

**OPERATIONAL RISKS IN ALTERNATIVE BANKING CHANNELS  
IN KISUMU COUNTY, KENYA**

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## DECLARATION

This project is my original work and has not been presented for a degree in any other university.

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This research project was been submitted for examination with my authority as the University supervisor.

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## **DEDICATION**

I dedicate this project to my dad Augustine Nguku Ndaru who taught me to work hard to achieve my goals, my mom Sabina Kabwagi and my brothers, sisters and friends who have shown love, support and encouragement during the entire research process.

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## ACRONYMS AND ABBREVIATIONS

<b>ABCs</b>	:	Alternative Banking Channels
<b>ADD</b>	:	Agent Due Diligence
<b>ATM</b>	:	Automated Teller Machine
<b>CBK</b>	:	Central Bank of Kenya
<b>CDD</b>	:	Customer Due Diligence
<b>E-BANKING</b>	:	Electronic Banking
<b>ICT</b>	:	Information Communication Technology
<b>IT</b>	:	Information Technology
<b>KBA</b>	:	Kenya Bankers Association
<b>KYC</b>	:	Know Your Customer
<b>NPS</b>	:	National Payment System
<b>PIN</b>	:	Identification Number
<b>POCAMLA</b>	:	Proceeds Of Crime and Anti Money Laundering Act
<b>POS</b>	:	Point-of-Sale
<b>RTGS</b>	:	Real Time Gross Settlement
<b>SI</b>	:	Security Indicators
<b>SMS</b>	:	Short Message Service
<b>TAM</b>	:	Technology Acceptance Model
<b>UN</b>	:	United Nations

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## ABSTRACT

Business done through the internet and other upcoming technologies is giving the banks a competitive advantage by dropping the operational cost while giving the best customer satisfaction by meeting these customer's needs through the provision of quality services. Alternative banking channels are here to stay due to the many benefits they bring into the Kenyan banks operations environment for instance, reduction of costs in terms of staffing costs, rented space cost since customers don't need to physically visit the banks, flexible hours of service for example being able to transfer funds irrespective of the time especially with the mobile banking, agency banking that operate beyond the 8:00 to 4:00 normal banking hours and the deposit taking ATMs. There exist literature on the various benefits and challenges of ABCs but there is a knowledge gap in regards to how operational risks in these alternative banking channels can be mitigated. The study's main aim was to investigate the various operational risks in alternative banking channels, how these operational risks affect the bank and its customers and the various measures set in place to manage these operational risks by banks and the various regulatory authorities. The study's purpose and objectives was attained by adoption of descriptive survey design. The study targeted commercial banks and agents. The study made use of the questionnaire for data collection and was carried out on 238 respondents who were given a questionnaire to fill. However, only 205 filled and returned the questionnaires which makes the rate of responses to be 86.13%. The study revealed that the following operational risks affect the alternative banking channels. They include: internal and external fraud, non-compliance issues, inadequate staff training, failed systems and transactions, staff errors and omissions, financial crisis and customer attrition. Key findings from one-sample t test indicate that almost all factors under consideration in this study registered a mean score of more than three, which suggests that these mean score are statistically significant from the mid-point (3).The implication of this is that most respondents felt that the operational risks actually affect the alternative banking channels to a larger extent within banks in Kisumu County, Kenya. Therefore, Banks in Kisumu County, Kenya are affected by the same operational risks. However, there occurs significant difference in the type of alternative banking channels in Kisumu County, Kenya. . The researcher suggests that further research should be done on the challenges to managing operational risk affecting alternative banking channels. Moreover, the study suggests that future studies on operational risk should focus on bank headquarters since most of the banks alternatives banking channels are centrally managed.

