, P< .001. The R value explains how well the model describe the data. In this case, the model describes 33.0% of the data. R^2 explains the extent to which the variability of the dependent variable, Adoption of Internet Banking is explained by the independent variable Planned Behaviour factors. In this case, 10.9% of the variability in Adoption of Internet Banking was explained by the independent variable Planned Behaviour factors. Sometimes R^2 may be overestimated so SPSS gives us the adjusted R^2 which in this case gave 10.6% meaning that 10.6% of Adoption of Internet Banking was explained by Planned Behaviour factors.

The analysis of variance (ANOVA) table provides statistics about the overall significance of the model being fit. The significant value which is also P-Value in the model is < 0.001 which indicates that the independent variable in the model explains the dependent variable. This value which is less than 0.05 means that researcher can reject the ANOVA null hypothesis which in this case states that the model has no explanatory power. Researcher therefore rejected the null

hypothesis by stating that Planned Behaviour factors is a positive predictor of Adoption of Internet Banking.

Further, in the coefficients table, the P-value for the independent variable is < .001 further indicating Planned Behaviour factors' significance at prediction of the dependent variable Adoption of Internet Banking.

The Beta (B) values were used as coefficients to complete the previously formulated regression model $Y= \beta_0+ \beta_4X_4+\varepsilon$. The regression model therefore was as follows:

$Y= 1.926 + 0.375X_4$

Where;

1.926 = constant value of Internet Banking Adoption when the value of Planned Behaviour factors is zero

0.375 = Coefficient of Planned Behaviour factors. For every unit increase in Planned Behaviour factors, we expect approximately 37.5% increase in adoption of internet banking.

Y = Adoption of Internet Banking

X_4 = Planned Behaviour factors

Table 4- 19: SPSS Regression Output for Planned Behaviour factors

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.330(a)	.109	.106	.77157

a Predictors: (Constant), Planned Behavior Factors

ANOVA (b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	24.915	1	24.915	41.851	.000(a)
	Residual	203.601	342	.595		
	Total	228.516	343			

a Predictors: (Constant), Planned Behavior Factors
b Dependent Variable: Adoption of Internet Banking

Coefficients (a)

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.926	.217		8.892	.000
	Planned Behavior Factors	.375	.058	.330	6.469	.000

a Dependent Variable: Adoption of Internet Banking

Source: Author (2017)

4.7.5. Attitude and Adoption of Internet Banking

Pearson's correlation

The Table 4-22 below shows a Pearson coefficient of correlation matrix for Attitude. In order to investigate possible association and the direction of the association between variables in Attitude and the dependent variable Adoption of Internet Banking, a two-tail bivariate correlation test was run in SPSS.

The test indicated statistically significant linear relation between Attitude and Adoption of Internet Banking as shown by P values for all variables which are all < 0.001. The results indicate that the direction between Attitude and Adoption of Internet Banking is positive as shown by the correlation-values .302 to .378. Further, that the magnitude the association is high as it is above 0.3 for all variables.

Table 4- 20: Pearson's Correlations for Attitude

		AIB	Affective Attitude	Behavioral Attitude	Cognitive Attitude
AIB	Pearson Correlation	1	.340(**)	.378(**)	.302(**)
	Sig. (2-tailed)		.000	.000	.000
	N	344	344	344	344
Affective Attitude	Pearson Correlation	.340(**)	1	.589(**)	.606(**)
	Sig. (2-tailed)	.000		.000	.000
	N	344	344	344	344
Behavioral Attitude	Pearson Correlation	.378(**)	.589(**)	1	.654(**)
	Sig. (2-tailed)	.000	.000		.000
	N	344	344	344	344
Cognitive Attitude	Pearson Correlation	.302(**)	.606(**)	.654(**)	1
	Sig. (2-tailed)	.000	.000	.000	
	N	344	344	344	344

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

Source: Author (2017)

Regression Analysis

A linear regression analysis was done to further explain the relationship between Attitude and adoption of internet banking.

Table 4-23 below summarizes the Linear Regression Analysis results. In the regression, Attitude was the independent variable while Adoption of Internet Banking was the dependent variable.

