

# Advancing Technology and Financial Performance of Commercial Banks in East African Community Partner States

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**Abstract:** The main purpose of this study was to assess the effect of advancing technology on financial performance of Commercial Banks in East African community partner States, specifically; The study was guided by the following specific objectives: the role of Mobile advancing; the importance of Internet advancing; the impact of Electronic Card advancing both on financial performance of Commercial Banks in East African community partner States. Different methods and methodologies were used during this study. The Stratum sample size strategy has been used to determine which number of banks per States member of East African Countries should be obtained Data; with Stratum sample size mathematic formula, equally EAC States members provided their financial Institutions (Banks) accordingly such as 3 out of 12 Commercial Banks in Rwanda; 10 out of 48 Commercial Banks in Kenya; 8/35 Commercial Banks of Tanzania; 6 out of 25 Commercial Banks in Uganda; 5 out of 22 Commercial Banks in South Sudan and finally 2 out of 10 Commercial Banks in Burundi with the total Commercial Banks of 34 out of 152 were visited

with an error of 15% and confidence coefficient of 85%.

In this Study, the researchers brought out different interrogations on the Public part that providing additional energy to upkeep environment understanding on the level contributed technology advancing on achieving the expected customers and Banks Profitability and satisfaction; growing of Capital adequacy; availability of the Asset quality; customer and Banks Liquidity services and Risk management control of Commercial Banks.

In the results found, 100% of the respondents confirmed that all the Commercial Banks in East African Community partner States are using mobile advancing system and more than majority 76% demonstrated that technology advancing system are contributing a lot on the Financial performance of Commercial Banks and a model on the best practices of using technology advancing in enhancing financial performance was determined by researchers that will continue being refer in East African community partner States.

**Index terms:** Mobile advancing; e-commerce advancing and banking Instruments advancing

## 1 Introduction

The 3<sup>rd</sup> revolution came out with new possibilities in terms of information system access and Availability simultaneously, introducing new challenges in protecting sensitive information from intruders while making it available to others. Commercial Banks is one of the segments that the technological development is supervised closely and used widespread develop new component of products and services for advancing market as it's assuming to implement its activities in different financial markets.

Information communication Technology based on applications such as internet advancing, mobile advancing, telephone advancing, automated teller machine (ATM) and Point of Sale (POS) network brings significant advantages to the economic performance of the Commercial Banks in the quickly delivery of existing Sets products and service, (Ilyas A. et al. 2015).

Theoretical and historical perspective on the Commercial Banks took stages of instigating technology advancing facilities at mid-1990s, while consumers were under hesitant to conduct financial transactions over the web; it took widespread adoption of electronic commerce, based on trailblazing companies such as America Online, Amazon.com and eBay, to make the idea of paying for items online extensive, (Sameni, K. et al. 2008). By 2000, 80 percentage of United States, Europe and few countries of emerging economy Countries started to bid technology advancing facilities. During the said period at least 550 Commercial Banks of these continents became the first tiers to top more than 6 million online banking customers, more than 40 percent of its customer base. In comparison, larger national institutions, such as Citigroup claimed 4.2 million online relationships globally, while J.P. Morgan Chase estimated it had more than 750,000 online banking customers, (ibid. 2008). As the evolution of online advancing continued, it slowly began to gain popularity in e-commerce. When big-name banks began to offer online products and services, internet advancing seemed to gain legitimacy for consumers and assisting the economic performance of their interim of providing the necessary. By 2000, online advancing had become mainstream in the large world business, (Sameni, K. et al. 2008).

According to Steven (2002), demonstrates that the advancing engineering in 21<sup>st</sup> century runs in a complex and competitive environment branded by the changing circumstances and very unpredictable economic climate in African, particularly the said Commercial Banks. Information and Communication Technology (ICT) is like as was the main tools at the Centre of this change curve of technology Advancing System in Africa today. As for Sarah S., et al. (2012), added that Advancing sector revolution introduced at the beginning of the last decade

have contributed to a sharp acceleration in credit to the private sector across the East African Community State member in recent years supported with introduction of technology advancing as strategy that should continue backing the achievement of their both Financial Institutions and Consumers in terms of financial performance of their activities across the region and successfully implementation measures to liberalize state-controlled advancing (banking) systems, restructure loss-making institutions, write off nonperforming loans, and improve governance and financial sector supervision.

This scientific research study has been provided the Problem Intention which could be based on during the theories and model created on the best practices which should be referring on the success of those Commercial Banks intent to their financial performance with precise impartial to undertake such as the role of Mobile advancing, the importance of Internet advancing and lastly the impact of Electronic Card advancing by positioning the operators of the said System. Of course scholars carry out this study because there are serious critical snags on the Nations (population) on the regional such as Poor understanding (Academic level); Careless (Negligence) and Resistance on change which push majority of these population keeping their currency (money) home-based; knowledge and habitual capacity on using electronic material is critical, electronic Equipment insufficient, internet connection low (more time out of services) and Service delivery by the technology advancing internet also squat.

## **2. Literature reviews**

Diverse theories and models related to this prose review were founded on to file the conceptual relationship that should be escalated between technology advancing and financial performance of Commercial Banks in East African community member States. This assessment has been assisted the researchers distinguish what were the results from others done (scholars) vis a vis on the said area as theoretical review brought it out and their observation reviews were striking the researchers' specific target.

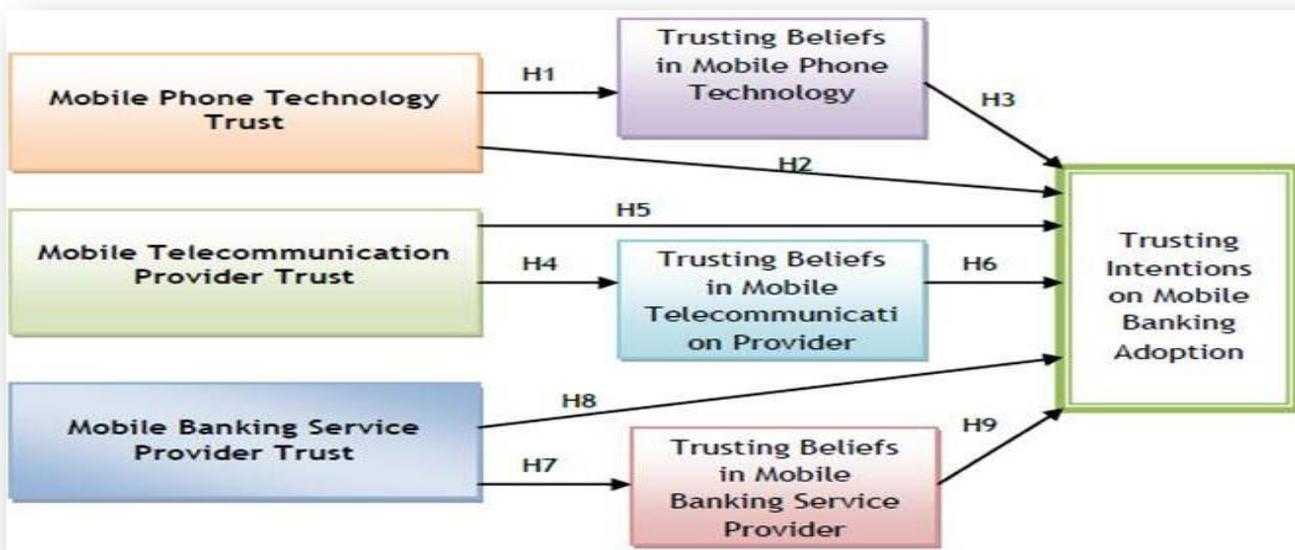
### **2.1 Theoretical and empirical framework**

In this Study, the researchers were based on theories from various scholars which backed them on determine the relationship that could exist between technology advancing and financial performance of the Financial institutions activities in east African community states member in particular, the world affairs in general. This study has been supported by the following theories and models on technology advancing amenities such as:

#### **2.1.1 The revenue model for mobile advancing and payments by Ben S. et al. (2011)**

Different revenue models were created to advancing out the mobile advancing and payments as was illustrated by Ben S. et al. (2011). Those models as Revenue model are Versioning and packaging: Their research suggests that 76% of the youth market should pay monthly fee of \$5 to \$8 for a functionally rich mobile advancing service. This service must include Informational, Transactional and Interactive services. Transaction pricing: Transactions relate to any number of specific events that customers initiate proactively. This may be payments (retail purchases, remittances, bill payments, etc.), share trading, Short Message alerts, ATM withdrawals, etc. and final Mixed pricing: as combination of both revenue models and is used extensively by mobile network operators. This revenue model relies on a lower package price for basic services and the opportunity for customers to purchase Bolton's.

**Figure 2.1: The revenue model for mobile advancing and payments**



*Source: The revenue model for mobile advancing and payments by Ben S. et al. 2011*

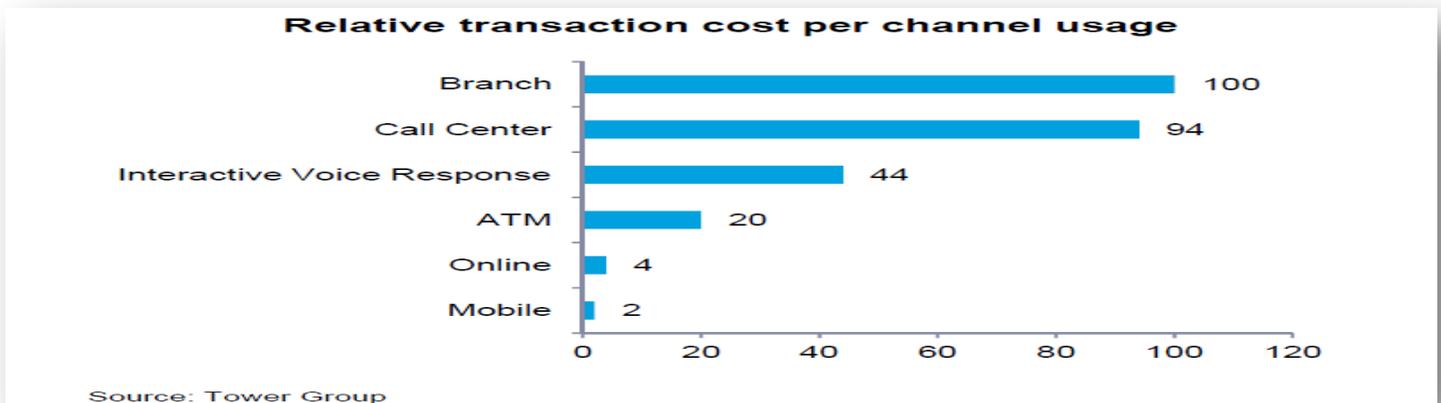
As for Simpson (2002) confirmed that the Pay-by-Phone Systems should assist the customers on the collaboration with their Commercial Banks and backed by the instructions to pay certain bills or to transfer funds between accounts; Direct Deposit assist the customers make specific deposits, (like pay checks and Social Security check and other benefits) to his/her account on a regular basis, its assisting the customers to pre-authorize direct withdrawals that recurring bills (like insurance premiums, mortgages, utility bills, for Consumers) which are paid automatically. Being cautious before the customer pre-authorize direct recurring withdrawals to pay companies he/she isn't familiar with; funds from your bank account could be withdrawn

improperly. Also monitor his/her bank account to ensure that direct recurring payments from her/his account to others is for the correct amount, (Simpson, 2002).

