The Impact of Mobile Banking on Economic Development in Puntland-Somalia

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Abstract
In recent years the usages of mobile banking and in particular, payments by means of mobile phones have increased in Somalia (Abdullah).That is the reason this study attempted to investigate the impact of the mobile bank on economic development in Puntland. The study was guided by the following objectives; the first objective was to examine the extent of mobile money in which can facilitate economic transactions, and the second objective was to investigate challenges arising from Mobile Money Services and its solutions. This study was conducted through an analytical survey design by using both quantitative and qualitative research methods in two-parts: A questionnaire and key informant interviews (KIIs) for collecting data and from selected respondents. Data were analyzed using Statistical Package for Social Science (SPSS) and Microsoft Excel. The study utilized snowball and purposive sampling to select a population sample size of 78. The study utilized Mean, Standard deviation and percentages; tables. In addition to that, data collection was analyzed using themes and explanations while comparing the findings with the literature review part of the study. The study showed that Mobile Money has significantly impacted the Puntland economy, due to the fact that it has shown to be a great contribute to economic development through a process of facilitating of economic activities. In addition, Mobile money is easily accessible in remote areas and it demonstrated to be safe and trust worth. The study found that mobile money has also made a significant contribution to the business sector as the majority of the traders rely on it as opposed to the formal banking sector for their day to day transactions. Also, it is evident that all the respondents in this study had a clear understanding of the basic functions of mobile money services. Mobile money services have a positive impact on sales. Efficiency and reliability contribute more to mobile money utility and economic development. The main challenges of mobile money technology include; reliability and lack of guarantees because the system does not provide any guarantees for as a customer to compare the traditional banks. The study, therefore, recommends that the government should put in place regulations to deal with mobile banking services to ensure that the interests of the consumer are safeguarded and at the same time guaranteeing the viability of the sector.

BACKGROUND OF THE STUDY

The emergence and advancement of mobile communication technologies over the last two decades have made global physical boundaries invisible as anyone in any corner of the world is reachable by the dial of a button, instantly bringing a revolution in the way people do their banking(Ensor, Montez, and Wannemacher,, 2012)and (Munyoro, and Matinde, 2016)Munyoro, G and Matinde, M, 2016 note that recent advancements in mobile technology have continued to revolutionize the banking industry and the emergence of mobile banking has created opportunities for vulnerable and people who now have access to financial services state that the mobile phone is ever popular and has created scope for financial transactions on mobile phones, whilst(Birchet al, 2008), (Saunders, 2000)and (Mas, Ignacio & Dan Radcliffe, 2010)suggest that recent encroachment in mobile technology has continued to develop the banking sector and the advent of mobile banking has created prospects for the susceptible people who now have access to pecuniary services. In short, this convergence of telecommunications and banking services has created opportunities for the emergence of mobile commerce, in particular mobile money transfers as noted by (Vaughn, 2007, p. Vaughan)

In the world first mobile banking and payment initiatives were announced during 1999. (The same year that Fundamo deployed their first prototype) the first major deployed was made by a company called Pay box "largely supported financially by Deutchebank". The company was founded by two young German's "Mathias Enteman and Eckert Ortwein" and successfully deployed the solution in Germany, Austria, Sweden, Spain and UK at about 2003 more than a Million of people were registered on the Pay box (Jenkins, 2008)

M-PESA was the first MMT service in Africa, which was introduced by Safaricom of Kenya (A Vodafone partner) in 2007. M-PESA (M refers to mobile, and PESA refers money in the Swahili language) can be accessed from the different outlets such as the headquarter, main branches of the company, or an authorized business outlet. Safaricom registered over 20, 000 consumers for M-PESA within the first month of introducing the service(Hughes& Lonie, 2007), and the number reached more than 15 million users of MMT in Kenya after five years of launching (Michaels, 2011)He contends that there are several factors behind the wide adoption and acceptance of this service by the users, including rapid migration to cities for work, a significant unbanked number of the populace, the credibility of the service provider, and finally their commitment towards families in home villages. Therefore, as asserted by (Hughes& Lonie, 2007), the M-PESA is primarily designed for the unbanked populace in Kenya. The MMT also was later introduced in several African countries such as Nigeria, South Africa, Tanzania, Ghana, among others. The success of these services in South Africa and Ghana were less than the Kenya's M-PESA success (Tobin, 2011)

In Somalia, Due to having access and rapid growing of telecommunication, Hormuud Telecom in Mogadishu, Golis Telecom in Bossaso and Telesom in Hargeisa have introduced a mobile money (M-money thereafter) service in the first time in 2009, which is known as Sad or Sahal financial Service allowing customers using their mobile phone to transfer money, to pay bills and to purchase goods and services (Sayid, Echchabi, & Abd. Aziz, , 2012).

According to (Dalmar, 2015)Mobile-money service providers in Somalia are; SAHAL mobile money services provided by Golis Telecom in Puntland, EV-PLUS mobile money services provided by Hormud Telecom in Southern Somalia, ZAAD mobile money services provided by Somtel Telecom in Somaliland and E-MAAL mobile money services provided by Nation link Telecom.

The lack of effective government in Somalia affected the necessities of the life. However, telecommunication, industry filled the governmental gap by introducing revolutionary technologies (Osman , 2012).The industry provides several services such landline, mobile phones, internet and mobile banking. The mobile banking or what we can refer to mobile money transfer is very popular with the most sophisticated and active people in Africa with regard to mobile phone payment (Osman, 2012)

Many diverse factors contribute to the adoption and acceptance of these MMT services in Somalia. One major reason is that the banking systems in the country are very limited. In addition, there is much risk of carrying cash since the country is still politically unstable and recovering from more than two decades of chaos and civil war (Mohamed, 2013).There are huge remittances sent by the Somali Diaspora back home to their families, friends, relatives, or business associates. There is also a huge migration to the major cities because of the economic crisis, famine, droughts, and job seeking. All these factors can contribute to the acceptance and usage of MMT service by the Somalis as they were behind its usage in other countries especially in Africa.

People need new financial services as a medium of exchange, mobile banking facilitated the solution of the above-mentioned problems. People can pay bills, make purchases, transfer money to other, deposed and withdraw money using their mobile phones any time anywhere. Business people in the remote areas can directly transfer their money to their suppliers without going to remittance companies (Lawack, 2013). In order to provide an excellent medium of exchange, people need a new medium of exchange that has time saving, Acceptability, Security and Efficiency (Cecchetti, Schoenholtz, & fackler , 2011).

People were using paper money, which is associated with many problems, some paper currencies may be loading problems, security problem, and some paper money may be refused because of tear and long term using, and time saving is very low and inefficient. Also, the last decades, there were problems of using Somali shilling because of devaluation. This made it difficult Somali shilling to be used and US Dollar became the medium of exchange of many business centers.

According to (Dalmar, 2015)mobile money reduces the transaction cost. For example, before the introduction of mobile money, if someone who is in Galkayo wanted to buy merchandise from Bossaso, he or she was forced to travel with a sack of cash from Galkayo to Bossaso, spend a day for travelling; risk the loss of money through robbery, spend money for a hotel while in Bossaso, go through the trouble of counting bundles of dirty banknotes. Now within seconds, you send the money through the telephone and save money and time that you can use for improving the productivity of your business. This, in turn, will help the whole economy to grow.

The terms m-banking, m-payments, m-transfers and m-finance refer collectively to a set of applications that enable people to use their mobile telephones to manipulate their bank

Accounts, store value in an account linked to their handsets, transfer funds, m-banking or even access credit or insurance products (Donner & Tellez, 2004)Accordingly, mobile banking is defined as a working definition: Mobile banking is a form of electronic money and refers to services that connect consumers financially through mobile phones.