The results indicate R = 0.405, R^2 = 0.164, Adj R^2 = 0.161, F (1, 342) = 66.932, P< .001. The R value explains how well the model describe the data. In this case, the model describes 40.5% of the data. R^2 explains the extent to which the variability of the dependent variable, Adoption of Internet Banking is explained by the independent variable Attitude. In this case, 16.4% of the variability in Adoption of Internet Banking was explained by the independent variable Attitude. Sometimes R^2 may be overestimated so SPSS gives us the adjusted R^2 which in this case gave 16.1% meaning that 16.1% of Adoption of Internet Banking was explained by Attitude.

The analysis of variance (ANOVA) table provides statistics about the overall significance of the model being fit. The significant value which is also P-Value in the model is < 0.001 which indicates that the independent variable in the model explains the dependent variable. This value which is less than 0.05 means that researcher can reject the ANOVA null hypothesis which in this case states that the model has no explanatory power. Researcher therefore rejected the null hypothesis by stating that Attitude is a positive predictor of Adoption of Internet Banking.

Further, in the coefficients table, the P-value for the independent variable is < .001 further indicating Attitude's significance at prediction of the dependent variable Adoption of Internet Banking.

The Beta (B) values were used as coefficients to complete the previously formulated regression model $Y= \beta_0+ \beta_5X_5+\varepsilon$. The regression model therefore was as follows:

$Y= 1.303+ 0.495X_5$

Where;

1.303= constant value of Internet Banking Adoption when the value of Attitude is zero.

0.495 = Coefficient of Attitude. For every unit increase in Attitude, we expect approximately 49.5% increase in adoption of internet banking.

Y = Adoption of Internet Banking
X_5 = Attitude

Table 4- 21: SPSS Regression Output for Attitude

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.405(a)	.164	.161	.74754

a Predictors: (Constant), Attitude

ANOVA (b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	37.402	1	37.402	66.932	.000(a)
	Residual	191.113	342	.559		
	Total	228.516	343			

a Predictors: (Constant), Attitude
b Dependent Variable: Adoption of Internet Banking

Coefficients (a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.303	.247		5.269	.000
	Attitude	.495	.061	.405	8.181	.000

a Dependent Variable: Adoption of Internet Banking

Source: Author (2017)

4.7.6. Overall Model and Adoption of Internet Banking

A linear regression analysis was done to explain the relationship between all the independent variables and adoption of internet banking. Table 4-24 below summarizes the Linear Regression Analysis results. In the regression, Perceived Risk Facet, Diffusion of Innovation Factors, Technological Acceptance Factors, Planned Behaviour Factors, Attitude and Demographic Factors were the independent variable while Adoption of Internet Banking was the dependent variable.

The results indicate R = 0.639, R^2 = 0.409, Adj R^2 = 0.393, F (9, 334) = 25.678, P< .001. The R value explains how well the model describe the data. In this case, the model describes 63.9% of the data. R^2 explains the extent to which the variability of the dependent variable, Adoption of Internet Banking is explained by the independent variable, Perceived Risk Facet, Diffusion of Innovation Factors, Technological Acceptance Factors, Planned Behaviour Factors, Attitude and Demographic Factors. In this case, 40.9% of the variability in Adoption of Internet Banking was explained by the independent variables Perceived Risk Facet, Diffusion of Innovation Factors, Technological Acceptance Factors, Planned Behaviour Factors, Attitude and

Demographic Factors. Sometimes R^2 may be overestimated so SPSS gives us the adjusted R^2 which in this case gave 39.3% meaning that 39.3% of Adoption of Internet Banking was explained by Perceived Risk Facet, Diffusion of Innovation Factors, Technological Acceptance Factors, Planned Behaviour Factors, Attitude and Demographic Factors.

The analysis of variance (ANOVA) table provides statistics about the overall significance of the model being fit. The significant value which is also P-Value in the model is < 0.001 which indicates that the independent variables in the model explain the dependent variable. This value which is less than 0.05 means that researcher can reject the ANOVA null hypothesis which in this case states that the model has no explanatory power. Researcher therefore rejected the null hypothesis by stating that Perceived Risk Facet, Diffusion of Innovation Factors, Technological Acceptance Factors, Planned Behaviour Factors, Attitude and Demographic Factors are predictors Adoption of Internet Banking.

The Beta (B) values were used as coefficients to complete the previously formulated regression model $Y= \beta_0+ \beta_1X_1+ \beta_2X_2+ \beta_3X_3+ \beta_4X_4+ \beta_5X_5+\varepsilon$. The regression model therefore was as follows:

$Y= 0.985 – 0.182X_1 + 0.206 X_2 + 0.079X_3 - 0.06X_4 + 0.209 X_5$

Where;

0.985 = constant value of Internet Banking Adoption when the value of X1, X2, X3, X4, X5 and Demographic factors is zero.