For Brian, J. et al. (2009), approximately exposed that 10% of mobile phone users conduct some advancing transactions by phone. Chief among these users are the members of Generation Y, who were born between 1979 and 1994. Also known as “millennials,” these youngest adult consumers represent the fastest growing segment of today’s workforce and 25% of the global population:

- ✚ Early technology adopters: Generation Y consumers are digitally sophisticated and hyper connected to one another. Half send an average of 50 text messages per day, 97% are active on Facebook and other social networking sites and 80% are active online advancing users Smartphone users, including many Generation consumers, are three times more likely than consumers with traditional feature phones to use mobile banking and more importantly are significantly more active user’s behaviour that translates into greater loyalty, stickiness, and, eventually, stronger advancing relationships.
  
- ✚ Significant earnings capacity: While Generation Y consumers currently earn approximately \$215 billion annually, their annual income is expected to reach \$3.4 trillion by 2018 and eclipse baby boomers’ earnings additionally; millennials are expected to inherit more than \$1 trillion over the next decade making them an attractive target market with an increased appetite for advancing services.
  
- ✚ High growth/high potential market: In the United States, approximately 20 to 25 million Generation Y consumers will potentially become new advancing customers over the next five years

**Figure 2.2: Relative transaction cost per channel usage**



As conclusion we could say that based on the graphic bellow, the cost of processing a transaction via mobile phone can be as much as 10 times lower than via an ATM and as much as 50 times lower than via a branch that play a vigorous role on the financial performance of Commercial Banks in East African community member States.

### 2.1.2 Internet advancing acceptance model: Cross-market examination by Bander, A. et al. (2010)

The importance of loyal customers to business survival represents a well-known truism. The Internet has expanded horizons for businesses worldwide, especially e-services. Because of the intangible, informative nature of banking, banks are efficient users of online technology. Banks strive to understand customers' e-behaviours worldwide, though much research focuses on industrialized countries, such as the United Kingdom (UK) and United States. The behaviours of consumers in many other countries, even those with massive economies, such as Saudi Arabia, the world's top oil exporter with the 25th Ranking in terms of gross domestic product, remain uncertain, especially online.

#### 2.1.2.1 Technology Acceptance Model

User acceptance remains a barrier to the success of new information technologies (IT). In an attempt to explain this; Davis (1989) introduced TAM as an extension of TRA (Fishbein And Ajzen, 1975), based on the attitude-behaviour paradigm from cognitive psychology. Davis (1989) argues that people adopt an application primarily because of the functions it performs and secondarily because of the ease or difficulty associated with making

the system perform these functions. The model provides a basis for tracking the impact of external factors on internal beliefs, attitude, and behaviour (Davis et al., 1989).

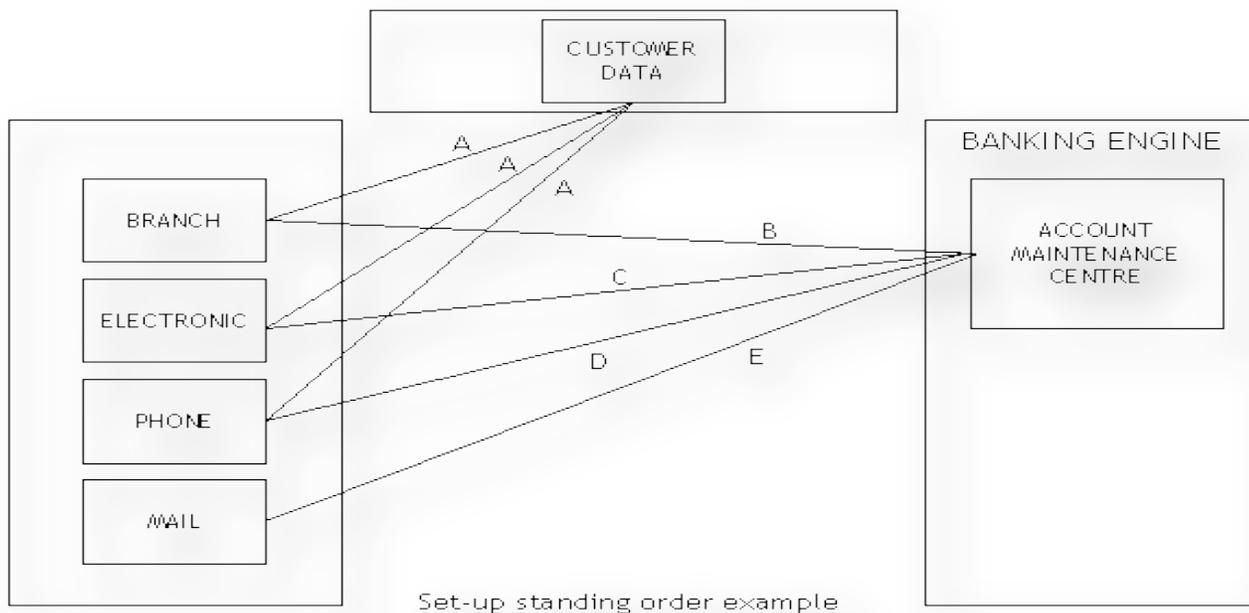
### 2.1.2.2 Theory of Planned Behaviour

Theory of reasoned actions is ill-equipped to predict situations where people possess low volitional control. In the TPB, Ajzen (1991) incorporates perceived behavioural control (PBC) as an antecedent of behavioural intentions to overcome this limitation. Therefore, in the TPB, a person's performance of certain behaviour depends on his or her intention toward that behaviour; intention in turn relies on attitudes, subjective norms (SN), and PBC.

### 2.1.2.3 Trust component on Commercial Banks

Trust is at the heart of all kinds of relationships (Morgan and Hunt, 1994). Definitions and conceptualization vary with disciplines, such that psychologists view trust as a personal trait, sociologists consider it a social construct, and economists see it as an economic choice mechanism (McKnight and Chervany, 2002). In the social psychology realm, Rousseau et al. (1998, p. 394) define trust as "perceptions about others' attributes and a related willingness to become vulnerable to others." In this sense, consumers might not use e-commerce because they lack trust in Internet businesses (Grewal et al., 2004).

**Figure 2.3: Internet advancing acceptance model**



*Source: Internet advancing acceptance model by Bander, A. et al. 2010)*

As for Simpson (2002) demonstrated the performance of internet advancing for these services to take place, customer must have an agreement with his/her Bank that should assist him/her to make the said transfers; Personal Computer advancing gives the customer handle many advancing transactions via his/her personal computer. For instance, customer may use his/her computer to view his/her account balance, request transfers between accounts, and pay bills electronically.

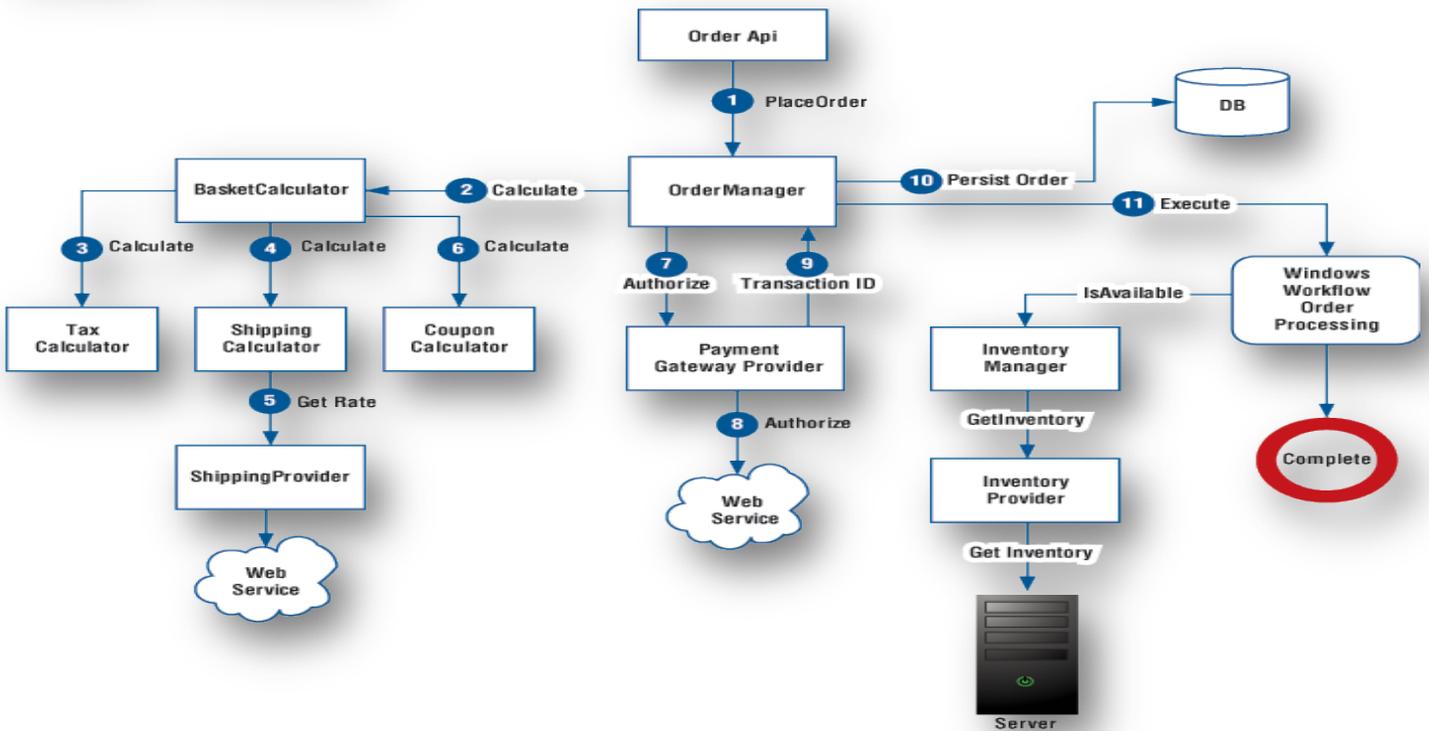
### **2.1.3 Cash, Check or Bank Card? The effects of transaction characteristics on the use of payment instruments by David, B. et al. (2006)**