This study, the researcher investigates the impact of mobile banking on economic development in Puntland

Statement of Problem
The advent of mobile money transfer services revolutionized the way the financial services industry conducts business, empowering organizations with new business models and new ways to offer 24-hour accessibility to their customers. The ability offered financial transactions over the mobile phone has also created new players in the financial services industry, such as mobile phone service providers who offer personalized services. This was evident with the prevalent use of SAHAL service in Puntland. The real time money transfer over the mobile phones enables individuals in areas with no demand to acquire demand within seconds.

People were using paper money, which is associated with many problems, some paper currencies may be loading problems, security problem, and some paper money may be refused because of tear and long term using, and time saving is very low and inefficient. Also, the last years there were problems of using Somali shilling because of devaluation. This made it difficult Somali shilling to be used and US Dollar became the medium of exchange of many business centers. People need new financial services as a medium of exchange, mobile banking facilitated the solution of the above-mentioned problems. People can pay bills, make purchases, transfer Money to other deposed and withdraws money using their mobile phones any time anywhere. Business people in the remote areas can directly transfer their money to their suppliers without Going to remittance companies (Lawack, 2013).

Based on the information this study sought to investigate the impact of mobile banking on Economic development in the Puntland State of Somalia.

Research Objectives
General Objective

The main objective of the study is to investigate the impact of mobile banking on Economic Development in The Puntland State of Somalia.

Specific Objectives
The specific objectives of the study were:
1. To assess the impact of mobile banking on economic development in Puntland.
2. To examine the extent of mobile banking in which can facilitate economic transactions.
3. To investigate Challenges Arising from Mobile Money Services and its solutions

Research questions
The study sought to seek answers for the following questions:
1. What is the impact of mobile banking on economic development in Puntland?

2. To what extent does mobile banking which can facilitate economic transactions in Puntland?
3. What are the Challenges Arising from Mobile Money Services and itssolutions?

Justification of the Study

The study established that mobile money transfer caused the economic and social impact of the Society. The results of the study used regulatory bodies, government, and finance Institutions to come up with education programs and policies aimed at improving access to positively affect the households economically and socially

LITERATURE REVIEW
The History of Mobile Banking
Mobile banking can be traced back to the Second World War, when field cash offices provided the relevant currency of the country to all units and individual officers in whom they were based and received money from army post offices and officers' shops and this was an army, banking business conducted on a unit, which was originally set up in a tent and housed in a truck moving from one area to another especially in remote areas (Ferber, 1974; as cited Porteous, 2009)

Concomitantly, (Schofield & Kubin, 2002) suggest that the same evolution of mobile banking was taking place in Kirkintolloch in Scotland that is in 1946 when the National Bank of Scotland, a constituent company of The Royal Bank of Scotland was the first to introduce the world's very first commercial mobile banking service. The reasoning behind the name mobile banking emanated from the mobile vans that were used to provide mobile banking facilities (Porteous, 2009)

The facilities were largely directed to the remote areas such as Highlands and East of Scotland, Islands and from there, the idea spread to other parts of North and South America, Europe, Arabic countries and Africa as they copied from Scotland's way of banking as noted by (Schofield & Kubin , 2002). In the process, contemporary mobile banking emergedin 1999 when European banks offered banking services via SMS through mobile smart phones with WAP support only tothose with bank accounts (Stephen et al, 2007).

According to (Suoranta, 2003)suggests that Finland is the pioneer in the modern mobile banking because of its strong mobile phone industry and the development of that industry. This is further supported by (Pelkonen & Dholakia , 2002)who state that the development of the telecommunications industry, which took place in the 19th century resulted in the first telecom being built in Finland and the emergence of a cell phone on the market which then changed the way financial institutions conduct their business, as banks realized an opportunity to offer financial services through a mobile phone. This is echoed by (Lonie, 2010) who notes that the advent of smart phones has totally changed the business systems with new business models offering new ways of offering 24-hour accessibility to consumers. Mobile money transfers in their current form originated from a project in Mozambique conducted via the mobile operator M-Cel. Researchers funded by the UK Department of International Aid and Development note that people in countries like Uganda, Botswana and Ghana were spontaneously using mobile phone airtime credits as a way of transferring money to relatives. The same scheme was proposed to help the repayment of microfinance loans in Kenya in partnership with Safaricom to launch MPESA in 2007.

To show its significance, Standard Chartered in 2009 introduced mobile banking in seven markets in Africa through

Unstructured Supplementary Data on GSM carrier enabling customers to access banking services using mobile phones (Okiro & Ndungu , 2013)Later on, Barclays bank also introduced its hello money mobile service allowing customers to access their banking services using mobile phones for free.

MOBILE BANKING AND MOBILE MONEY TRANSFER

Mobile phone payments are a popular and most preferable way of sending and receiving money in Africa since the vast majority of the continent's population is ruler dwellers or uneducated (Ayo, Ukpere, Oni, Omote & Akinsiku, 2012; Mangudhla, 2012)The concept of mobile money transfer dates back to the history of telecommunication and banking industries. There are collaborations between the two industries for the facilitation of MMT service (Ayo et.al, 2012).

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MMT service in Somalia was first introduced by Hormuud telecommunication company. The ZAAD money transfer was the first product; however, it was banned by AL-Shabab Group. The company later introduced a more advanced service named EVC Plus. Other telecommunication service providers later offered similar products with different brands. For example, Golis offers SAHAL money transfer service, whereas Nationlink and Telecom Somalia offer E-MAAL and ZAAD services respectively.

The lack of effective government in Somalia affected the necessities of the life. However, telecommunication, industry filled the governmental gap by introducing revolutionary technologies (Osman, 2012). The industry provides several services such landline, mobile phones, internet and mobile banking. The mobile banking or what we can refer to mobile money transfer is very popular with the most sophisticated and active people in Africa with regard to mobile phone payment (Osman, 2012).

Many diverse factors contribute to the adoption and acceptance of these MMT services in Somalia. One major reason is that the banking systems in the country are very limited. In addition, there is much risk of carrying cash since the country is still politically unstable and recovering from more than two decades of chaos and civil war (Mohamed, 2013)There are

huge remittances sent by the Somali Diaspora back home to their families, friends, relatives, or business associates. There is also a huge migration to the major cities because of the economic crisis, famine, droughts, and job seeking. All these factors can contribute to the acceptance and usage of MMT service by the Somalis as they were behind its usage in other countries especially in Africa.

There are limited empirical studies on the state of the art of MMT adoption in the country. (Sayid, Echchabi, & Abd. Aziz, 2012), examined the mobile money acceptance in Somalia by drawing on the TAM model. (Sayid, Echchabi & Abd. Aziz, 2012)study suggested that perceived usefulness and security positively affected the attitude towards mobile banking, whereas social influence and perceived usefulness significantly and positively influenced the intention to accept mobile money. Furthermore, their study suggested that perceived ease of use had a positive effect on the perceived usefulness of mobile money.

Previous research focused on the factors influencing the adoption of MMT or mobile banking service from diverse theoretical approaches such as TAM model, Theory of Reasoned Action (TRA), Theory of Planned Action (TPA), Unified Theory of Acceptance and Use of Technology (UTAUT), Diffusion of Innovations theory, among others. TAM model was considered most suitable for the current study as it has empirical support and well-established constructs to predict intention to use a new technology.

CONCEPT of MOBILE BANKING

To understand the difference between Electronic- and Mobile Commerce or between Electronic and Mobile Business it is essential to understand the similarities and differences between the terms "electronic" and "mobile". The adjective "electronic", used within the specific contexts of "Electronic. Business" or "Electronic Commerce", signifies an "anytime access" to business processes managed by computer-mediated networks Furthermore the access to such networks is, in this case, stationary. The services are, therefore, not available independent of the geographic location (Hohenberg & Rufera, 2004)

The adjective "mobile", used within the specific contexts of "Mobile Commerce" or "Mobile Business", signifies an "anytime and anywhere access" to business processes managed by computer-mediated networks. The access takes place using mobile communication networks, making the ailment of these services independent of the geographic location of the user (Stanoevska-Slabeva, 2003 as cited Hohenberg & Rufera, 2004).