# CHAPTER ONE: INTRODUCTION

## 1.1 Back ground of the Study

Operational risks are “the risk arising from human and technical errors and accidents (Jorion, 2000) According to Mutunga (2013) the operational challenges are those that directly or indirectly affect the transformation of innovative ideas of products and services that are satisfactorily delivered to customers, within an organization. The Basel Committee on Banking Supervision (2006) describes operational risks as “the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events. This definition includes legal risks but excludes strategic and reputational risks.” Therefore operational risks are the risks that a company undertakes when it attempts to operate within a given field and includes risks resulting from breakdown in internal procedures, people and systems. These risks cannot be fully eliminated as long as the people and systems remain imperfect but they can be managed.

There are a few theories considered in this study and they are the operational risks theory where we assume the simplest economic asset and allocate operational risks and formulate optimal decision for minimising those risks. Here, operational risks are seen to be as a result of inadequate implementation of the models that financial institutions adopt (Basak, Buffa 2015). Other models considered are the six sigma model, technology acceptance model and the agency theory.

Alternative Banking Channels (ABCs) are currently being adopted by banks in Kenya to increase the accessibility of the banking services to customers. Customers can now transact at their own convenience and this means that the banks have become more

flexible in meeting the customers' needs. ABCs are substitute options for processing bank transactions other than the usual traditional banking methods and it includes virtual banking, ATMs, Internet Banking, Mobile Banking, SMS Banking, POS etc. "Businesses, in order to compete in the complex environment are forced to deliver the newest and most attractive services that their customers are demanding" (White and Harrison, 2004). However, even with the above mentioned conveniences brought about by the ABCs to the customers, there exists several compliance issues that needs to be managed in order to minimise the various operational risks brought about by the multi-channel banking. This is because, lack of face to face contact with the customer brings about the greatest limitations to ABCs, because right customer can only be identified by unique ID issued to the user and password rather than by face to face identification. Customers must be made to feel confident about the privacy and security issues (Jasimuddin, 2004).

### **1.1.1 Operational Risk**

Operational risk is defined by the Basel Committee on Banking Supervision (2006) as "the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events." Therefore, operational risks are those risk that may arise as a result of legal actions taken against an organisation, material and financial losses, or damaging the reputation of the Bank as a result of its failure to comply with laid down laws and its own set of procedures or its code of conduct and other ethically set standards of good practice. Operational risks can sometimes be said to be integrity risk, because a Bank's reputation is closely associated with its observance of already set ethics

of integrity and impartial dealing. Nonetheless with the substantial benefits of electronic banking and its proficiencies, there exists risks and challenges that are acknowledged and should be managed by banks in a prudent and specialized way (Mutunga, 2013)

Operational risk is as a result of many different internal and external events. The external events can be power failures, floods, terrorist attacks and even earthquakes. Apart from the external events, operational risk can rise from internal events such as the internal failures or shortfalls in any of the bank's processes and systems for example its IT systems. Lack of a risk and compliance management, poor human resources management processes and systems, or poor outsourced service providers for example bank agents and offsite ATMs can also result in operational risks. Business done on the internet or e-commerce is giving a competitive advantage to the banks by lowering the banks operational cost and providing unsurpassed satisfaction of customer needs through delivery of quality services (Mutunga, 2013).

Top management have the responsibility of instituting and maintaining a firm's total compliance procedures. Banks supervisors should be tasked with the responsibility to watch over business operations and they should have the authority to control staff activities to achieve full compliance with already laid down policies and set laws (White Paper, 2005) therefore the top management should ensure that Execution, delivery and process activities are done properly e.g. data entry errors are minimized, that there is no incomplete legal documentation, there is no unapproved access given to client accounts, and that the various disputes raised by vendors are minimized. According to Mulu (2013) Process Risks are those ones caused by failed processes and procedures examples includes ,insufficient documentations, transactions errors ,wrong documentation

procedures ,lack of in build controls and procedures, marketing errors, money laundering and incorrect or insufficient regulatory reporting. This should be emphasized especially at the banks agents where they fill accounts opening forms and care should be taken because wrong data entry for example for mobile number and email address will lead to customer's information being accessed by the wrong person.