Recent empirical investigations support the view that the substitution of electronic for advancing based on the systems can reduce the social cost of a financial institutions' payment system. Humphrey et al., (2003), for instance, note that "if a country moves from a wholly paper-based payment system to close to an all-electronic system, it may save 1% or more of its GDP annually once the transaction costs are absorbed". However, people are not necessarily prepared to adopt and use electronic payment systems. The failures of several electronic purses in Europe, for instance, are well documented (Hove, 2004) even if these payment instruments can be theoretically less costly (Shy and al. 2002). Understanding the reasons why people adopt and use electronic payment instruments can thus become a primary concern for advancing and monetary authorities. Why do people still prefer to use cash? Why are checks sometimes preferred to bank cards to settle transactions? What are the factors that influence the use of a payment instrument?

Empirical investigations on the choice of payment instruments are relatively recent. Two main groups of empirical studies may be commented on. A first group of contributions attempts to analyze the influence of particular effects on the use of payment instruments or the specific use of payment instruments such as electronic payment systems. For example, the works of Mantel (2000), Stavins (2001) and Hayashi and Klee (2003) highlight the role of socio-demographic and technological factors on the propensity to use electronic payment systems or the probability of them being used. Mantel (2000) proposes a framework to describe why consumers pay bills electronically. Using US national survey data, the author shows that wealth, personal preferences and certain demographic factors are significant to explain the use of electronic bill payments.

### **Figure 2.4: Cash, Check or Bank Card model**

## Order Process



Source: Cash, Check or Bank Card model by David, B. et al. 2006

### 2.1.4.4 The current situation of the real e-advancing on financial performance of Commercial Banks

First of all, the bank must fully understand and appreciate the fact that the advancing industry now exist, in a global village; must therefore strive to provide local and global advancing services using the infrastructure of the global village and Most Current E-advancing applications should use the internet. According to Any awaokoro, (1999), The advantages of on line advancing are in providing convenience and flexibility for customers, Some online advancing allows customers to get current account balances at any time; Customers do not need to wonder whether a check of has cleared or a deposit has been posted. At the click of a button, customers can easily check the status of their current savings and money-market accounts through online advancing; Banks can provide immediate account enquires or statements online for customers (Casalo et al, 2007).

### 2.1.4 Empirical framework

#### **2.1.4.1 The role of Mobile Advancing on financial performance of Commercial Banks**

According to Hamid R. D. (2012), illustrates that mobile advancing is growing at a remarkable speed and it is bound to further grow in a significant way in the near future; The field of mobile payments and mobile advancing is not only new and fast evolving in East African community member States, but also sits at the overlap of several regulatory and legislative domains those of advancing and telecommunication which substantially raises the risk of coordination failure, where legislation or regulatory approaches are inconsistent or contradictory. This is creating considerable uncertainty about the appropriate regulatory response that must be established and also what supervisory regime applies to the various activities involving banks and non-banks. As for Barnabas A. (2014) added that Mobile money transactions have presented regulatory challenges that could potentially hinder maximum development benefits. This is because firstly, mobile money blurs the traditionally distinct and independent sectors of regulation (most notably, the telecommunications and financial banking sectors); It often involves an overlap between multiple ministries and Government agencies, thus adding to the complexity of oversight needed.

Within their study done by Donner *et al.* (2008) found out that mobile banking and economic development in East African Community member states where they sought to link adoption can be impacted and used; the study established that through offering a way to lower the costs of moving money from place to place and offering a way to bring more users into contact with formal financial systems, m-banking/m-payments systems could prove to be an important innovation for the developing world. However, the true measure of that importance required multiple studies using multiple methodologies and multiple theoretical perspectives before answering the questions about adoption and impact.

Tiwari, *et al.* (2006) added that since mobile banking started to be considering as a business strategy in East African community's member states: these were impacted the technologies advancing with the customer behaviour and its implications role on these Financial Institutions (Banks). The scholars sought to examine these opportunities on these Financial Institutions (banks) to generate revenues by offering value added; innovative mobile financial services while retaining and even extending their base of technology-savvy customers.

#### **2.1.4.2 The contribution of Internet advancing on financial performance of Commercial Banks**

According to Stephanie, K. et al. (2015) revealed that the Internet advancing (e- advancing) is the use of internet and telecommunication networks to deliver a wide range of value added products and services to bank customers; Internet advancing includes importing data into personal accounting software. Some online banking platforms support account aggregation to allow the customers to monitor all of their accounts in one place whether they are with their main bank or with other institutions. Internet banking is called transactional online advancing, because it involves provision of facilities such as accessing accounts, funds transfer and buying financial products or services online. The Internet also helps banks penetrate other financial markets without requiring their physical presence in those markets. The widespread availability of Internet advancing is expected to affect the mixture of financial services produced by banks, the manner in which banks produce these services and the resulting financial performances of these banks, (ibid 2015).

With the emerging wave of information driven economy, the Financial Institution (banks) industry in Kenya, Uganda, Tanzania and Rwanda ones of the East African community member States have inevitably found themselves unable to resist technological indulgence. This has led to a boom in development of mobile advancing laying down a strong base for low cost advancing and growth of mobile phone use in rural areas of those Countries member states of EAC. Standard Chartered in 2009 launched its mobile banking in seven markets in Africa; In the Kenyan market it offers a number of services on a unique, user-friendly platform called Unstructured Supplementary Services Data (USSD) and is only available on GSM carrier networks which enable customers to access banking in real time, anywhere in the world, through their mobile phones.

#### **2.1.4.3 The impact of Electronic Card advancing on financial performance of Financial Institutions (Banks)**

Fox and Beier, (2006) shows the impact of Electronic Card for Fox and Beier, (2006) illustrated the impact of Debit Card on Purchase or Payment Transaction let you make purchases or payments with a debit card, which also may be your ATM card. This could occur at a store or business, online or by phone. The process is similar to using a credit card, with some important exceptions (While the process is fast and easy, a debit card purchase or payment transfer's money; fairly quickly; from your bank account to the company's account. So it's important that you have funds in your account to cover your purchase. This means you need to keep accurate records of the dates and amounts of your debit card purchases, payments, and ATM withdrawals. Also be sure you know the store or business before you provide your debit card information to avoid the possible loss of

funds through fraud. Your liability for unauthorized use, and your rights for error resolution, may be different for a debit card than a credit card (Simpson 2002).

Agboola (2001) concludes that electronic banking has tremendously improved the services of the financial institution (banks) of the East African community member States on their financial performance on their customers in region and out of the region. Siam (2006) examined the effect of electronic banking on bank's profitability in Jordan. The population of the study included all working banks in Jordan which have sites on the internet for the periods of 1999-2004. The result from the data analysis that was gathered from the study instrument (questionnaire) showed that there is a correlation with statistical significance between electronic banking and banks profitability. Showing a negative effect in profitability in the short run and a positive effect in profitability in the long run. Thus, managers and banks employees in the area prefer their banks to expand their electronic operation in servicing customer but not converting all banks to total electronic banks.

#### **2.1.4.4.1 Internet component on Commercial Banks**

Fox and Beier, (2006) Most of the applications mentioned involved the use of internet, E- advancing is more than just Internet advancing in the still evolving e-climate in the economy; it involves using the net to Exploit new opportunities by transforming products and markets and business processes (E- advancing also means developing new relationship with customers, regulatory authorities', suppliers and advancing partners with digital age tools, for example, it requires all understanding. Customer/bank relationships will be more personalized resulting in novel modes of transaction processing and services delivery. E-Advancing is essentially about banks using new age methods and tools to expand into new advancing markets and grows. Creating a corporate online presence for your bank should be more than just buildings a website. It should be about building a web business for your bank, to do this effectively the people in charge, i.e. the CEOs not just IT directors and managers must have a deep knowledge of what E- advancing culture demands (Clive, 2007).

#### **2.1.4.4.2 E-business component on Commercial Banks**

According to Hampton-Sosa et al. (2005), the Information Technology backed by E-business or E-commerce is not about routine information management or automation, it is about using these unique tools to create opportunities, create new markets, new processes and growth or increase the creation of e- wealth (E-advancing monitors the environment local and global with the aim of understanding and mastering its environment. E-Advancing thus involves collaboration (local and international) on payments systems, cashless transactions, digital cash and other electronic based projects.

As for Usman (1998), added that Information Technology can be seen as other immense potentials than can be realized if bank management and staff, not just the systems staffs are sufficiently literate and aware, and presently the banking industry still has a lot to do in terms of training staff; The speed of change together with the need for proper orientation for the e-world makes training even more of a necessity. For E- advancing to be effective, an area that must be addressed is security, for any Information System based service associated with e- advancing increases the need for security, in e- advancing the core security areas should be addressed. A key concern is that of privacy. Business on the net cannot be undertaken without addressing the privacy concerns of people you do business with. It requires the existence of a privacy policy. No customer wants to click away to a negative balance. Security in online banking is typically provided through the use of an electronic Identity (EID) and password.