Mobile Commerce is closely related to Electronic Commerce, since the services offered in Electronic- as well as Mobile Commerce are handled electronically by computer-mediated networks and are accessible through communication networks (Tiwari & Buse, 2007)Mobile Business is often referred to as "M-Business" or "m Business".

Work with the full form "Mobile Business". The UNCTAD defines Mobile Business in the following terms: "Mobile Business involves business-related communication among Individuals and companies where financial transactions do not necessarily occur." (United Nations Conference on Trade and Development(UNCTAD), 2002) Mobile banking is a form of electronic money and refers to services that connect consumers financially through mobile phones (lawack, 2013).The terms m-banking, payments, m-transfers and m-finance refer collectively to a set of applications that enable people to use their mobile telephones to

manipulate their bank accounts, store value in an account linked to their handsets, transfer funds, m-banking or even access credit or insurance products. (Donner & Tellez, 2004).

Mobile Banking is usually defined as carrying out banking business with the help of mobile devices such as mobile phones or PDAs (Georgi & Pinkl, , 2005 and Luber, 2004). Mobile Banking refers to the provision and availment of banking- and financial services with the help of mobile telecommunication devices. The scope of offered services may include facilities to conduct banking and stock market transactions, to administer accounts and to access customized information (Tiwari& Buse, 2007).

According to Mobile Marketing Association, Mobile banking through cell phone offers many advantages for customers as well as banks. Some of them are as follows:
You make a transaction or pay bills anytime; it saves a lot of time, banking through cell phone benefits the banks too. It cuts down on the cost of Tale- banking and is more economical; Cell phone banking is cost effective. Various banks provide this facility at a lower cost as Compared to banking by self, Mobile banking thorough cell phone is user friendly. The interface is also very simple. You just need to follow the instructions to make the transaction. It also saves, the record of any transactions made, Mobile banking through a cell phone is very advantageous, the banks as it serves as a guide in order to help the banks improve their customer care services. Various banking services like account balance inquiry, credit/debit alerts, pill payment alert, transaction history, fund transfer facilities, minimum balance alerts etc. Can be accessed from your mobile., You can transfer money instantly to another account in the same bank using mobile banking, Banks can also promote and sell their products and services like credit cards, loans etc. A specific group of customers, Banking through mobile reduces the risk of fraud and

You will get an SMS whenever there is an activity in your account. This includes deposits, cash withdrawals, funds transfer etc. You will get a notice as soon as any amount deducted or deposited your account.

According to (Tiwari & Buse, 2007)Mobile banking has a number of disadvantages. These include- Decreases circulations and the use of Somali shilling. Encourages indirectly the use of US dollar even for small payments because it facilitates to provide small changes that might be difficult in the case of using paper money vulnerable to be corrupted (Morawczynski & Miscione, 2008)), does not offer a secure environment.

One of the success measurements of any program is the extent to which it contributes to the informal economy of Somalia. Economically, this mode of payment system can be very helpful to the informal economy of Somalia if it is not corrupted, because electronic payment systems are vulnerable to be corrupted as it is a sword with two edges (Nor, 2010).

Electronic payment systems in general and mobile banking in particular facilitate economic transactions in different ways:
  ➢ It facilitates business in the remote areas to directly transfer their money to them Suppliers
  ➢ It helps to collect receivables easily and
  ➢ It helps people to easily transfer money to their loved ones within Somalia

> Creating employment opportunities is one of the determinants of economic growth and the availability of these opportunities is considered as a crucial factor for the development of every country
> It helps consumers to demand their tests and the success of mobile banking or mobile money lies whether it creates more economic opportunities. Creating employment opportunities is one of the determinants of economic growth and the availability of these opportunities.
> It eliminates the problems associates with lack of small changes specially the US Dollar.

According to Research Journal of Information Technology in 2009, mobile banking can offer services such as the following: Account information, Mini- statement and checking of account history, Alerts on account activity or passing of set thresholds, Monitoring of term deposits, Access to loan statements, Access to card statements, Mutual funds/equity

Statement, Insurance policy management, Pension plan management, Payment and transfers, Domestic and international fund transfers, Mobile recharging, Commercial payment processing, Bill payment processing.

TECHNOLOGY ACCEPTANCE MODEL
Technology Acceptance Model (TAM) is widely adopted theory for examining the using of computers by the users. The theory was based on the Theory of Reasoned Action (TRA) by (AJZEN & FISHBEIN, 1980). Technology Acceptance Model (TAM) was introduced by (Davis, 1986)posits that perceived usefulness and perceived ease of use as major determinants for using computers. Perceived usefulness is defined as "the degree to which a person believes that using a particular system would enhance his or her job performance", while perceived ease of use refers to "the degree to which a person believes that using a particular system would be free of effort" (Davis, 1989)These two beliefs determine the majority of variance in adoption of a new technology.

Consequently, the theory was further evaluated by subsequent studies. For instance,(Davis, Bogozzi & Warshaw, 1989) conducted a comparison study between the TAM model and theory of reasoned action (TRA). (Davis et.al , 1989)found perceived usefulness to be a strong predictor of behavioral intention to use the system, whereas perceived ease of use had also affected on intention. Attitude towards using the systems was found to be partially mediated the prediction of these two variables on the outcome (intention). In addition, their study suggested that intention predicts computer usage.

The TAM model is considered the most popular theory, examining the determinants of information systems among the researchers (Luarn & Lin, 2005). Although previous studies widely adopted this theory, many constructs were added to the original model. As noted by (Davis, 1989) the TAM model may not fully predict all the variables in the user adoption. This means that there are other variables that may influence the user acceptance. As such, several constructs were incorporated into the original model, including perceived credibility, perceived self-efficacy, and perceived financial cost (Luarn & Lin, 2005); technology-specific valuation, and number of users, among others (Wang, Lo, & Fang, 2008).

Much literature relating to the information system usage has dropped the attitude contrast from the original TAM model. For example, (Venkatesh, & Davis, 1996)used the TAM

model without attitude. They argued that this construct did not mediate the effect of beliefs about the system on the actual usage due to the exploratory nature of the study and the study's intention to explore only the students' adoption of the service. Actual usage. This also was observed in other similar studies (Ramayah, & Ignatius, 2005; Luarn, & Lin, 2005; as cited Wang et.al, 2008). The current study omits also the attitude construct as well

RESEARCH METHODOLOGY

This section focused on the research methodology which was used in the collection and processing of data. The section explains the design, approach, the population concerned, and types of data and methods of data collection. It sets out also what information was required, how respondents (sample size) were selected and eventually how data collected were analyzed.

Research Design

The study design of this research is a mixture of quantitative and qualitative. A quantitative research seeks to collect facts about a phenomenon (figure, counts) without including people's opinions. These facts are then analyzed quantitatively to reach at the conclusion of the study. On the other hand, a qualitative seeks to understand a phenomenon from the opinions and perspectives of the respondents.

Research Approach

The approach of this study is pragmatism, which stands on the continuum between constructivism and positivism. It therefore draws on the two designs of quantitative and qualitative approaches. Research paradigms address the philosophical dimensions of social sciences. A research paradigm is a set of fundamental assumptions and beliefs as to how the world is perceived which then serves as a thinking framework that guides the behaviour of the researcher (Wahyuni, 2012).