The system is also a big contributor to operation challenges because it leads to business interruptions, failures of the systems that is, both hardware and software failures, and problems in tele-communication for instance when a customer wants to transact via mobile phone and due to network issues the transaction is incomplete for several hours. Mutunga (2013) established that, indeed the top management commitment, qualification of ICT personnel, the operational risks and ICT Policy that support e-banking implementation affect the implementation of e-banking. This will therefore reduce the systems risk which according to Mulu (2013) is the risk associated with the use of technology as a system and it is manifested through: Data corruption, Data entry errors, inadequate change control, inadequate project management and programming errors.

Therefore the Knowledge of Operation challenges in the implementation of e- banking acts as an acumen into the critical factors that must be dealt with in order to increase the complete adoption and total acceptance of electronic banking services in the bank operations function (Mutunga, 2013).Some of the operational risk events that can lead to losses are people related risks and as (Mulu, 2013) puts it, people risks is associated with the people employed in the institutions. Examples are misrepresenting of positions and wrong reports, internal or employee theft and external fraud, for example forgeries, computer hacking and cheque kiting. Others include total disregard to the already set

Bank policies and procedures, policy guidelines, rules and various regulations, as well as inappropriate use of already existing control measures especially when it comes to issuance of ATM cards and Pins to third parties or giving information online to third parties.

By ensuring full compliance to the laid down procedures and also enhancing the policies and procedures in order to accommodate the fast growth in the use of electronic banking and the dissimilarities between electronic and paper focused processes, then, the Operations risk coming up from internal and external frauds, human and system processing errors, frequent system disruptions, or other unanticipated events that consequently lead to the channels incapability to provide expected services to the customers will be minimised and thereby the quality of customer service will be enhanced. If the quality of customer service is poor, the banks would surely not subsist in long run (Jasimuddin, 2004).

### **1.1.2 Alternative Banking Channels**

Plastine (2009) defined ABC as performing financial transactions through electronic means, instead of physically walking into a bank and it includes using ATM card and visa card, online or internet banking, Agency banking and Mobile banking. The current emerging trend of service delivery to customers is now supported by numerous interactive technologies, such as mobile applications and use of internet services leading to the advent of multichannel systems for use by customers and various multi interface service systems (Patricio et al, 2003). Therefore Alternative banking is another way to



refer to electronic banking which according to Kaleem (2008) it reduces the cost of transactions and saves time, reduces the various inconveniences, provides an up to date information for customers, promotes operational efficiency, reduces human resource requirements, enables quick responses and feedback, improves service quality and diminishes the risk of carrying cash.

This therefore explains why most banks in Kenya are adopting the ABCs since they reduce the cost of staff, and the total cost of services to customers thereby increasing the affordability of these services without affecting the bottom line and also increases efficiency and the turnaround time of service delivery. A customer can transact from the various Agents around the country, make purchases using the POS at the supermarkets and do online purchases using their Visa cards. These channels have allowed the customer to access such services like cash withdrawal, change of personal identification number or PIN, requests for mini statements, balance enquiry and transfer of funds to other Bank accounts linked to the platform. Mobile banking allows customers to makes payment of utility bills, make request for personal and business Cheque books, apply for salary advances and also request for account Statements through SMS banking. Financial services done through the Internet may be offered in a similar way like the traditional banking but with lower costs and to more prospective customers (Jasimuddin, 2004). With internet banking, Payments of taxes, online transfers and RTGS has become very attractive to customers since they reduce costs, they enhance delivery speed and they are flexible.

However despite the many benefit of the ABCs, there exist challenges that may hinder full adoption by customers. There are risks associated with them for example operational

risks and performance risks due to the malfunction of the systems and network problems and therefore it lacks the guarantee offered by traditional banking services where there is assurance that services will be accessible by the customer irrespective (Lee *et al.*, 2009). These operational risk that associated with alternative business channels are for example: Internal fraud where employees steal from the customer or bank. External fraud where fraudulent clients steal from the bank or from other clients or non-clients stealing from the bank clients through forgery, hacking of the system and various forms of identity theft which leave the bank and its innocent customers as the unfortunate victims.