For Hampton Sosa, et al. (2005), these and other security measures must be effective to prevent not only the breach of privacy, but other security concerns like the alteration of data. In conclusion to be a true E- advance each bank must identify its own unique targets, focus and style. Banks needs to realize that E- advancing is more than simply banking on the internet; E- advancing is more than having a web-site, E- advancing is about building a web business for your banks.

### **2.1.5 Financial Performance of Commercial Banks**

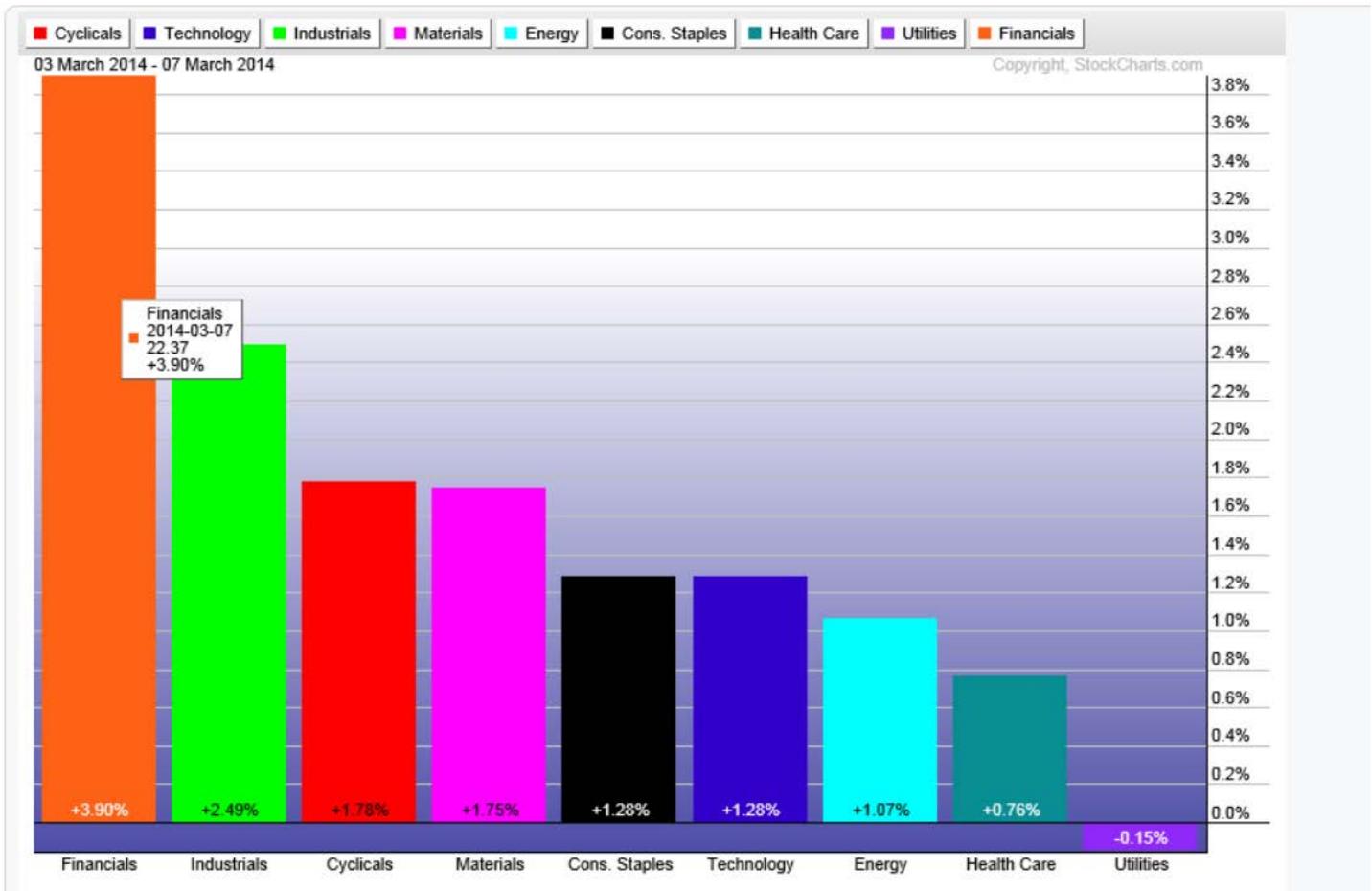
The Financial institutions should organize its activities success in areas related to its resources, obligations and overall market strength. Many corporate operators, Commercial Banks included take regular stock on either a formal or less formal basis of general profitable presentation of their corporation to make sure that it remains on the right track economically

Several studies (Elyor (2009), Uzhegova (2010)) have used CAMEL to examine factors affecting bank profitability with success. CAMEL stands for Capital adequacy, Asset quality, Management efficiency, Earnings performance and Liquidity. The system was developed by the US Federal Deposit Insurance Corporation (FDIC) for “early identification of problems in banks“ operations” (Uzhegova, 2010). Though some alternative bank performance evaluation models have been proposed, the CAMEL framework is the most widely used model and it is recommended by Basel Committee on Bank Supervision and IMF (Baral, 2005).

Capital adequacy refers to the sufficiency of the amount of equity to absorb any shocks that the bank may experience. The capital structure of banks is highly regulated. This is because capital plays a crucial role in

reducing the number of bank failures and losses to depositors when a bank fails as highly leveraged firms are likely to take excessive risk in order to maximize shareholder value at the expense of finance providers.

**Figure 2.5: Intermediate and Long Term Investing employing Technical and Fundamental Analysis to maximize performance**



*Resource: financial performance graphic by Technical Investor, 2011*

The sector of financial performance demonstrates its importance on the life cycle of the human being in these days where everyone can touch or affect by an indicator come from the financial aspect more than other component. The researchers remain rather unenthusiastic about the risk to reward at current stock market prices, as how much higher can them go without a meaningful correction. However the researchers advocate a balanced approach for investors where one doesn't need to sit in cash and listen to the doom and gloom, but also doesn't go all in with all the leverage and beta one can find, either.

According to world trade public Organization forum (2009) and Orio G. et al. (2010) demonstrates how the performance of a finance component is usually measured in terms of the achievement of profitable goals or objectives; These objectives can be long term, such as sustainable growth and development, or short term, such as the stabilization of the economy in response to sudden and unpredictable events, called economic shocks. The economic indicators measure on macro-economic variables that directly or indirectly enable economists to judge whether economic performance has improved or deteriorated; Tracking these indicators is especially appreciated to policy makers, both in terms of assessing whether to intervene and whether if the intervention has worked or not.

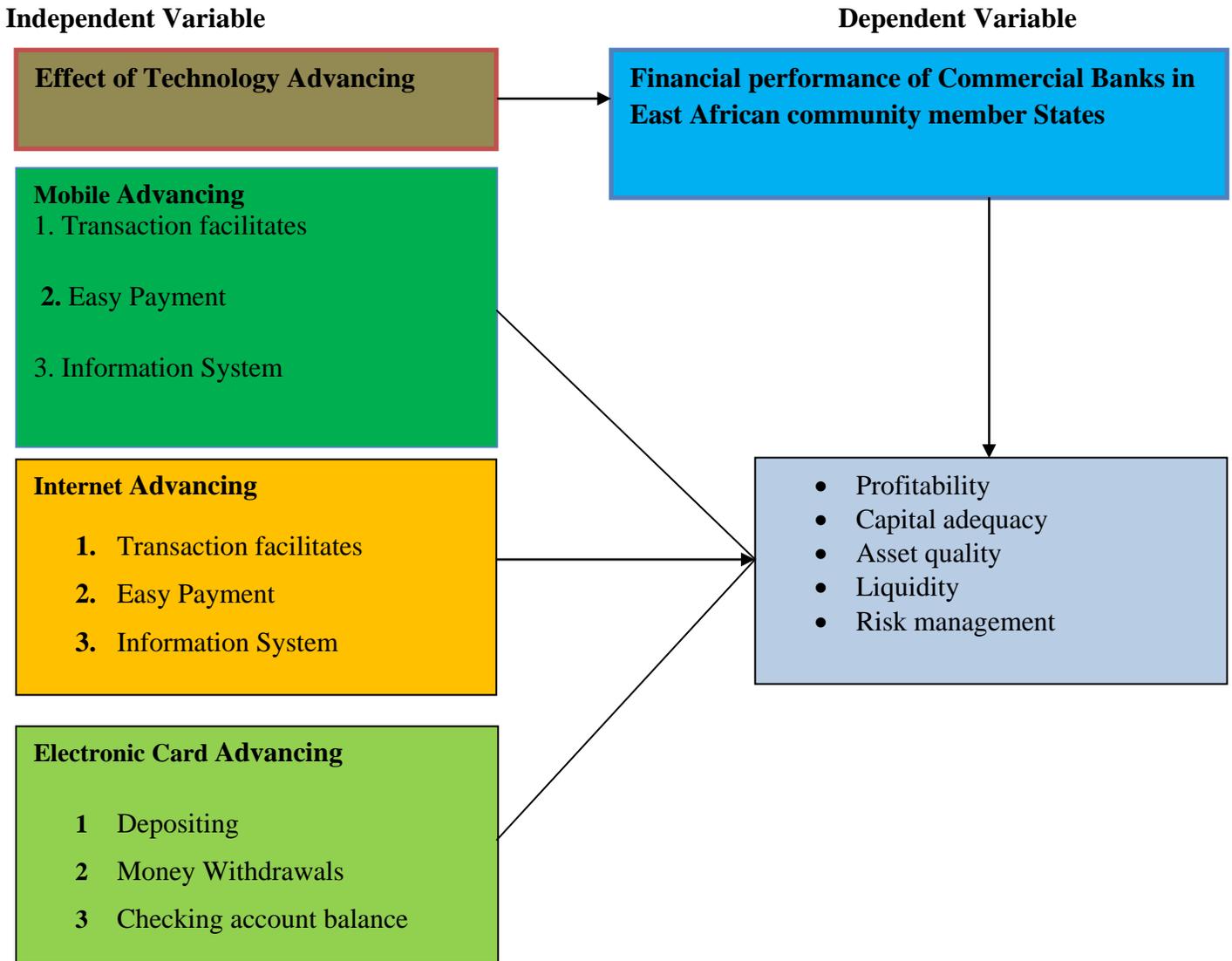
Those useful indicators are the levels of real national income, spending, and output. National income, output, and spending are three key variables that indicate whether an economy is growing, or in recession. Like many other indicators, income, output, and spending can also be measured in per capita (per head) terms; Growth in real national income; the Investment levels and the relationship between capital investment and national output; the levels of savings and savings ratios; Price levels and inflation; the Competitiveness of exports; the Levels and types of unemployment; the Employment levels and patterns of employment; The productivity of labour, which influences other economic variables, including an economy's competitiveness in international markets; Trade deficits and surpluses with specific countries or the rest of the world; the Debt levels with other countries; the proportion of debt to national income; The terms of trade of a country; the purchasing power of a country's currency; Wider measures of human development, including literacy rates and health care provision. Such measures are included in the Human Development Index (HDI) and lastly the Measures of human poverty, including the Human Poverty Index (HPI), (ibid 2010).