-0.182 = Coefficient of Perceived Risk Facet. For every unit increase in Perceived Risk Facet, we expect approximately 18.2% decrease in adoption of internet banking.

0.206 = Coefficient of Diffusion of Innovation Factors. For every unit increase in Diffusion of Innovation Factors, we expect approximately 20.6% increase in adoption of internet banking.

0.079= Coefficient of Technological Acceptance Factors. For every unit increase in Technological Acceptance Factors, we expect approximately 7.9% increase in adoption of internet banking.

-0.06 = Coefficient of Planned Behaviour Factors. For every unit increase in Planned Behaviour Factors, we expect approximately 6% decrease in adoption of internet banking.

0.209 = Coefficient of Attitude. For every unit change in Attitude, we expect approximately 20.9% increase in adoption of internet banking.

Y = Adoption of Internet Banking

X_1 = Perceived Risk Facets

X_2 = Diffusion of innovation Factors

X_3 = Technology Acceptance Factors

X_4 = Planned Behavior Factors

X_5 = Attitude

Further, Perceived Risk Facet, Attitude and Diffusion of Innovation Factors were found to have a significant relationship with the dependent variable as their p-values were below 0.005 while Technology Acceptance Factors and Planned Behavior Factors were found to have an insignificant relationship with the dependent variable as their p-values were above 0.005. More information was presented in Table 4-24 below.

Table 4- 22: SPSS Regression Output for overall Model

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.639(a)	.409	.393	.63591

a Predictors: (Constant), Internet Banking Use, Sex, Perceived Risk Facet, Diffusion of Innovation Factors, Age, Demographic Factors, Attitude, Technology Acceptance Factors, Planned Behavior Factors

ANOVA (b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	93.454	9	10.384	25.678	.000(a)
	Residual	135.062	334	.404		
	Total	228.516	343			

a Predictors: (Constant), Internet Banking Use, Sex, Perceived Risk Facet, Diffusion of Innovation Factors, Age, Demographic Factors, Attitude, Technology Acceptance Factors, Planned Behavior Factors
b Dependent Variable: Adoption of Internet Banking

Cbefficients (a)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.985	.368		2.678	.008
Perceived Risk Facet	-.182	.055	-.144	-3.326	.001
Diffusion of Innovation Factors	.206	.082	.130	2.519	.012
Technology Acceptance Factors	.079	.063	.072	1.259	.209
Planned Behavior Factors	-.060	.067	-.053	-.904	.367
Attitude	.209	.073	.171	2.879	.004
Demographic Factors	.029	.046	.028	.621	.535
Sex	-.064	.074	-.037	-.868	.386
Age	.028	.033	.037	.843	.400
Internet Banking Use	.729	.078	.447	9.310	.000

a Dependent Variable: Adoption of Internet Banking

Source: Author (2017)

CHAPTER 5

DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1. Introduction

This chapter presents a summary of discussions and conclusions of research findings. This is followed by recommendations and suggestions for future research. The overall objective of the research was understanding the factors influencing the adoption of internet banking by customers in Nairobi. Further, this was broken down into five specific objectives as follows: To establish the extent to which perceived risk facet influence adoption of internet banking by commercial banks customers in Nairobi, to examine the extent to which the diffusion of innovation factors influence adoption of internet banking by commercial banks customers in Nairobi, to determine the extent to which technological acceptance factors affect adoption of internet banking by commercial banks customers in Nairobi, to examine the extent to which planned behavior factors influence adoption of internet banking by commercial banks customers in Nairobi and to establish the extent to which attitude influence adoption of internet banking by commercial banks customers in Nairobi.

5.2. Discussions and Conclusions of the findings

This section explains the major findings of the research in line with the research objectives.

5.2.1.Adoption of Internet Banking

This research found that IB adoption in Kenya was at 47.1%. Also, only 14% of respondents had used IB for more than 10 times in the past one month indicating low usage of the innovation amongst those who had already adopted it. Further, IB intake is very slow as indicated by the results where only 8.7% of respondents have used IB for less than one year. In contrast, 80% of those who have adopted are interested in learning more about IB while a similar percentage have intention to increase adoption of IB.