Non compliance with regulations can end up being very expensive reason being that the cost of noncompliance to these rules can be very damaging to the bank. For example processing errors which leads to losses due to poor systems or failed transaction processing mechanisms. Others include poor management of the process especially due to individual mistakes made by employees or due to a poor process itself. There could also be Information security breaches for example where identity theft maybe in the form of using of a credit card to make purchases online, e-mail requesting for statements or for funds transfers or personal messages sent to wrong mobile numbers and this is a substantial operational risk that causes extreme concern for the banks, its employees and its customers and therefore its effect will be highly felt than that of a processing error or even that of rendering poor service to clients. System failures could also cause a disruption to the ABCs. Inappropriate business practice relating to how bank staff conduct business and relate to customers especially at the various agents for example false advertising and customer handling procedure in case of queries. According to Mutunga (2013) it is therefore, important that customers understand what they can

reasonably expect from a product or service and what risks and benefits they incur when using them.

## **1.2 Research Problem**

There is need to manage the operational risks arising from the use of various alternative banking channels. According to Gallo (2009) there is indications that the introduction of the compliance function in already existing units has brought in significant changes within the systems; these changes have mainly concentrated on the widening of the operational and regulatory responsibilities. Gallo (2009) further notes that even when compliance functions are managed through a specifically fashioned structure, it will be essential to carefully and undoubtedly pinpoint the responsibilities and competences assigned to it. This therefore shows that irrespective of the many benefits of alternative business channels, there is need to manage the various operational risks arising from the use of these channels through ensuring compliance by various external agents, bank staff, and customers. The risks are dynamic since people are learning new ways of defrauding customers and banks especially with advanced technologies. The Basel Committee itself affirms that “there is a close relationship between compliance risk and certain aspects of operational risk” (Basel Committee, 2005: 8) therefore when a new product is being approved the operational risk associated with that new product, the activities, processes and the systems involved needs to be identified and assessed, and the various mitigating controls put in place to ensure full compliance is maintained and therefore less operational risks.

Alternative banking channels are here to stay due to the many benefits they bring into the Kenyan banks operations environment for instance, reduction of costs in terms of staffing costs, rented space cost since customers don't need to physically visit the banks, flexible hours of service for example being able to transfer funds irrespective of the time especially with the mobile banking, agency banking that operate beyond the 8:00 to 4:00 normal banking hours and the deposit taking ATMs. With advanced technology also the quality of the banking services improves through the adoption of the ABCs to keep up with the current emerging trends for example POS service where the customers doesn't need to pay cash when shopping or visiting an eatery or fuel station. According to Mutunga (2013) The E-banking facilities which include Automated Teller Machine (ATM), SMS banking, mobile (m-banking) and Internet banking are among devices making banking very easy and convenient comparable to the traditional way.

There exist literature on the various benefits and challenges of ABCs but there is a knowledge gap in regards to what the operational risks in these alternative banking channels are and how can they be mitigated. This gap needs to be bridged in order for banks to manage loss that may occur from errors and omissions, frauds and system failures and therefore build customer confidence in the ABC channels. This study therefore seeks to identify the various operational risks that arise after adopting the various alternative banking channels and the control measures put in place by banks in order to mitigate against them. The research question therefore is "What are the operational risks involved in the adoption of the various alternative banking channels and what are the control measures put in place by the banks and other regulatory institutions in mitigating these operational risks?"

### **1.3 Research Objectives**

The study's main aim was to investigate the various operational risks in alternative banking channels in Kisumu county Kenya and any steps taken by the banks and other regulatory authorities in mitigating these risks.

### **1.4 Value of Study**

Technological innovations is here to stay in the banking industry as the players seek flexible, faster, efficient and cost effective methods of satisfying their customer's needs. And with these new product advancements there is need to ensure operational excellence is maintained at all times through management of operational risks in order for the banks to achieve their overall strategy and maintain a competitive advantage and therefore this study can be beneficial to various interest groups. The study may contribute to operational risk theory building by providing literature for other studies on operational risks management and academicians may find useful research gaps that may stimulate further research in the future.