## **2.1.6 Models on the best practices**

### **2.1.6.1 Conceptual framework**

The main variable of interest is the study of dependent variable growth of corporate entrepreneurs which is measured by amount of credits from microfinance, good working environment, to meet customer satisfaction, to follow government policy, to establish strategic business plan, monitor and evaluation of business performance. Apart from this, organization, operating in secured environment, access to trainings and then forming joint ventures have seen as important to promote growth. The relationship between dependent and independent variable is shown as follow

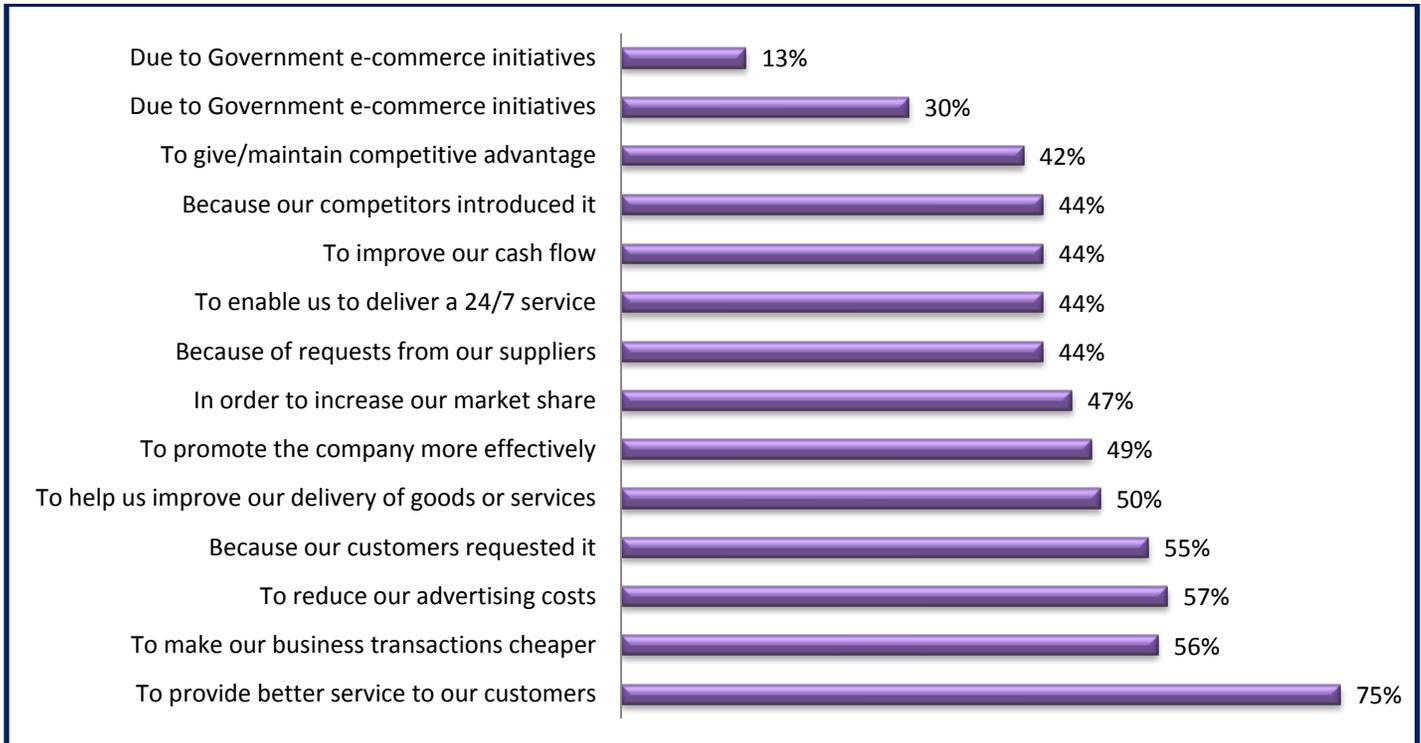
**Figure 2.6: Conceptual framework for understanding the relationship between electronic Advancing and economic performance of Commercial Banks in East African community member States**



*Source: the researcher own inspiration, 2017*

In this Scientific research, different variables such as the independent variables also called manipulation were used to back up the theories and practices that should relate to the pillars like Electronic advancing; Mobile advancing; Internet advancing and E- Card advancing instruments that will positively impacting the financial performance of commercial banks with indicators like Profitability, Adequacy of capital, Asset Quality, Liquidity and Risk Management. The survey allowed the identification of these variables interacts with each other and showed how they will contribute to the economic performance of commercial banks.

**Figure 2.7: Main reasons for using e-commerce**



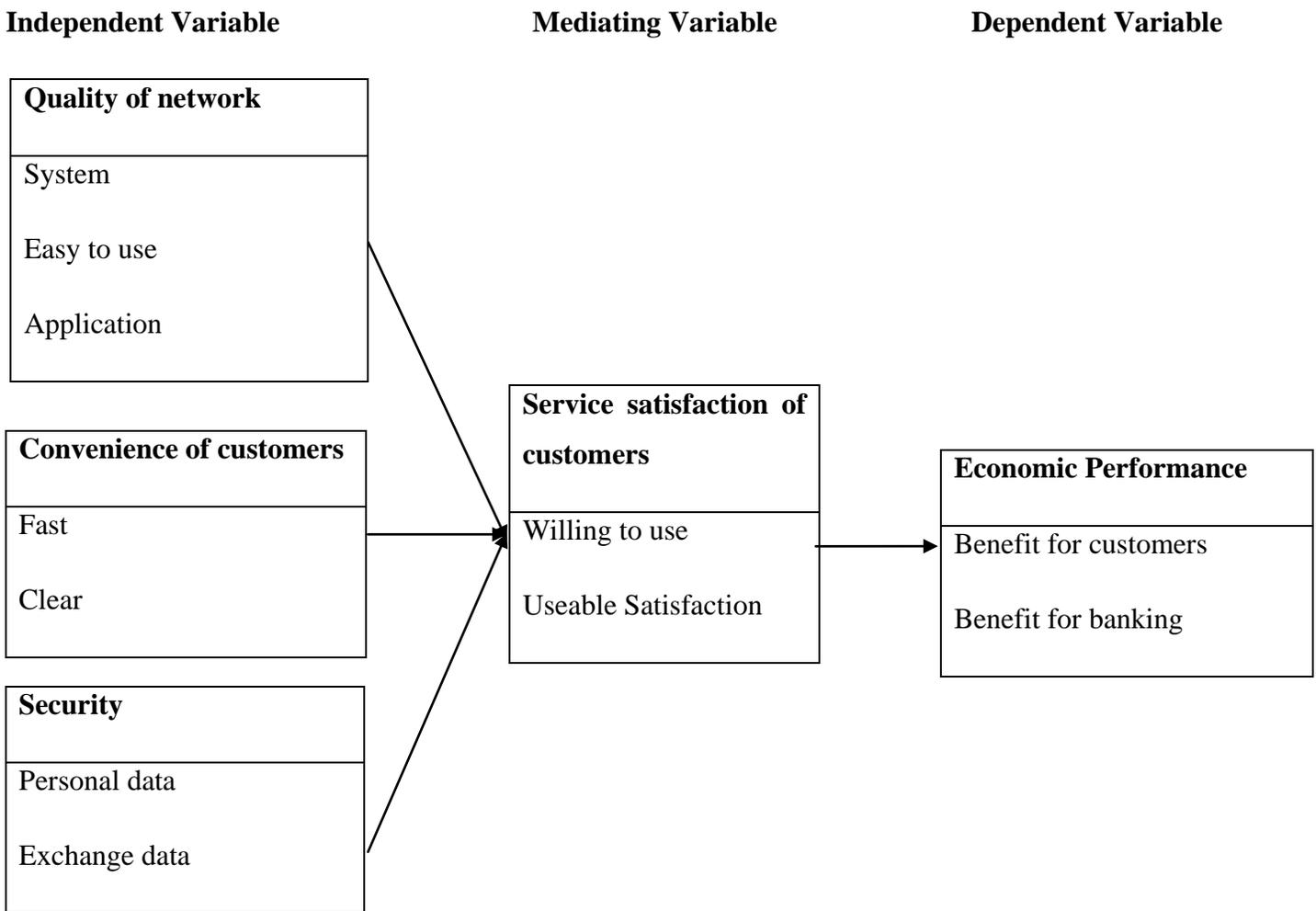
*Source: Sensis e-business report in Australia*

### 2.1.5.2 Scientific Models

After deep analysis on the said study, a practical model that should assist the role electronic banking on finance and economic performance of commercial banks in East African community partner States was created to be applied by different actors from the commercial banks such as managers, direct implementers and customers in terms of financial transaction and economic management. The adoption from D&M is success model has exceeded all estimation. According to a citation search in the summer of 2002, more than 280 refereed papers in journals and proceedings that have referenced the D&M model during the period 1993 to middle of 2002 (Delone& McLean, 2003). This number shows that the model is successful and can be adopted for other researches.