The four popular paradigms that shape the thinking of researchers are positivism, post positivism, constructivism and pragmatism. Tashakkori,A. and Teddlie, C., 1998 argue that while pragmatism refuses to join the 'paradigm war' between the positivist and interpretivist research philosophies, and instead of questioning ontology and epistemology as the first step, pragmatist supporters start off with the research question to determine their research framework. This study takes the stand of pragmatist in reaching the object of the study.

The target population and sample size

The target population is the population to which the researcher ultimately wants to generalise the results (Amin, 2005). Therefore, the target population of this study will be 97 respondents coming from users, whether business people, professional as well as students and staff of mobile banking company. banning snowball and purposive sampling will be used. The researcher will use semi-structured questions to guide interviews.

A sample is a portion of the population whose results can be generalized to the entire population (Amin, 2005).The sample size will consist of Seventy-eight (78) respondents from 97 population using Sloven's formula which is $n= N/1+N (0.05)^2$ where (n= Sample size, N= target population). This sample will be sufficiently high and representative enough to validate the findings.

From this formula, the sample will be calculated as flows

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

Where: n= sample size

N= target population

ə= level of significance/marginal error (0.05)

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

$$= \frac{97}{1+ 97(0.0025)}$$

$$= \frac{97}{1+0.2425}$$

$$= \frac{97}{1.2425}$$

$$\simeq 78$$

TABLE

Category	Population	Sample
Business people	31	25
Professional people	30	24
Students	23	18
Company staff	14	11
Total	**97**	**78**

Source: Researcher (2019)

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Data Collection Methods

During the study, primary data collection methods were used. Primary data constitute the current usage of m-banking services for economic transactions and the related barriers to the use of m-banking services for economic activities. Data were collected from the population by using questionnaires and interview.

Ethical implications

The researcher has moral obligation to strictly consider the rights of the participants who were expected to provide this knowledge (Streubert-Speziale & Carpenter, 2003)The researcher considered very important to establish trust with the participants and to respect them as autonomous beings, thus enabling them to make sound decisions (Bush & Glover, 2003). Ethical measures are as important in mixed methods research as in quantitative and qualitative research and they include ethical conduct towards participant's information as well as honest reporting of the results.

The ethical measures in this study included; consent, confidentiality, anonymity, privacy, dissemination of results, by ensuring the respondents that, the information provided are going to be used in research purpose only, and the respondents had the right to withdraw from the study partially or completely.

Analytical Procedures

Primarily quantitative techniques were used to analyse the data collected. These methods included both descriptive methods and inferential statistics. Data collected was first edited to detect and eliminate errors and omissions. This process was done at the same time as data collection in the field. It was then coded according to categorization for entry into computers for data analyses and entered into the computer.

For the analysis, Statistical Packages for the Social Sciences (SPSS) and Microsoft Excel statistical packages were used. Once the questionnaires were checked for completeness and correct recording, it was then entered into the developed database for subsequent analyses. The researcher validated entries through regular checks to ensure data was recorded accurately. Data cleaning was then done after all the entries.

Qualitative analysis formed a lesser method that was used to analyse the challenges experienced while using mobile money service.

PRESENTATION AND ANALYSIS OF FINDINGS
Introduction

This Section serves to present, analyze as well as to discuss empirical findings relating to the impact of mobile banking on economic development in Puntland. Data that was collected by the researcher through the use of questionnaires that were distributed and interviews that were conducted are presented, analyzed, discussed and interpreted. The Section gives a meticulous analysis and discussion of what the researcher gathered from the respondents. The presentation of the results is done in the form of tables, and charts.

Objective 1: To assess the impact of mobile banking on economic development in Puntland.
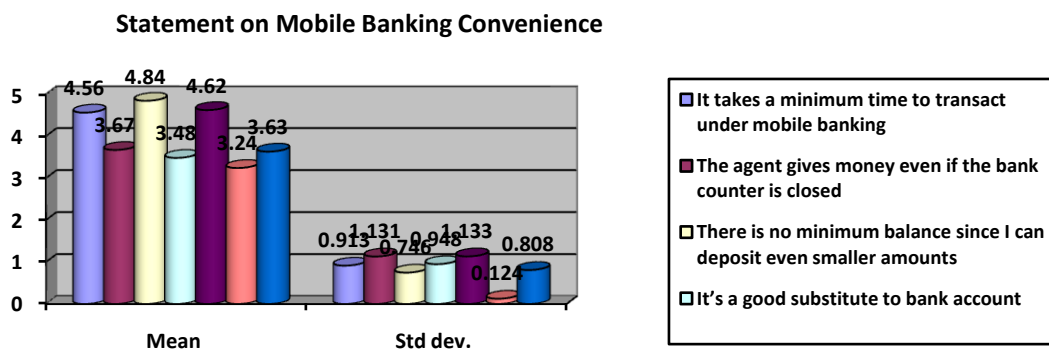
Mobile Banking Convenience
Features of mobile banking as far as its convenience in savings
The study sought to establish the extent to which the features of mobile banking as far as convenience in savings influenced the respondent's mobile savings. The findings are as stipulated in the figure below

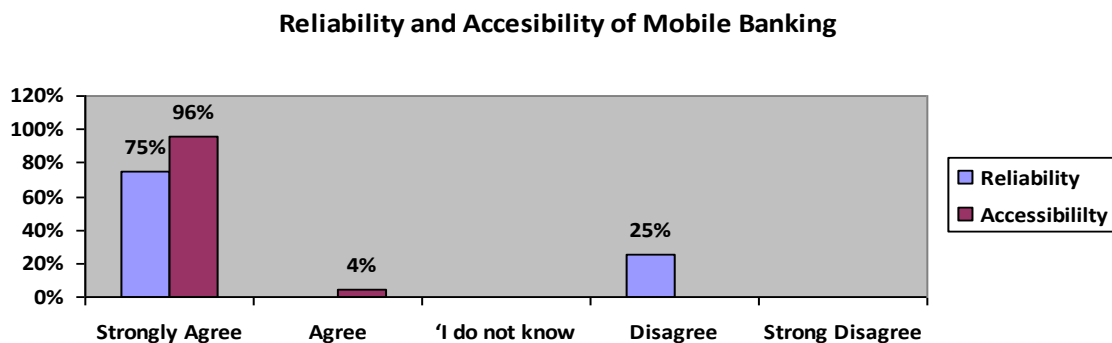Table 1: Statement on Mobile Banking Convenience

Mobile Banking Convenience	Mean	Std. Deviation
It takes minimum time to transact under mobile banking	4.56	.920
The agent gives money even if the bank counter is closed	3.67	.863
There is no minimum balance since I can deposit even smaller amounts	4.85	.560
It's a good substitute to a bank account	3.47	.849
There is no queuing/lines, paperwork or time waste	4.62	.943
There are prompt/quick updates through messages	3.24	.885
There are convenient timings as it is a 24- hour service	3.63	.791

From the study findings in Table 1and chart. The majority of the respondents agreed to a very great extent that mobile banking was no minimum balance since I can deposit even smaller amounts, there are no queues/lines, paperwork or time waste and it takes minimum time to transact under mobile banking, as indicated by the mean scores of 4.85, 4.62 and 4.56 respectively. On the other hand, most of the respondents moderately agreed that The agent gives money even if the bank counter is closed, There are convenient timings as it is a 24-hour service, It's a good substitute to a bank account and There are prompt/quick updates through messages as indicated by the mean scores of 3.67, 3.63, 3.47 and 3.24 respectively.