The management may realize how effective management of operational risks can lead to minimized customers' complaint on alternative banking channels services and thereby increase the customers adoption and confidence in ABCs leading to a further banking operations efficiency and cost reduction brought about by the traditional banking mode of operation. Employees may learn new ways to minimize operational risk and also educate the customers on what is required of them in order to minimize loss of time and money when using the various alternative banking channels.

The study may also assist various policy makers to enhance their policy and procedures guidelines in order to take into consideration the dynamic advancement in technology and risks arising from these technological advancements so that they can add more policy requirement to strengthen control and or modify them to fit the new operating environment. It can also help the regulators identify areas of noncompliance and thereby ensure more controls are put in place to ensure all the stake holders abide by the set regulations and guidelines because this is the only way that alternative banking channels can be made to be more fast and efficient, customer friendly, less risky thus minimizing losses in terms of frauds, increasing the customer's confidence levels in these alternative banking channels and reducing customer attrition in banks.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Introduction**

The chapter presents relevant literature on the thematic areas of study. The areas considered for the review include theoretical literature, compliance and operation risks in alternative banking channels, and empirical review. In addition, the chapter presents the study's conceptual framework.

### **2.2 Theoretical Review**

Various theories have guided some of the research on alternative banking channel's operation risk. In this study, four theories are reviewed. According to the Credit Suisse Group(2001) operational risk may manifest itself in the forms of ;business disruptions, control failures, errors, misdeeds or external events and can be categorized as; organizational risk, process risk, technology risks, human risks.

#### **2.2.1 Operational Risk Theory**

According to (Basak & Buffa, 2015) by considering the simplest possible economic setting in which we incorporate a notion of operational risk into, an optimal decision is formulated whereby the financial institution which is our economic agent accounts for the presence of operational risk. The financial institutions have to rely on a model to make investment decisions. Operational risk arises from the insufficient implementation of these models that the financial institutions adopt to perform their financial operations. This inadequacy in implementation can be caused by different types of errors, mistakes in

data collection and processing and system programming codes. Therefore financial institutions need to keep updating its models often in order to safe guard itself from the operational risks especially since there is always new emerging information and changing operating environment.

There are two ways of modelling operational risks, the top down approach and the bottom up approach. According to (Chernobai et al., 2007)the top down approach seeks to quantify losses at a macro level without identifying the event or causes of these losses while the bottom up model seeks to quantify these operational risks at a micro level by understanding the internal operational risk event and how and why they are caused.

### **2.2.3 Agency Theory**

Agency theory postulates that the firm consists of a contract between the owners of economic resources (the principals) and managers (the agents) who are charged with using and controlling those resources (Lambert, 2002).The theory of agency was first explicitly modelled by Jensen and Meckling (1976) in their study of the structure of the firm. Agency theory covers all interactions involving cooperative effort and assigning of work and decision making by one party referred to as the principal to another party known as the agent. Jensen and Meckling (1976), cited by Lambert (2002), describe an agency relationship as “a contract in which one or more persons, the principal(s), engage another person, the agent(s), to take actions on behalf of the principal(s) which involves the delegation of some decision-making authority to the agent.” It is perceived as undisputable that an uninformed principal can benefit from the assigning of various roles



to an informed agent and that it is best for an uninformed principal to do so given their lack of skills, information in regards to that role, qualifications to perform, knowledge and experience (Bendor *et al.*, 2001).

According to Lambert (2002), “agency theory is based on the premise that agents have more information than principals and that this information asymmetry adversely affects the principals’ ability to monitor effectively whether their interests are being properly served by agents.” He also notes that this theory assumes that “principals and agents act rationally and that they will use the contracting process to maximize their wealth.” In the most modest agency models, the institution is reduced to these two contracting individuals that is, the principal and the agent where the principal’s role is to supply enough capital, to bear the risks associated with the delegated roles, and to create incentives, while the role of the agent is to make decisions on behalf of the principal’s and to bear a few risk associated with the roles delegated to them (Lambert, 2002). In this study, the registered commercial banks are regarded as the principals while the alternative channels they adopt perform the agency duties.