Based on the finding that 47% of the sample of commercial banks customers had adopted internet banking as of April 2017; and that only 14% of respondents had used IB, for more than 10 times in the past one month, it can be concluded that less than half of the population of commercial banks customers in Nairobi have adopted internet banking and the average level of use is low. Therefore, there is still some way to go before this technology is widely adopted accompanied by high usage of the innovation among the adopters.

The high interest among respondents with respect to learning about more IB services and intention to increase adoption of IB, suggests they are still assessing the innovation but may be hindered by inadequate information on how the innovation works.

The overall regression model presented a strong statistically significant relationship between Internet Banking Adoption and Perceived Risk Facets, Diffusion of Innovation Factors and Attitude. Research infers that these three groups are major factors that influence internet banking adoption by customers in Nairobi. Similarly, results showed that there was no statistically significant relationship between Internet Banking Adoption and Technology Acceptance Factors and Planned Behavior Factors. Researcher therefore infers that these two factors do not influence internet banking adoption by customers in Nairobi.

5.2.2.Perceived Risk Facet and Adoption of Internet Banking

Respondents to this research expressed different perceptions in different risks. Most of the respondents perceived high security, financial and performance risk in adopting IB where generally those who did not disagree to having these risk perceptions ranged between 70% and 80% of the respondents. However, results show that majority of the respondents did not indicate perceptions of social and time risk in using IB where generally above 70% of the respondents disagreed to the questions relating to Social Risk and Time Risk. From the regression analysis, researcher concluded that there was a strong negative relationship between Perceived Risk Facets and Adoption of Internet Banking in Kenya (Yaghoubi & Bahmani, 2011; Kuisma et al., 2007; Yang, Liu, Li, & Yu, 2015; Lee, 2009).

In their comments, people quoted hackers and cyber-crimes linked with online banking. They also expressed fear in 'exposing' information concerning their bank account details in the internet as they felt that they had no control of the information once it is out there in the internet. Further, others commented that they feared the IB platform may not work as intended thereby causing them to either transfer more money than they planned to or to transfer money to destinations they did not plan.

From the regression analysis, the R^2 value was 5.3% indicating that only 5.3% of the variation in Adoption of Internet banking is explained by Perceived Risk Facet. However, the strength of this relation is very high as shown by the P-value which is below 0.005 and the F value of 19.306. Further, Perceived Risk Facet is the only factor that has a negative relationship with Adoption of Internet banking. Researcher therefore concludes that Perceived Risk Facets is one of the most important factors that contribute to people's non-adoption of internet banking.

The regression analysis result indicating a strong negative relationship between Perceived Risk Facets and Adoption of Internet Banking suggests that perceived risk, an indication of an insecure financial environment is an important consideration before adoption of IB. It appears that improving other factors for IB adoption without reduction of perceived risk will not result in significant increase in adoption. This result is in agreement with Yoghoubi & Bahmani, (2011) who found that controlling the risks associated with IB is far more important than increasing its benefits.

5.2.3. Diffusion of Innovation Factors and Adoption of Internet Banking

This study results show that respondents indicated preference to IB over other methods as expressed by the over 80% of the respondents who either agreed or strongly agreed to the Relative Advantage of IB. Also, majority of the respondents indicated that IB was compatible with their finances and their lifestyle as indicated by more than 70% who either agreed or strongly agreed on Compatibility. Further, majority of the respondents would be more willing to adopt IB if they had a chance to try it out before fully adopting it and felt that they could be more willing to adopt IB if it was observable from other who are using it, probably to learn from others' experiences. Results show that IB is not complex as indicated by the majority (85%) who disagreed that IB is complex. This results are however contrary to the low IB adoption results indicating that even though the respondents generally agreed to the diffusion of innovation factors that IB has relative advantage, is compatible to one's finances and lifestyle and is not complicated, they still had not adopted it. But also, respondents felt that they would be more willing to adopt IB based on its being trialable and observable.

From the regression analysis, Researcher concludes that Diffusion of Innovation Factors positively influences Adoption of Internet Banking (Rodgers, 2003; Hernandez & Mazzon, 2007; Nguru, 2010; Njuguna, et al., 2012; Lee, et al., 2013). This was indicated by the strong positive relationship in the regression analysis as represented by a P-Value below 0.005 and F-test of 40.39. The R^2 value of 10.5% indicate that Diffusion of Innovation Factors explain 10.5% of the variation in Adoption of Internet banking in Nairobi.