Mobile banking is reliable and accessible at all time

The interviewees were asked to show their degree of agreement with the statement that mobile banking is reliable as it protects customer information by means of PIN codes. They could select 'strongly agree', 'agree', 'disagree' or 'strongly disagree'. In Chart below shows how they responded

Reliability and Accesibility of Mobile Banking

From the findings above, 75% of the respondents strongly agreed 75% that mobile banking is secure and reliable as it keeps customer information secret by using PIN codes while 25% Disagree and 96% of respondents agreed that mobile banking was faster to access than any other banking options
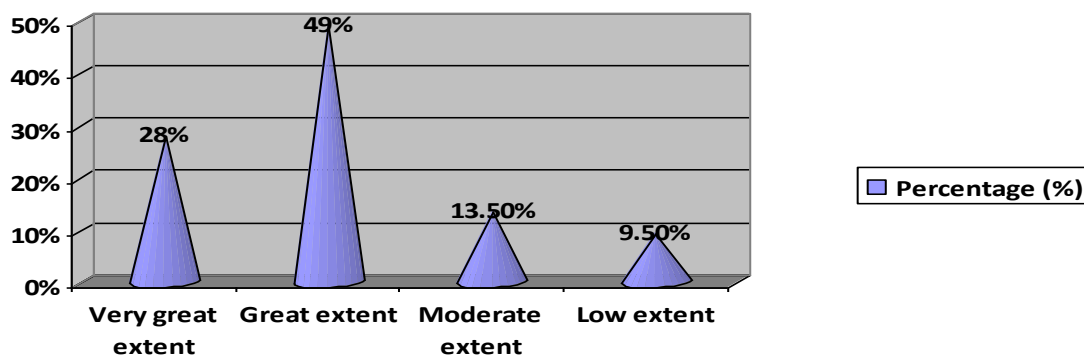
This supports the assertion by (Johnson, Brown & Fouillet, 2012)argues that M Pesa offers a high level of reliability and convenience since agents are located even in small market centers and customers can undertake transactions from the comfort of their homes

The study by (Omwansa, 2009)is a strong support to my findings. The study shows that mobile money increases financial accessibility for both the banked and the unbanked. By early 2007, 38% of Kenyans had no access to any form of financial services). This might have contributed to rapid mobile money penetration in Kenya.

Safety and Trust Worthiness of Mobile Banking
The study sought to establish the extent to which the safety and the trustworthiness of mobile banking influenced the respondent's mobile savings. The findings are as stipulated in the figure below
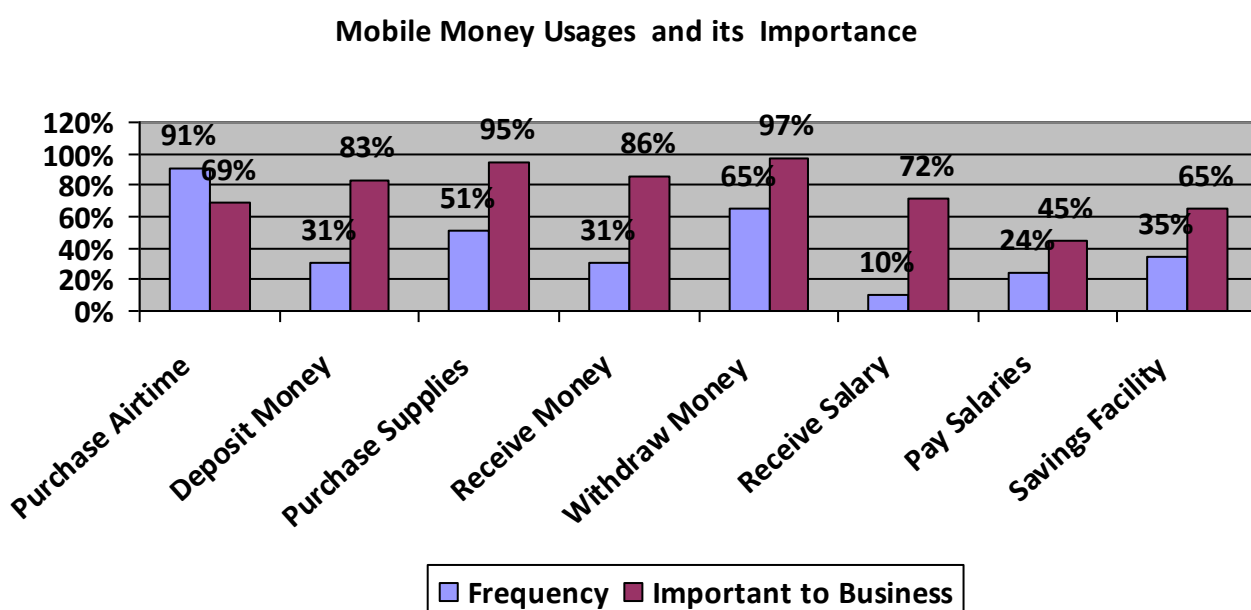
Safety and Trust Worthiness of Mobile Banking

From the findings above, most (49%) of the respondents agreed the safety and trustworthiness of mobile banking influenced respondent's mobile savings to a great extent, 28% to a very great extent and 13.5% to a moderate extent while 9.5% agreed on the safety and trustworthiness of mobile banking influenced the respondent's mobile savings to a little extent. A study by (Morawczynski, Olga, 2009)is a strong support to my findings. The study suggests that M-Pesa's popularity has been driven by its speed, safety, reliability, an extensive network of outlets, and its price relative to the alternatives.

Importance of Commonly Utilization of Mobile Money Services to Business Activities
We further conducted analyses on the responses of those that utilized mobile money services and their rating on the importance of the various services they were using in their business. the below chart summarizes these findings.
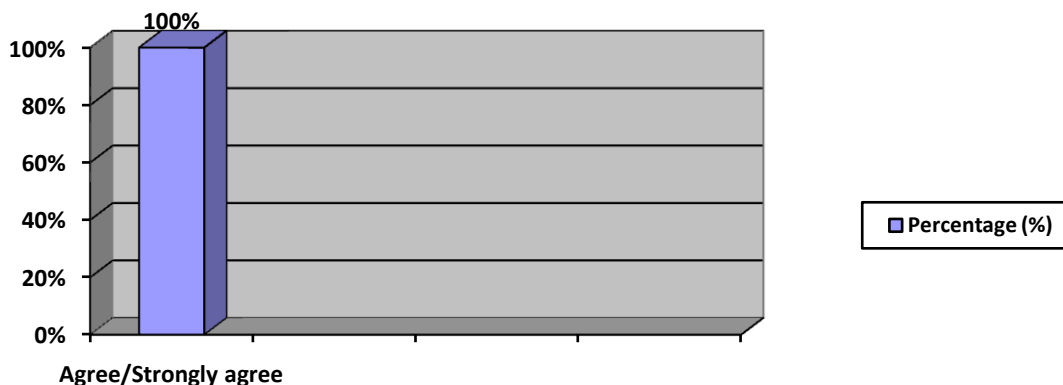
Mobile Money Usages and its Importance

The above chart demonstrates that those who used a particular mobile money service were more likely to rate the service as important to their business. For example, 51% of those surveyed were using mobile money service to purchase business supplies and out of those, 95% rated that serve as important to the business.

The study by (Buyer & lenders, 2006)is a strong support to my findings. The study shows that the mobile banking assists in payments (utility bills), deposits, withdrawals, transfers, purchase airtime, request bank statements and perform thirteen different crucial banking tasks, bushed real-time over their mobile phones. Banks at the side of the normal leased Bank (Uganda) have mostly enforced service delivery technology as the simplest way of augmenting the services historically provided by personnel, (Howcraft & Bacett , 2006).