Follow the D&M IS Success Model (1992), we develop the framework as following

**Figure 2.8: Research model for the factors affecting the performance of internet advancing at commercial banks**



### 3. Materials and Methods

The ethnicity variable in this study was based on the sample of the population working in Commercial Banks implementing daily activities in East African community member States. The study also had a sample of Single Banks. The participation in the study was voluntary and anonymous; The research designs of this study was applied Qualitative research paradigm as a systematic subject approach used to describe the Profitability, Capital adequacy, Asset quality, Liquidity and Risk management through specific approach which was a Case study that described in-depth the experience of one or more than one Commercial Banks in East African community member States with the method of direct observation and interaction on the subject. In the findings it was established that Mobile banking system, Internet Banking and Electronic Card advancing can have a significant impact on finance and financial performance of Commercial Banks in East African community member States. Different Data have been obtained from officials of the Commercial Banks on 12 Banks of

Rwanda; 25 Banks of Uganda, 42 Banks of Kenya, 35 Banks of Tanzania, 10 Banks of Burundi and 22 banks of South Sudan. In practice different tools have been used to support gears component with the following activities such as Selection of sample techniques, Develop research instruments questionnaires, Collection of data (the research has been used both primary and secondary data), data was Processed (using SPSS software which assisted on process) and analysis, interpretation and recommendations have been determined by the researcher.

### **3.1 Research approach**

#### **3.1.1 Qualitative versus quantitative research approach**

Qualitative and quantitative methods are two broad approaches to research, and are two research approaches often used in research studies. While quantitative research involves numerical representation and manipulation observation for the purpose of describing and explaining the phenomena that those observations reflect, qualitative research on the other hand involves non-numerical examination and interpretation of observation for the purpose of discovering the underlying meaning and pattern of relationship. Qualitative research emphasis the process and meaning that are not rigorously examined or measured, in term of quantity, amount of intensity or frequency. In contrast, quantitative study emphasis measurement and analysis of causal relationship between variables, not processes (Casebeer *et al.*2000). In quantitative research, variables and relationship are the central idea. Quantitative research is useful in providing detailed planning prior data collection and analysis, because it provided tools for measuring concepts, planning design stages and for dealing with population and sampling issues. In addition, a quantitative research approach utilizes a deductive model in testing the relationship between variables and to provide evidence for or against pre-specific hypothesis. Afterwards, our research has used both qualitative and quantitative research approaches. The study has been conducted in East African community member States with the Population study of Commercial Banks accredited with residence in East African community member States.

The Population, Sample size and Sampling technique study were focused on the officials of the financial Institutions (Banks) of different Member states of east African community such as Officials of the 3 commercial Banks out of 12 Banks of Rwanda; Officials of 6 commercial Banks out of 25 Banks of Uganda, Officials of 10 commercial Banks out of 42 Banks of Kenya, Officials of the 8 commercial Banks out of 35 Banks of Tanzania, Officials of the 2 commercial Banks out of 10 Banks of Burundi and finally the Officials of 5 commercial Banks out of 22 banks of South Sudan.

On Targeting population and sampling frame; the logic of qualitative research is concerned with in-depth understanding, usually working with small samples. Qualitative researchers are often interested in selecting a purposive or judgment sample. The type of purposive sampling is based on a particular research question as

well as consideration of the resources available to the researcher. A purposive sampling technique has been used to ensure that the practitioners in technology Banks and financial Performance of financial institutions are selected from the targeted populations to authoritatively present. The selection of experts has been based on two main criteria included: The responders' adequate knowledge in the area of technology advancing as well as financial Performance. The researcher will select people purposively from the targeted institutions to provide information about the study variables as illustrated in table 3.1 below. In research, there happens to be very difficult to study exhaustively the whole population because; it is costly and sometime impossible. In conducting this research, a sample has been drawn depending on whole population under study and scientific requirements. Then, stratified random sampling has been used in selecting sample. By using formula of Yamane (1967) with an error of 15% and with a confidence coefficient of 85%, thus, the sample size was obtained as follow:

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

Where, n= the sample size

N= the size of population (total financial institutions (banks) in East African Community member states)

e= desired level of precision (15%)

$$\text{Thus, } n = \frac{146}{1 + 146 * (0.15)^2} = 34$$

### 3.3.3.1 Proportional stratified sample size:

The proportional stratified sample size means that, the number of sampling units drawn from each stratum is in the proportion to the relative population size of that stratum.

Proportional stratified sample size is determined by the following formula:

$$n_h = \frac{N_h * n}{N}$$

### Table 3.1: Stratum sample size

Stratified random sampling is a method of sampling that involves the division of a population into smaller groups known as strata. In stratified random sampling, the strata are formed based on members' shared attributes or characteristics. A random sample from each stratum is taken in a number proportional to the stratum's size when compared to the population. These subsets of the strata are then pooled to form a random sample.

h	Stratum composition	$N_h$ (the population size for stratum h)	$n_h$ (sample size of the stratum h)
1	Rwanda	12	$n_{h1} = \frac{12*34}{152} = 2.68 \approx 3$
2	Uganda	25	$n_{h2} = \frac{25*34}{152} = 5.59 \approx 6$
3	Kenya	48	$n_{h3} = \frac{48*34}{152} = 10.43 \approx 10$
4	Tanzania	35	$n_{h4} = \frac{35*34}{152} = 7.80 \approx 8$
5	Burundi	10	$n_{h5} = \frac{10*34}{152} = 2.23 \approx 2$
6	South-Sudan	22	$n_{h6} = \frac{22*34}{152} = 4.92 \approx 5$
<b>Total</b>	-	152	34

Source: Primary data, 2017

### 3.4 Data collection

The data of this study were collected by using questionnaire which had been carefully structured to cover all information's needed which were able to answer the research question. The respondents to the questionnaires were the managers or people with authority within the bank.

### 3.5 Data analysis

Data analysis was carried out using quantitative methods through descriptive statistics and qualitative methods. Quantitative analysis involved numerical calculations on the observed data so as decipher what phenomena or relationship the observed values were indicating, while qualitative was based on reasoning with no numerical calculation and the ultimate objective was to get insight into the underlying reasons of an issue. The data obtained from the field was coded and entered into the computer and subsequently subjected to statistical analysis using the Statistical Package for Social Sciences (SPSS)

### 4. Results, Argument, Conclusion and Recommendations

The Facts and critical analysis done after collection of data by scholars on cases well identified with the purpose of provide the clarification on the objectives determined either by the scholars or any one from the private or public and come up with findings to be based on any measurement resolution

#### 4.1 Results, Argument

**Table 4.1: Distribution of banks by country**

Country	Number of Banks	%	Name of bank
Rwanda	3	8.8%	Ecobank
			BPR
			EQUITY RWANDA
Kenya	10	29.4%	ABC Bank(Kenya)
			Bank of India
			Citibank
			Commercial Bank Of Africa
			Credit Bank
			Habib bank
			Equity Bank Kenya
			Prime Bank Kenya
			Kenya Commercial Bank
			United bank
Tanzania	8	23.5%	Acess Bank Tanzania
			Amana Bank
			International Commercial Bank

			United Bank of Africa
			Bank of Africa Tanzania
			Citibank
			Ecobank
			Equity Tanzania
<b>South Sudan</b>	5	14.7%	CMESS
			ESS
			ICBSS
			KCBSS
			SSCB
			QNB
<b>Uganda</b>	6	17.6%	ABC Bank
			Bank of India
			Cairi International Bank
			Commercial Bank of Africa
			Ecobank Uganda
			Equity Bank Uganda
<b>Burundi</b>	2	5.9%	Fin Bank Burundi(Local and National)
			CRDB Bank Burundi(Local and National)
<b>Total</b>	<b>34</b>	<b>100%</b>	-

Source: Field data, 2016

The findings from table 4.1 shows that at least 29.4% of the Financial Institutions (Banks) from Kenya; 23.5% from Tanzania; 17.6% from Uganda; 14.7% from South Sudan; 8.8% from Rwanda and 5.9% from Burundi were chosen to be part of the sample size. Recall that the sample size of each stratum which were proportionate to the population and can give a significant funds that each stratum has the same sampling fraction.

**Table 4.2: Does your bank use mobile advancing that affect her economic performance?**

	Cases Included		Cases Excluded		Total	
	N	Percent	N	Percent	N	Percent
Yes	34	100%	0	.0%	34	100%

*Source: Field data, 2017*

The results from table 4.2 show that all (100%) respondents confirmed that their Commercial Banks in East African community member States are using mobile advancing system. The main reason that mobile banking is spreading among East African Member States is that most of these financial Institutions (banks) are initiated in the big cities and customers want to be facilitated on their business operation process.