Despite acknowledging that IB was not complicated many respondents had not adopted it. This suggests that there are important impediments to adoption. As mentioned above perceived risk is the major such impediment.

5.2.4. Technology Acceptance Factors and Adoption of Internet Banking

This study results indicate that majority of the respondents perceive IB to be easy to use and a useful innovation. This is as indicated by the over 75% respondents who either agreed or strongly agreed to Perceived Usefulness and Perceived Ease of Use. Further, researcher concludes that Technology Acceptance Factors is a positive predictor of Adoption of Internet Banking (Taylor & Todd, 1995; Hernandez & Mazzon, 2007; Mukabi & Mudida, 2012; Njuguna et al., 2012). Further, the regression analysis predicted a strong relationship between Technology Acceptance Factors and Adoption of Internet Banking where the P-Value was below 0.005 and an F-test of 58.122. The R^2 value of 14.5% indicate that Technology Acceptance Factors explain 14.5% variance in Adoption of Internet Banking.

The study results indicated that majority of the respondents perceive IB to be easy to use and it is a useful innovation. The conclusion from this finding is that adoption is not primarily limited by low ease of use of the innovation or the lack of utility. Rather, there is or are other impediments.

5.2.5. Planned Behaviour Factors and Adoption of Internet Banking

This study results indicate that generally respondents' peers and significant others support the idea that they should adopt IB. Also, the respondents indicated to be able to use IB and to have the necessary resources required to use IB. This is indicated by the over 55% respondents who either agreed or strongly agreed to the Perceived Behavioural Control questions and the 80% respondents who either agreed or strongly agreed to the Subjective Norm questions.

Further, researcher concludes that Planned Behaviour Factors is a positive predictor of Adoption of Internet Banking (Ajzen, 1985; Taylor & Todd, 1995; Yoghoubi and Bahmani, 2011). This is as indicated by the regression analysis output which predicted a strong relationship between Planned Behaviour Factors and Adoption of Internet Banking where the P-Value was below 0.005 and an F-test of 56.667.

A significant proportion of respondents (55%) either agreed or strongly agreed to the Perceived Behavioural Control questions, an indication that they were in an unfavourable social environment for adoption of IB. 80% of the respondents either agreed or strongly agreed to the Subjective Norm questions. The conclusion from this finding is that adoption is limited by lack of resources to adopt IB or the cost of the internet services. This could also include unreliable internet services.

5.2.6. Attitude and Adoption of Internet Banking

This study results showed that people have a positive attitude towards Adoption of Internet Banking. This could indicate that respondents regard IB highly as indicated by their positive attitude towards its adoption. The researcher concludes that Attitude is a positive predictor of Adoption of Internet Banking (Bauer, 1960; Davis, 1989; Ajzen, 1985; Fishbein & Ajzen, 1975; McLeod, 2014). This is as indicated by the regression analysis output which predicted a strong relationship between Attitude and Adoption of Internet Banking where the P-Value was below 0.005 and an F-test of 66.932. The R^2 value of 16.4% indicate that Attitude explains 16.4% variance in Adoption of Internet Banking.

The research showed that people have a positive attitude towards adoption of Internet Banking. The conclusion from this finding is that adoption is not limited by people's attitudes. Rather, there is/are other impediments.

5.3. Recommendations

First, because of the critical importance of perceived risk, Government of Kenya and other stakeholders (CBK, KBA) should invest heavily in measures to mitigate risks associated with internet banking. Such measures include investment in systems and training of personnel.

Second, it is also useful to consider making safe internet services free to encourage the use of internet banking.

Third, other studies on factors that influence internet banking adoption should be carried out. Banks should become more proactive in supporting researchers in this field. Further to this, the methods used in the field collection of data should allow closer probing of responses from respondents in order to get best results.

Finally, there is need for continuous awareness and information provision on how the IB innovation works. Banks should continuously educate their customers on availability of IB innovation as well as measures that may already be in place to mitigate risk associated with the use of the innovation.

5.4. Limitations of the study

The regression coefficients may suggest weak explanatory relationships between the dependent variable and independent variables. There are some possible explanations for this situation. In terms of the data collection, one of the shortcomings was the speed with which the data was collected on account of pressure of time and financial resources. Thus, respondents were asked to fill questionnaires because it was not possible for the researcher to undertake personal

interviews of all the respondents. This approach had the weakness that some respondents did not complete the questionnaires. Others rushed into completing the questionnaires without giving much thought to the answers they were writing. Further, it was not possible for the researcher to probe answers since respondents wrote the answers on their own without guidance.