The study by (Saliu, 2015)also is strong support to my findings and suggested that the MMT simply enables users to pay and receive payment for goods and services. School fees, electricity bills, transport fares, air tickets, buy and sell airtime among others. Moreover, MMT provides a safe storage mechanism for households and businesses for future use. Improving savings culture among the majority poor could improve their economic status by

giving them the opportunity to meet their financial needs in times of emergency. Also, this supports the assertion by (Davidson & Pénicaud, 2012)it was also found out that, in June 2011, mobile money service providers processed 141.8 million transactions. Of these, 29.8 million were payments: transfers, bill payments, and bulk payments. The rest were cashing in, cash out, and airtime top-ups. During the first half of 2011, the volume of transactions and payments processed on a monthly basis by mobile money service providers increased at annualized rates of 59% and 36% respectively.

Effect of MMT on Electricity and Water Bills

According to the above chart, 100.0% of respondents were told either agreed or strongly agreed that mobile banking affects the payment of their electricity and water bills while they knew anyone who disagrees. This supports the assertion of the study conducted by (Lyman & Scott, 2006) examined the impact payment of bills services in mobile banking within the society and therefore means it affects the productivity within the arena.

Objective 2: To examine the extent of mobile banking in which can facilitate of economic transactions.

Attributes of using Mobile Banking
The study sought to determine the extent to which the respondents agreed with the following attributes by using mobile banking. The responses were rated on a five-point Likert scale where: 5= to a very great extent, 4= great extent, 3- Moderate extent, 2= to a low extent and 1 = to a very low extent. The mean and standard deviations were generated from SPSS and are as illustrated in the table below.

No	Attributes of using Mobile Banking	Mean	Std. Dev
1.	Mobile banking makes it easier to conduct transactions with my customers and suppliers	3.71	.899
2.	Mobile banking is less expensive in conduction economic transactions	3.21	1.073
3.	Mobile money services are fast in facilitating economic transactions	4.81	.582

4.	Mobile money, banking services facilitate record -keeping of economic transactions	3.40	.888
5.	Mobile banking facilitates economic activities in the remote areas to directly transfer their money to their suppliers	4.21	1.024
6.	Mobile banking helps people to provide small exchanges that might be difficult in case of paper money	4.40	.931

From the study findings in the above table, the majority of the respondents agreed to a very great extent that mobile banking was fast in facilitating economic transactions; it also helps people to provide small exchanges that might be difficult in case of paper money and Mobile banking facilitates economic activities in the remote areas to directly transfer their money to their suppliers as indicated by the mean scores of 4.81, 4.40 and 4.21 respectively. On the other hand, most of the respondents moderately agreed that mobile banking was easier to conduct transactions with customers and suppliers; it facilitates record-keeping of economic transactions and it was less expensive in conduction economic transactions as indicated by the mean scores of 3.71, 3.40 and 3.21 respectively.

This supports the assertion by (Maimbo, 2010)shows that the M banking facilitates quicker and economical monetary transfer, increasing the volume of trade and access to finance for a large portion of the unbanked in developing countries. The study by (Lyman & Scott, 2006)also is strong support to my findings that the M banking customers can conduct transactions wherever they have cell coverage; they need to visit a retail agent only for transactions that involve depositing or withdrawing cash.

The study of (Banda, 2011)in Zimbabwe supports my findings, and his study found that mobile money, which is simply the ability for cell phone users to transfer money from one a subscriber to another as well as withdrawing cash from appointed mobile money agents have greatly helped Zimbabwe a person whose country is facing liquidity challenges through facilitating transactions in the financial sector without the need for bank accounts and queues. The study by (Spence & Smith , 2010). Also is a strong support to my findings that the use of mobile phones has enabled the growth of markets, social, business, and public services in countries (Spence & Smith, 2010). (Lin, 2011)claims that rapid advances in mobile technology have provided M banking extremely important in monetary services sector. The M banking service offers a way of cutting the cost of moving money from place to place (Donner & Tellez, 2008; as cited Anyasi & Otubu, 2009). At the same time, it brings more users into contact with formal financial services (Anyasi Otubu , 2009)

Objective 3: To investigate Challenges Arising from Mobile Money Services and its solutions

Challenges hindering the use of mobile-banking services for economic activities
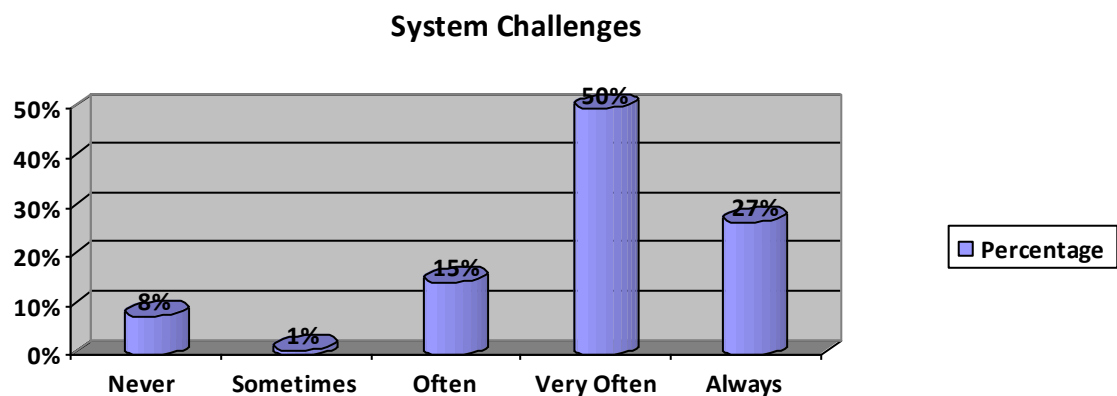
87 % of the respondents stated that "mobile money is unreliable and carries significant risks for our money, because the system does not provide anyguaranteesforas a customer to compare the traditional banks or Hawala. Different interviewee was quoted as saying 'we hand the Dollar amount (cash) we desire to deposit to the agent, after a few seconds, we receive a text message confirming that we have deposited such and such amount, our cash

money has disappeared and we don't see it. We just trust without condition for the sake of Allah and if the money that we have in our mobiles disappears or the network doesn't work anymore, we don't have any document and guarantee to prove that we put money in our account or mobiles[1]

One-client was quoted thus: 'Sometimes I may send to a wrong person and the process of recalling money can take time and I need this money for emergency supplies. The wrong receiver may even withdraw the money and switch off the phone[2]. Another One-client was quoted thus: 'Customers have no guarantees that their e-money can always be redeemedforcash and in case of dispute, the arbitrary seizing of their assets, technical problem, cyber-attack or system collapse, they are not protected by a formal service provider-user agreement[3].

System Challenges

According to **System challenges,** 8%f the respondents there were never system challenges that affected MMT services. 1% of respondent said there were sometimes system challenges that affected MMT services while 15% said there were often times system challenges. 50% of the total number of respondents said there were very often the system challenges and 27% said there were always system challenges that pose a threat to the MMMT service
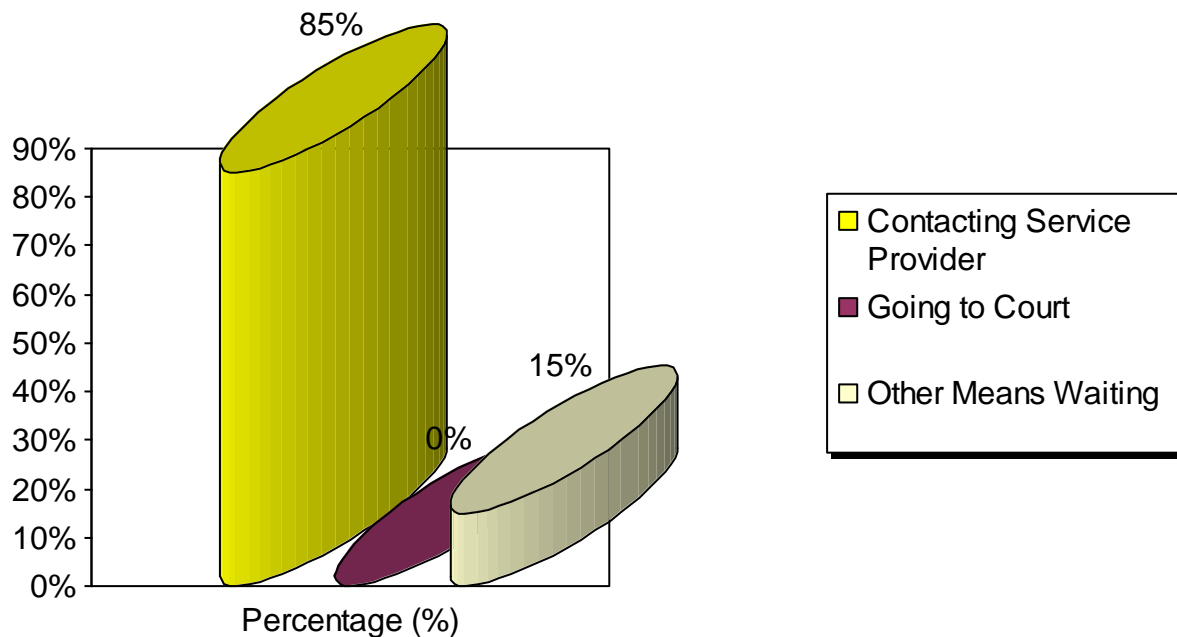
System Challenges