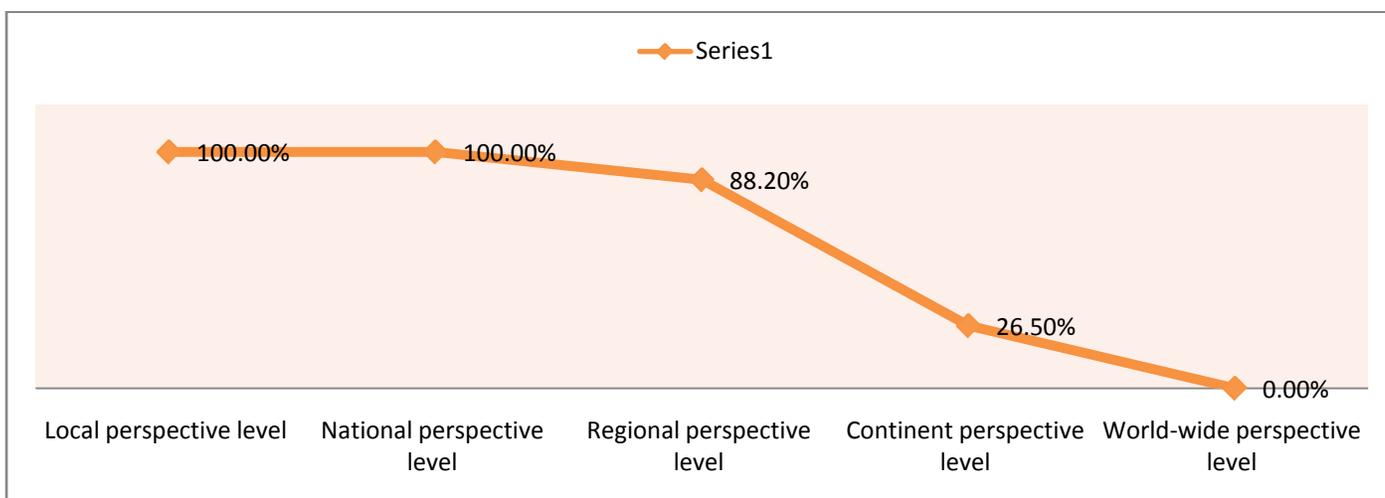
**Table 2.3: If yes, how is affecting its financial performance?**

Reason	Cases Included		Cases Excluded		Total	
	N	Percent	N	Percent	N	Percent
Quickly and easy service delivery	34	100.0%	0	.0%	34	100%
Increasing the institution's capital	23	67.6%	11	32.4%	34	100%
Decreasing of the cost and other changes	25	73.5%	9	26.5%	34	100%
Easy transfers on both banks and customers	26	76.5%	8	23.5%	34	100%
Motivating bank's financial activities	20	58.8%	14	41.2%	34	100%
By increasing deposit	21	61.8%	13	38.2%	34	100%
Motivating customers	22	64.7%	12	35.3%	34	100%

*Source: Field data, 2016*

The results from table 4.3 prove that all (100%) respondents confirmed that mobile money assist in quickly and easy service delivery, followed by 26 respondents represented by 76.5% in helpful in making easy transfers on both banks and customers, 25 respondents represented by 73.5% who confirmed that mobile money help in decreasing the cost and other changes, 23 respondents represented by 67.6% said that mobile money contribute in increasing the institution’s capital, 64.7% confirmed that mobile money motivate customers, 61.8% confirmed that it assist in increasing deposit, while 58.8% assumed that mobile money motivate bank’s financial activities. Mobile banking provides the customers to anytime and anywhere banking with the help of mobile telecommunication services, this facility is very easy accessible by each mobile internet users. It also saves a lot of time. The internet of mobile banking is very fast compared to other mode of banking.

**Figure 4.1 : At which Level of economic performance your Commercial Banks implement her economic performance?**



Source: Field data, 2016

The results from figure 7 indicate that, the level of implementing electronic advancing system In East African Community Member States is 100 % at local perspective level and national perspective level respectively, 88.2% at regional perspective level, 26.5 at continent perspective level and 0% at World-wide perspective level.

**Table 4.4: Justification for the answers**

				Cases Included		Cases Excluded		Total	
Reason				N	Percent	N	Percent	N	Percent
Provide	International	service	to	30	88.2%	4	11.8%	34	100%
customers									

Correspondence and collaboration banks	21	61.8%	13	38.2%	34	100%
Western union and other agencies services	17	50.0%	17	50%	34	100%
Mobile money services	8	23.5%	26	76.5%	34	100%
Pull and push services	8	23.5%	26	76.5%	34	100%
Easy cash services	8	23.5%	26	76.5%	34	100%
Payment and transaction	8	23.5%	26	76.5%	34	100%

Source: Field data, 2016

The outcome from table 4.4 explained the main reason of implementing electronic advancing system East African Community Member States; where 30 respondents corresponding to 88.2% declared that electronic banking system provide International service to customers, 21 respondents represented by 61.8% proved that it support in correspondence and collaboration banks.

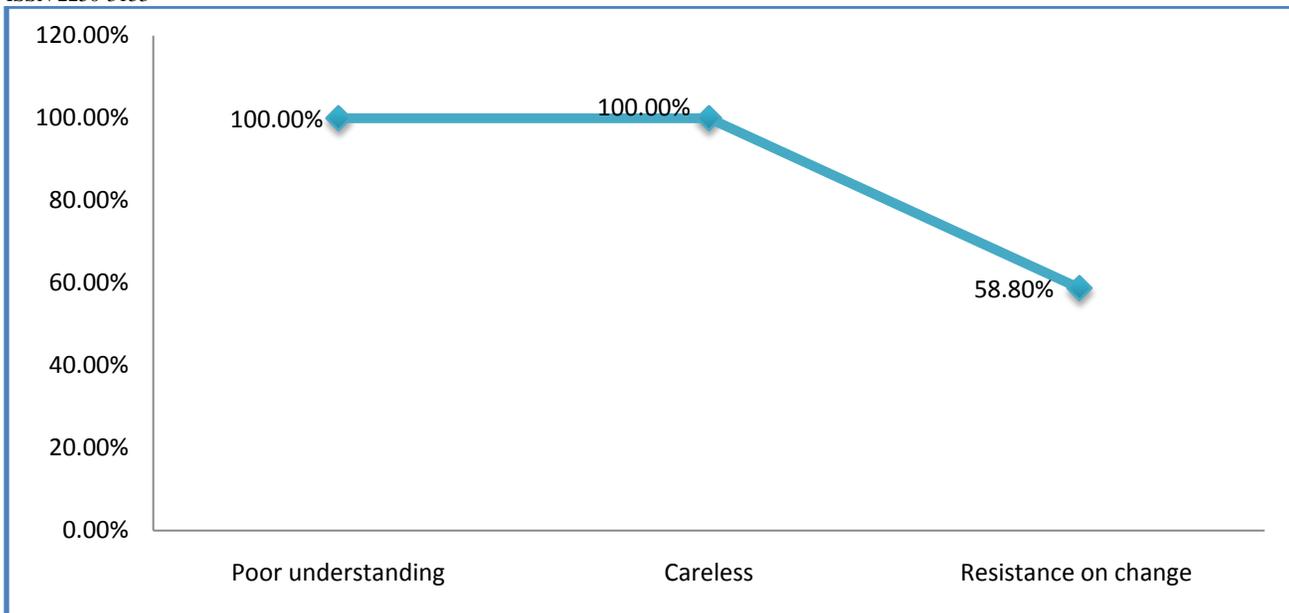
Table 4.5: Do your customers use mobile advancing that facilitates bank's economic performance?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	34	100.0	100.0	100.0

Source: Primary data, 2016

The results from table 5 show that all (100%) respondents confirmed that Commercial Banks in East African community member States' customers are not connected on mobile advancing.

Figure 4.2: If no, why?



Source: Field data, 2016

The results from figure 8 illustrate the main reasons of non-using mobile advancing by customers, where all (100%) respondents confirmed that the main reason is the poor understanding linked with law academic level and careless (negligence) respectively, while 20 respondents represented by 58.8% assumed that the reason of not using mobile advancing is related to resistance on change.

Table 4.6: What is your plan on motivate all of them using mobile advancing?

Plan	Cases Included		Cases Excluded		Total	
	N	Percent	N	Percent	N	Percent
Strong Sensitization	34	100.0%	0	0.0%	34	100.0%
Resumption Advertisement	30	88.2%	4	11.8%	34	100.0%
Discouragement with High price on using paper sheet in different services	25	73.5%	9	26.5%	34	100.0%
Free charge on withdraw by using mobile banking	16	47.1%	18	52.9%	34	100.0%
Provide a physical motivation on the users	21	61.8%	13	38.2%	34	100.0%

Source: Field data, 2016

The results from table 4.6 show that 100% of respondents said that they have plan of organizing strong sensitization for their customers in using mobile money, 88.2% of respondents motivate their customers in

using mobile advancing system through advertisement, 73.5% of respondents motivate their customers by increasing price on using paper sheet in different services offered by bank, 61.8% of respondents provide physical motivation the users such as(award, purse, grant, pouch, stipend), while 47.1% of respondents afford free charge on withdraw by using mobile advancing.

**Table 4.7: Does your Commercial Banks using internet advancing that affect her economic performance?**

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	34	100.0	100.0	100.0

*Source: Field data, 2016*

The results from table 8 demonstrate that all (100%) of respondents confirmed that Commercial Banks in East African community member States are using internet advancing.

**Table 4.8: If yes, how?**

Importance	Cases Included		Cases Excluded	Total
	N	Percent		
Access on the account of customers	32	94.1%	2	34 100.0%
Facilitates Historical checking	30	88.2%	4	34 100.0%
Push and pull by both banks and customers	21	61.8%	13	34 100.0%
Easy Transfers on both bank and customers	25	73.5%	9	34 100.0%
Facilitate bank's Payment and transaction	28	82.4%	6	34 100.0%

*Source: Field data, 2016*

The findings from table 4.8 indicates how electronic advancing affect economic performance, where 94.1% proved that, it help to access on the account of customers, 88.2% of respondents confirmed that it facilitates historical checking, 82.4% of respondents said that it facilitate bank's Payment and transaction, 73.5% of respondents said that it make easy transfers on both bank and customers, and 61.8% said that it help in push and pull service by both banks and customers. It is right that, by using internet banking, customer can check on his account and carry out transactions whenever it suit him, including evenings and weekends.

**Table 4.9: What is the effect of using internet advancing by your bank on her economic performance?**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Positive	12	35.3	35.3	35.3
	Negative	4	11.8	11.8	47.1
	Both	18	52.9	52.9	100.0
	Total	34	100.0	100.0	

*Source: Primary data, 2016*

The results from table 4.9 indicates the sight of respondents in using internet advancing by their bank, 52,9% reported that the effect of using internet advancing is both positive and negative, 35.3% revealed that it has positive impact, and 11.8% revealed that, it has negative impact. . Do Young et al.(2006) observed the financial performance of internet community bank in U.S. during 1999-2001. The results found that internet adoption improved community bank’s profitability, particularly through increased revenues from deposit service charges.