The other possibility is that the banking population may opt out of internet banking because they have other alternatives such as agency banking close to their homes, mobile banking, and the money transfer platforms.

Some of the respondents may also have been in a situation where the transactions they undertake in the bank do not necessitate the use of internet banking. For example, a large proportion of small and medium enterprises use banking for savings only. They do not transfer funds to other businesses or persons through the bank. Therefore, they would see a need for internet banking. There are also employees who only use their bank account for payments of their salaries.

There is also the possibility that some of the people using internet banking are so much into it that they rarely visit bank halls and therefore they may not have been captured by the study. There was no way of knowing who such persons could be.

5.5. Suggestions for future research

The variables in this study explained only 30.3% of the variance in adoption of internet banking which suggests that there are other factors that explain the rest of the variance. This study therefore suggests other studies to be carried out using different models to expose the other variables that could explain other variance in adoption of internet banking by bank customers in Kenya.

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APPENDIX I: Letter of Introduction to Research Participation

Title of Research: Factors Influencing Customer Adoption of Internet Banking in Nairobi

Dear Participant,

I invite you to participate in the above titled research. I am currently enrolled in the Masters of Commerce Program at Strathmore University School of Management and Commerce and I am in the process of writing my Master's Thesis, in partial fulfilment of the requirement of the MCOM Degree.

Please find attached herein a questionnaire that has been designed to collect information mainly on two subtitles; Part I contains questions of a general type and Part II contains questions relating to factors that influence adoption of internet banking.

Your participation in this research project is completely voluntary. There are no known risks to participation beyond those encountered in everyday life. Your responses will remain confidential and anonymous. Data from this research will be kept under lock and key and reported only as a collective combined total. No one other than the researcher will know your individual answers to this questionnaire.

If you agree to participate in this project, please answer the questions on the questionnaire as best you can. It should take approximately six minutes to complete. Please return the questionnaire as soon as you have completed answering all the questions. Thank you for your assistance in this important endeavour.

Sincerely yours,

Agnes Njeru.
Student Researcher.

APPENDIX II: Questionnaire

The researcher requests for your answers in the following questions. Your answers will help to examine the factors that influence adoption of internet banking in Nairobi.

Instructions: Please answer all questions

PART I: GENERAL INFORMATION

Please tick the box that best suites you.

1. Please tick:
   - □ Male
   - □ Female
2. Please indicate the range of your Age:
   - □ 18 – 30 Years
   - □ 31 – 40 Years
   - □ 41 - 50 Years
   - □ 51 – 60 Years
   - □ 61 and Above Years
3. Which of the following best describes the level of your education?
   - □ Below Diploma
   - □ Diploma
   - □ Bachelor's Degree
   - □ Master's Degree
   - □ Doctorate Degree
4. Which of the following best describes the level of your monthly net Income?
   - □ Ksh. 50,000 and Below
   - □ Ksh. 50,001 – Ksh. 100,000
   - □ Ksh. 100,001 – Ksh. 300,000
   - □ Ksh. 300,001 – Ksh. 800,000
   - □ Above Ksh. 800,000
5. How long have you been using a computer?
   - □ Never used
   - □ Below 1 Year
   - □ 1 – 2 Years
   - □ 3 – 5 Years
   - □ Above 5 Years
6. How long have you been using internet?
   - □ Never used
   - □ Below 1 Year
   - □ 1 – 2 Years
   - □ 3 – 5 Years
   - □ Above 5 Years

7. Do you use internet banking?

   □ Yes □ No

8. If your answer in (7.) above is Yes, how long have you used internet banking?

   □ Less than 6 months □ 2 - 3 Years

   □ 6 months - 1 Year □ Above 3 Years

   □ 1 – 2 Years

PART II: ADOPTION OF INTERNET BANKING

Please tick the box that best suites you.