Ways Respondents Dealt with Mobile Money Problems

Since the majority of the respondents experienced challenges while using mobile money, the study sought to establish how customers tried to mitigate the effects of such problems. 85% of respondents were revealed that they called the service provider to inquire about such problems while only 15% preferred to wait for the problem to resolve itself. However, it was interesting to note that none of the respondents had gone to the court regarding a problem relating to mobile money.

[1] interview, Oct 2019

[2] interview, Oct 2019

[3] interview, Oct 2019

Solutions to Mobile Banking Problems

CONCLUSION

In the end, the researcher can conclude that mobile banking is an efficient tool, which can be used to facilitate financial transactions and payment transactions. In order to enable a wide use of mobile banking, it has to be of easy usage and apply to all types of mobile phones. And of course, it has to be cheaper for all mobile subscribers. In this way, mobile banking can have a large acceptance. However, challenges have to be considered, such as technological acceptance, trust, system, risk, traditional ways of conducting financial transactions and the massive use of cash in developing countries. Nevertheless, we think that mobile banking is able to enhance economic development by facilitating financial transactions. However, it has to be noted that mobile banking will not replace traditional banking, but is only able to fulfil a position.

Recommendations

A number of recommendations can be drawn from the findings. The focus should be on the need to introduce new Regulations relevant to mobile money transfer services as most of the regulations were adopted from the Banking Act. It is critical that the government comes up with adapting made regulations that suit the mobile money transfer facility. For example, cases of fraudulent withdrawals from consumers' e-wallets have been on the increase and funds sent to the wrong recipients if used are almost impossible to recover. For that reason, there is a need to ensure that the security of funds is guaranteed and the right legislation is in place to ensure that there is redress for those who may fall victim to these scammers as well as legislation intended to scare would-be offenders.

The researcher again recommended that Mobile Money Transfer should be made to be user friendly and users should be given notice of any system failure and network challenges at all times Last but not least, the researcher recommended that Mobile Money Transfer providers should educate users on the benefits attach to Mobile Money Transfer so as to able users to enjoy maximum benefits from Mobile Money Transfer services.

References

AJZEN,I. AND M. FISHBEIN. (1980.). *Understanding Attitudes and Predicting Social Behavior.* Englewood: Prentice-Hall, Englewood Cliffs, NJ.

Anyasi, F. I. and Otubu, P. A. (2009). Mobile Phone Technologyin Banking System: It‟s Economic Effect. *Research Journal of InformationTechnology* .

Ayo C. K, Ukpere W. I., Oni A., Omote U, &Akinsiku, D. (2012). A prototype mobile money implementation in Nigeria. *AfricanJournal of Business Management* , 6(6), pp. 2195-2201. DOI:10.5897/AJBM11.2213.

Banda, P. (2011). *Mobile Money, the New Face of Banking*. Retrieved from http://mobilemoneyafrica.com/mobile-money-the-new-face-of-banking,

Birch et al. (2008). Payments andinclusion: From branchless banking to Bankless Banking. *Journal of InternetBanking & Commerce* , 13(3), 1-5.

Bush,T. & Glover, D. (2003). *School leadership: Concepts and evidence.* Nottigham, UK.

Buyer and lenders. (2006). *Internal control measures andfirm‟s operational efficiency‟ Central Bank of Kenya CBK(2011). BankSupervision: Annual Report 2011.*

Cecchetti, S. G., Schoenholtz, K. L., & fackler,J. (2011). *Money,Banking, and Financial Markets (3rd edition ed.).* New York:: The McGraw-Hill.

Dalmar, M. (2015, Feb 11). *Mobile Money: The Case for Somalia.* Retrieved October 2019, from www.wardheernews.com

Davidson, N. & Pénicaud, C. (2012). *State of theIndustry: Results from the 2011 Global Mobile Money Adoption Survey,GSMA,.* London.

Davis, F. (1986). *A technology acceptance modelfor empirically testing new end-user information systems: Theory and results.* Massachusetts, United States: Sloan School of Management, MassachusettsInstitute of Technology.

Davis, F. D. (1989). Perceived usefulness, perceivedease of use, and user acceptance of information technology. *MIS Quarterly* , 13(3), 319-340.

Davis, F. D., Bogozzi, R., P., & Warshaw, P., R. (1989). User acceptance of computer technology: A comparison of two theoreticalmodels. *Management Science* , 35, 982-1003.

Donner, J. and Tellez, C. A. (2008). Mobile Banking andEconomic Development: Linking Adoption, Impact and Use. *Asian Journal ofCommunication* .

Donner, J., & Tellez, C. . (2004). Mobile bankingand economic development: Linking adoption, impact, and use. *Asian Journal ofCommunication* , 18 (4), 318-322.

E Amin , M. (2005). *SocialScience Research.* Kampala, Uganda: Makerere University Printery.

Ensor, B., Montez, T. and Wannemacher, P. (2012). *The state of mobile banking.* Forrester Research, USA.

Ferber. (1974). *Handbookof Marketing Research.* New York: McGraw-Hill.

Georgi, F. / Pinkl, J. (2005). *Mobile Banking in Deutschland – DerzweiteAnlauf, in*. Retrieved from Die Bank, Berlin, Issue 3/2005, pp. 57-61: http://www.diebank.de/media/032005/0503-thema.pdf, 08.03.2005.

Hohenberg, H. E. / Rufera, S. (2004). Das Mobiltelefon ALS Geldbörse derZukunft – Chancen undPotentiale des Mobile Payment (M-Payment),in:. *der markt:Zeitschriftfür Absatzwirtschaft und Marketing, Wien* , 43(168), 2004/1, pp.33-40.

Howcraft, Bacett. (2006). *Relationship in productivity ofOperations, marketing strategies, and the use of information technology.*

Hughes, N., & Lonie. S. (2007). M-Pesa: MobileMoney for the "Unbanked", Turning Cell Phones into 24-hour Tellers in Kenya. NickHughes and Susie Lonie innovations. *Winter and Spring* .

Jenkins, B. (2008). *DevelopingMobile Money Ecosystems.* Washington D.C.: IFC and the Harvard Kennedy School.

Johnson, Brown, and Fouillet. (2012). *Corporate governance andbank performance in Nigeria. Diss.* Stellenbosch: University of Stellenbosch.

Lawack, V. (2013). Mobile money, financial inclusion and financial integrity: the southafrican case. *washington journal of low, technology & arts* , 8 (3),317-346.