**Table 4.10: Positive impact of using internet advancing**

Impact	Cases Included		Cases Excluded		Total	
	N	Percent	N	Percent	N	Percent
Service are easy and quickly	30	88.2%	4	11.8%	34	100.0%
Allurement(Solicitation) of the service	17	50.0%	17	50.0%	34	100.0%
Time management	25	73.5%	9	26.5%	34	100.0%
Preferable and appreciated by multination and transactional corporate	21	61.8%	13	38.2%	34	100.0%
Increasing bank revenue	24	70.5%	10	29.5%	34	100.0%

*Source: Field data, 2016*

The findings from table 4.10 were indicated by banks staff as positive impact of using internet advancing; 88.2% reported that internet advancing make service easy and quick, 73.5% said that it help in time management, 70.5% indicated that internet advancing contribute in increasing bank revenues, 61.8% indicated that internet advancing is preferable and appreciated by multination and transactional corporate, while 50.0% indicated that it facilitate allurements (Solicitation) of the service. The internet advancing has the advantage that customer avoid traveling to or from a bank branch. In this way, internet advancing save time and money, provides convenience and accessibility, and has a positive impact to customer satisfaction. Customers can manage their advancing affairs when their want and they can enjoy more privacy while interacting with their bank. It had been claimed that internet advancing offers the customer more benefits at lower cost (Mold, 1998).

**Table 4.11: Is your bank use electronic card advancing that affects her economic performance?**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	34	100.0	100.0	100.0

*Source: Primary data, 2016*

The results from table 4.11 show that all (100%) of respondents confirmed that financial institutions in East African Community Member States are using electronic card advancing that affects her economic performance.

**Table 4.12: If yes, explain**

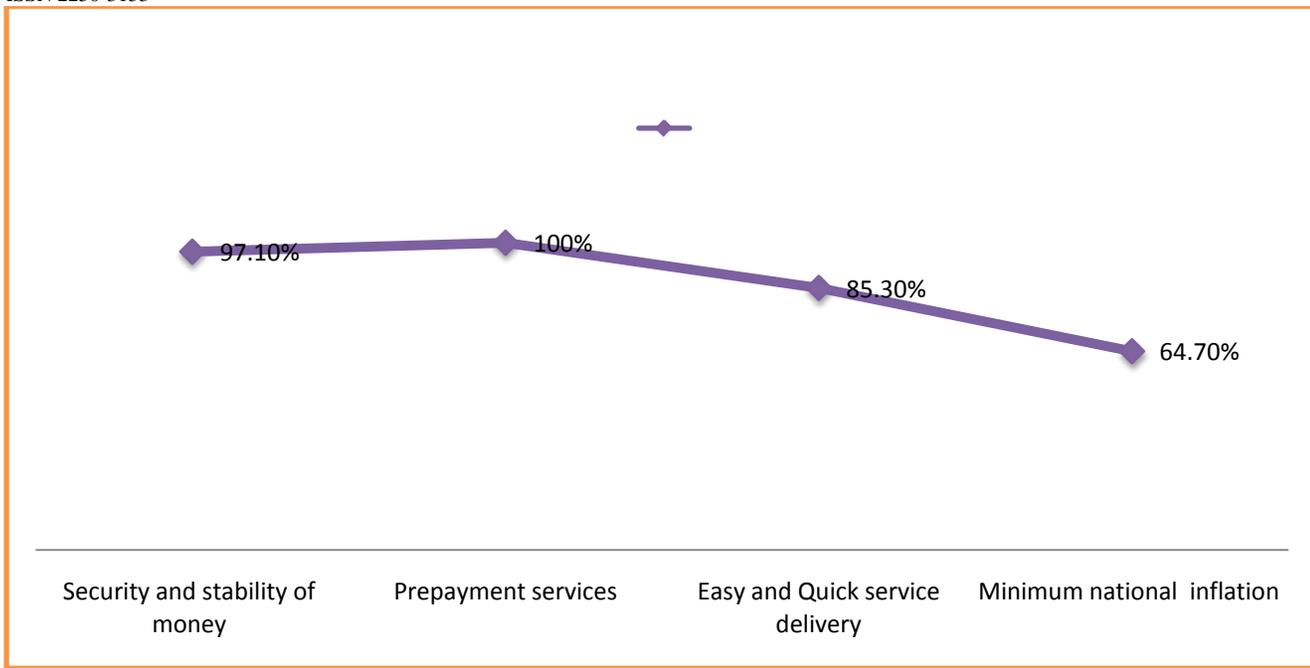
	Cases Included		Cases Excluded		Total	
	N	Percent	N	Percent	N	Percent
Support on withdraw of money	29	85.3%	5	14.7%	34	100.0%
Help to pay different product at market	21	61.8%	13	38.2%	34	100.0%
Salaries and wages account situation	21	61.8%	13	38.2%	34	100.0%
Money stability(The transaction done by the two organs out of customers)	31	91.2%	3	8.8%	34	100.0%

Minimizing inflation (minimum physical money)	18	52.9%	16	47.1%	3	100.0%
					4	

*Source: Field data, 2016*

As shown in table 4.12, 31 respondents represented by 91.2% mentioned that electronic card advancing guarantee money stability(the transaction done by the two organs out of customers), 85.3% of respondents reported that it support on withdraw of money, 61.8% reported that it help pay different product at market such as supermarket, 61.8% also motioned that it aid customers to check salaries and wages account situation, and 52.9% mentioned that it minimize national inflation(minimum physical money). Various studies have shown the benefit of electronic card advancing as maximum flexibility in payment transactions in small nominal amount. (Milner et al., 2002), noticed that, it help for example in transport, in cinemas, in clubs, in market and super market.

**Figure 4.3: If yes, explain**



*Source: Field data, 2016*

## 4.2 Conclusion

The set Production on this Study carried out on Commercial Banks in East African community member States were demonstrated that the percentages of 4/5 of 160,057,000 population living in the region are not regularly using electronic advancing thro 48% are not even involve on the operators of technology advancing which bring out misplaced of financial performance and undesirable significances on the State's monetary policy implementation. It should be renowned that technologyadvancing could play an excessive role on financial performance of financial institutions (banks) when countries brand energy on educating and encourage the system of socio-economic development of a particular State member of east African Community

Technology advancing improves thatfinancial performance of Commercial Banks in East African community member States, could not consideronly as client's facilitation of services and even the performances of the commercial banks but should considering its impact beyond business aspect up to the as one of strategic weapon for these countries member of east Africa community in particular, developing countries in general to improve its socio-economic development aspect. If specific States regulate its technique of encouraging and motivate the community to operate with these electronic advancing component, should eradicate the illness existing in the population of east African community state member such as poor understanding linked to academic level, careless (negligence) and resistance on change that still happening and sometime

supported blindly by leadership system that cause the limitation of these Countries' progress in terms of economic development.

Thus the objectives of this study which were based on the role of Mobile advancing; the contribution of Internet advancing; the impact of Electronic Card advancing and to develop a model on the best practices of electronic advancing strategy in enhancing financial performance of Commercial Banks in East African community member States, the findings revealed that 100% of respondents confirmed that financial institutions (Commercial banks) in East African Community states member are using electronic advancing that should continue support the achievement of their goals related with the growth of the said Commercial Banks. During this scientific Journey, the majority of 76.5% of respondents, illustrated that mobile advancing should play a vibrant role on the Commercial Banks 'economic performance such as quickly and easy service delivery; Increasing institution's income; decreasing cost and other financial institutions changes; Easy transfers on both banks and customers and so on. The internet banking and electronic cards advancing well established should help in effective technology advancing system. Withdraw and transaction can be made anywhere at any time. In general, the technology advancing has made advancing transaction to be easier by bringing services closer to its customers hence improving performance of finance in East African community states member.

### **4.3 Recommendations**

After long journey in this Study, the researchers provided and advised to consider strongly the recommendations below that should play if considered a vital role on the performance. Adoption of Technologies system by the leadership system in this member states, should influence the content and quality of banking operations doing by these Financial Institutions which could back and increase their performance. From all indications, Technology advancing presents great potential for financial performance and the business process reengineering of East African community member states' Banks. Investment in Information technology should form an important component in the overall strategy of banking operators to ensure effective performance.

It is imperative for bank management to intensify investment in Information Technology and Information Communication Technology products to facilitate speed, convenience, and accurate services which will value their financial performance vis a vis to the customers, or otherwise lose out to their competitors. The banking industry in East African community member states presents Information Technology and Information Communication Technology providers with great opportunity to market their innovations which support them

enough on their financial performance. Success in this area however depends on how they can customise their services to appeal to the ready minds of various stake holders in the industry.

- ✓ The study recommends that the Commercial Banks in East African community member States should considered intensifying the mobileadvancing as this will ensure service accessibility by customers and thus improving their financial performance.
- ✓ States member of East African community member States should focus on the third industrial revolution as the birthplace of informational technology system where business is facilitated with the support of using the software in terms of digital revolution. This age of the services supported by home computer, internet, cell phones, microwaves, automation and robots should be used to support the long projection of the nations with the sophistication considering as the rapid access of development that has given rise to the ever growing population world-wide.
- ✓ Governments should brand correct Information Technology policy by certifying that Computer, Communication equipment and other Information Technology infrastructures, to a large extent, are manufactured in the countries so that Information Technology illiterates are considered, by making the equipment and infrastructures technological friendly. Also, government should contribute in ensuring focused telecommunication industry is visible to reduce or remove avoidable costs of implementing electronic advancing. To counter the threats and insecurity posed to net banking, like money laundering, fraud, among others, necessary legal codes backing the industry must be established and fully followed up as this will enhance the growth of the industry.
- ✓ Automated Teller Machine (ATM) should be put in different sites easily accessible by the operators, so that quick service and convenience is maintained hence improving bank processes. At the sometime constantly serviced should be ensured in order to provide reliability of the services.
- ✓ The Commercial Banks should subscribe to reliable internet providers for effective and efficient servicedelivery.
- ✓ The Commercial Banks should employ skilled personnel with more experience on network management in order to ensure the reliability of network.
- ✓ The Commercial Banks management should establish country wide supported by her Government training and seminars for clients on usage of various e business applications for efficient performance of the bank. For example, training on Automated Teller Machine (ATM) and VISA usage, internet advancing, and mobile advancing and soon.
- ✓ The bank should keep on upgrading their e advancing technology in order to have an up to date system for effective service delivery

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