9. In the last one month, approximately how many times have you used Internet Banking?

   □ Not used at all □ 7 – 10 times

   □ 1 – 3 times □ More than 10 times

   □ 3 – 6 times

10. I am interested in learning about more Internet Banking Services than I already use

    □ Strongly Disagree □ Agree

    □ Disagree □ Strongly Agree

    □ Neutral

11. I intend to adopt more internet banking services once I am ready

    □ Strongly Disagree □ Agree

    □ Disagree □ Strongly Agree

    □ Neutral

12. I use internet banking to perform the following transactions: (please tick as many as suites you)

    □ Cash Withdrawal □ Account Opening

    □ Cash Deposit □ Other (please specify)……

    □ Cheque Deposit ……

    □ Money Transfer

    □ Balance Enquiry

PART III: FACTORS INFLUENCING ADOPTION OF INTERNET BANKING

- Please tick the most appropriate responses that best describe your perception
- Answer ALL questions

	Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
Perceived Risk Facets					
People I regard as important may disapprove my use of internet banking					
My social standing will diminish if I adopted internet banking					
Learning how to use Internet Banking would be a waste of my time					
logging into the internet banking site consumes a lot of my time					
I feel that internet banking offers high security risk					
I fear that a hacker may gain unauthorized access to my account online					
I may fraudulently lose my money while using internet banking					
I feel that I may lose money due to a wrong online transaction					
There is high potential for monetary loss due to account misuse					
There is a high chance of hidden costs associated with internet banking					
There is a possibility of the internet banking system malfunctioning					
The bank website may not work as intended					
The website may be unable to provide the desired service					
Diffusion of Innovation Factors					
Adopting internet banking will allow efficient banking					
Adopting internet banking is a faster way to perform banking transactions					
Adopting internet banking will provide a better option					
Internet banking is compatible with my lifestyle					
Adopting internet banking fits well with my finances					
Being able to try out internet banking is important in my decision to adopt it					

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I would be more likely to adopt internet banking if I am part of a pilot test					
I would have no difficulty telling people what internet banking is like					
Other customers using internet banking like using it					
I have observed other people use internet banking					
It is difficult to use Internet banking					
The internet banking site is frustrating					
Internet banking requires a lot of time and effort to learn and use					
Technology Acceptance Factors					
Using internet banking improves my performance					
Using internet banking makes life easier for me					
Learning how to use Internet Banking would be easy for me					
My interaction with Internet Banking is clear and understandable					
Planned Behavior Factors					
People who are important to me think I should adopt internet banking					
People whose opinion I value think I should adopt internet banking					
I am able to use internet banking					
I have the resources necessary to operate internet banking					
Attitude					
I would enjoy doing bank transactions via the internet					
I desire to know what more I can do through adoption internet banking					
Banking via the internet is satisfying					
It is nice to adopt internet banking					
My overall opinion towards internet banking adoption is that it is a great innovation					

Please list below any comments that you may have

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Kindly confirm that you have answered all questions.

Thank you for your time and participation

APPENDIX III: List of Commercial Banks in Kenya

1	ABC Bank (Kenya)	22	Guardian Bank
2	Bank of Africa	23	Gulf African Bank
3	Bank of Baroda	24	Habib Bank
4	Bank of India	25	Habib Bank AG Zurich
5	Barclays Bank of Kenya	26	Housing Finance Company of Kenya
6	Stanbic Bank	27	I&M Bank
7	Chase Bank Kenya (In Receivership)	28	Imperial Bank Kenya (In receivership)
8	Citibank	29	Jamii Bora Bank
9	Commercial Bank of Africa	30	Kenya Commercial Bank
10	Consolidated Bank of Kenya	31	Middle East Bank Kenya
11	Cooperative Bank of Kenya	32	National Bank of Kenya
12	Credit Bank	33	NIC Bank
13	Development Bank of Kenya	34	Oriental Commercial Bank
14	Diamond Trust Bank	35	Paramount Universal Bank
15	Eco bank Kenya	36	Prime Bank (Kenya)
16	Equity Bank	37	Sidian Bank
17	Family Bank	38	Spire Bank
18	Fidelity Commercial Bank Limited	39	Standard Chartered Kenya
19	First Community Bank	40	Trans National Bank Kenya
20	Giro Commercial Bank	41	United Bank for Africa
21	Guaranty Trust Bank Kenya	42	Victoria Commercial Bank
Representative offices of foreign banks			
43	HDFC Bank	47	JP Morgan Chase
44	Nedbank	48	Bank of Kigali
45	FirstRand Bank	49	Central Bank of India
46	Bank of China		

SOURCE: http://investmentnews.co.ke/features/list-commercial-banks-kenya/ Accessed on 10/01/2017