Lin., H. (2011). "An empirical investigation of mobilebanking adoption: The effect of innovation attributes and knowledge-basedtrust,. *International Journal of Information Management,* , Vol. 31, No. 3:252-260.

Lonie. (2010). *Finding New Ways to Serve the Unbanked in Kenya."Innovations in Rural and Agriculture Finance, ed. Renate Kloepping-Todd andManohar Sharma. Brief 8, Focus 18.* Washington, DC: International Food PolicyResearch Institute and World Bank.

Luarn, P., & Lin, H., H. (2005). *Toward anunderstanding of the behavioral intention to use mobile banking." Computers IHuman Behavior, 21, 873-891.*

Luber, A. (2004). *Kundennutzen und Vertriebsimplikationen mobileVertriebs technologienim Wertpapiergeschäft, 1.Edition.* Wiesbaden.

Lyman and Scott. (2006). *The internal audit control function andits implication for risk assessment by the external auditor. A case of quotedcompanies* .

Maimbo. (2010). *Influence of Service Quality Differentiation Strategy on Customer Loyalty in Commercial Banks within Nakuru Municipality.* Egerton University, Kenya: Unpublished MBA Project.

Mangudhla, T. (2012). *Zimbabwe: Mobile Phone MoneyServices on the Rise*. Retrieved October 2019, from http://allafrica.com/stories/201212160093.html

Mas, Ignacio and Dan Radcliffe. (2010). *ScalingMobile Money.* Bill and Melinda Gates Foundation.

Michaels, L. (2011). *It"s better than cash: Kenyamobile money assessment market. .* Retrieved October 2019, from http://www.merchantpro.co/betterthancash.pdf

Mohamed, H. (2013). *Electronic transfers improveSomalia economy.* Retrieved 2019, from http://www.aljazeera.com/indepth/features/2013/08/2013831141614925682.html

Morawczynski, Olga. (2009). Exploring the usage andimpact of "transformational" mobile financial services: the case of M-PESA inKenya. *ournal of Eastern African Studies* , 3(3):509-525.

MorawczynskiO., Miscione G. (2008). Examining trust in mobile banking transactions: The caseof M-PESA in Kenya. In: Avgerou C., Smith M.L., van der Besselaar P. (eds)Social Dimensions Of Information And Communication Technology Policy. HCC 2008.IFIP International Federation for Information . *Springer,Boston, MA* , vol 282.

Munyoro, G and Matinde, M. (2016). The Significance of Plastic Money to the Hospitality Industry: A Case Study ofRainbow Towers Group of Hotels (RTG). *esearch journali's Journal of Economics* , ISSN 2347-8233; Vol. 4, No. 5.

Nor, m. i. (2010). the first mobile money in theinformal economy of somalia. *Somali Business Reveiw* , 3 (10), 9-12.

Okiro,K. & Ndungu, J. . (2013). The Impact of Mobile and Internet Banking onPerformance of Financial Institutions in Kenya. *European Scientific Journal* , 9(13): 1857-7431.

Omwansa, T. K. (2009). *M-PESA: Progress and prospects.Innovations case discussion:M-Pesa.* Nairobi: Unpublished MBA thesis University of Nairobi.

Osman, H. (2012). *Telecom: Somalia's successindustry. Hogan Lovells.* Retrieved November 2019, from http://shuraako.org/report/telecom-somalias-success-industry

Pelkonen and Dholakia. (2002). *Understanding Emergent M-commerce Services by UsingBusiness Network Analysis: the Case of Finlan.* Rhode Island: Research Institute forTelecommunications and Information Marketing, Working Paper, University ofRhode Island.

Porteous. (2009). *Key Issues in Design and Implementation of Surveys on FinancialInclusion Presented at the Alliance for Financial Inclusion Global PolicyForum. Nairobi, September 15*. Retrieved 2019, from www.afi-global.net/downloads/GPF_David_Porteous.pdf

Ramayah, T. & Ignatius, J. (2005). Impact ofPerceived Usefulness, Perceived Ease of Use and Perceived Enjoyment onIntention to Shop Online. *ICFAI Journal of Systems Management (IJSM)* , Vol. III,No. 3, pp. 36-51.

Saliu, I. (2015). *ASSESSING THE IMPACT OF MOBILE MONEYTRANSFER SERVICE ON THE SOCIOECONOMIC STATUS OF THE MOBILE MONEY VENDORS:CASE OF KUMASI METROPOLIS* .

Saunders, N. K. (2000). *ResearchMethods for Business Students, (2nd Ed.).* Essay,England: Financial Times/Prentice Hall,.

Sayid, O., Echchabi, A., & Abd. Aziz, H. (2012). *Investigating Mobile Money Acceptance in Somalia: An Empirical Study*. Retrieved November 2019, from PakistanJournal of Commerce & Social Sciences; 6(2), 269-281: http://www.jespk.net/publications/87.pdf

Sayid, O., Echchabi, A., & Abd. Aziz, H. (2012). Investigating Mobile Money Acceptance in Somalia: An Empirical Study. *PakistanJournal of Commerce & Social Sciences* , 6(2), 269-281.

Schofield,E. & Kubin, G. (2002). On Interfaces for Mobile Information. *Human-Computer Interaction with Mobile Devices(MobileHCI).* Pisa.

Spence, R., & Smith, M. L. (2010). ICT, development, and poverty reduction: Five emerging stories. *Information Technologies & International Development* , 6(SE), 11–17.

Stanoevska-Slabeva, K. (2003). *Towardsa Reference Model for M-Commerce Applications*. Retrieved 2019, available: http://www.hec.unil.ch/ yp/Terminodes/papers/03-ECISSG.pdf,

Stephen et al. (2007). *The Mobile Commerce Prospects:A Strategic Analysis ofOpportunities in the Banking Sector.* Hamburg: Hamburg University Press.

Streubert-Speziale,H.J. and Carpenter, D.R. (2003). *Qualitative research in nursing: Advancingthe human imperative.* London: Lippincott Williams andWilkins.

Suoranta, M. (2003). *Adoption of Mobile Banking in Finland. Doctoral Dissertation.* Lievestuore: JyväskyläUniversity Printing House, Jyväskylä and ER-Paino.

Tashakkori,A. and Teddlie, C. (1998). *Mixed methodology: combining qualitativeand quantitative Approaches.* California.: SagePublications, Thousand Oaks,.

Tiwari, R., &Buse, S. (2007). *The MobileCommerce Prospects.* Hamburg : Hamburg University Press.

Tobbin, P. (2011). *Modeling adoption of mobile moneytransfer: A consumer behavior analysis. Mobile 4 Development, Kampala*. Retrieved 2019, from http://vbn.aau.dk/files/43733959/TOBBIN_paper_m4d_1.pdf

United Nations Conference on Trade and Development(UNCTAD) . (2002). E Commerce and Development   Report 2002. *Trade and Development,*, (pp. Item ID=2642&lang=1, 11.12.2004.). NewYork and Geneva.

Vaughan, P. (2007). *early lessonsfrom the deployment of M-PESA, Vodafone's own mobile transactions service. InD. Coyle (Ed.), the transformational potential of m-transactions (Vol. 6, pp.6-9),*. London: Vodafone Group.

Venkatesh, V., & Davis, F. D. (1996). *A model ofthe antecedents of perceived ease of use: Development and test. DecisionSciences.*

Wahyuni, D. (2012). The Research design maze: Understanding paradigms, cases,methods and methodologie. *JAMAR,* , Volume 10, No. 1, 2012.

Wang, C., Lo, S., & Fang, W. (2008). Extendingthe technology acceptance model to mobile telecommunication innovation: Theexistence of network externalitie. *Journal of Consumer Behavior* , 7(2),101–110. DOI: 10.1002/cb.240.