### **2.2.3 Technology Acceptance Model**

This model was originally proposed by Davis in 1986 and it has been used to explain the user behaviour in adoption of technology. According to Davis (1989) TAM explained why a user accepts or rejects a certain technology. He identified three major determinants of technology acceptance that relate to cognition and effectiveness. He began with the theory of reasoned action (TRA) which according to Ajzen and Fishbein (1980) TAM is extended from.

The theory of reasoned action according to Ajzen and Fishbein (1980) suggests that a person's behaviour is determined by their intentions and that a person's intentions is a function of his attitude towards the behaviour and his subjective norms. Davis adapted this as a basis for extension and causal links between perceived usefulness, perceived ease of use, attitude towards using technology and behavioral intention to explain technology adoption. Davis (1989) users are only willing to adopt a system that has critically useful functionalities.

#### **2.2.4 Six Sigma Model**

The model focuses on organizations reducing the variations in their products and fluctuations in their processes thereby enabling the management of the organization to predict the outcome of a process. With the current globalization, competitive business environment and instant access to information, service delivery has changed and how customers conduct business has also changed.

Several authors have referred to the story of Six Sigma and its advancement at Motorola and also its projected savings in numerous types of industries. Six Sigma was invented at Motorola in the 1980s (Barney, 2002; Delsanter, 1992). "the benefits of Six Sigma include but are not limited to cost reduction, customer satisfaction improvement, and sales revenue growth" (Pande et al., 2000). It can be used in operations management to reduce errors and analyse the efficiency and quality of the service production.

Six Sigma is the most recent in a long line of techniques used to achieve quality and performance improvement. huge financial gains have been claimed from its combination

of rigorous process improvement methodology, highly trained operatives and bottom-line focus (Hoerl, 2001). According to Hendricks and Kelbaugh (1998), six sigma reduced the number of defects in Motorola and can be used in banks and other service industry. Six Sigma is strongly sustained by the theoretical concept of zero defect. According to Crosby (1979), “defects cause waste, rework, or scrap, and eventually lead to customer dissatisfaction.” If a process can attain a Six Sigma quality level, it will accurately produce a product with no defects whatsoever. This will reduce various waste and also minimize costs but improve greatly the customer satisfaction. Researchers have stated that “users’ satisfaction is an essential determinant of success of the technology-based delivery channels” (Tong, 2009).

### **2.3 Empirical Literature**

“Technological innovations in banking provide many efficient alternative delivery channels to customers” (Frei et al, 1998). “Alternative banking services are highly depends on technology and high-tech communication system” (Srotriya, 2007, Verner, et. al. 1989). As evidenced by the various studies, increase in IT advancements has led to higher rate of alternative banking channels adoption especially with the increased globalization. Yibin (2003) argued that “e-banking provides borderless banking services throughout the world where the internet connectivity is available”. According to Singhal and Padhmanabhan (2008), “users of ICT based banking expect Convenience, Flexibility, user friendliness, Reliability, Real time access, Cost effectiveness, Alternative Options, Security and Privacy, Speed and Continuity, Anytime and anywhere banking facilities.” Mutunga (2013) notes that, “notwithstanding the significant benefits of Electronic

banking and its capabilities, it carries risks and challenges that are recognized and need to be managed by banking institutions in a prudent and professional manner.” Kaleem Ahmad (2008) indicates that therefore “customers expect security and trust in e-banking services.” According to Bovey and Hede (2001) “the top management of banks must employ a balanced approach to electronic banking, incorporating technical aspects involved as well as working with the human factor associated with the venture in order to carry it out the process smoothly.” Mutunga (2013) there exists operational challenges arising from e-banking services that the top management of local banks need to look into in order to identify the cause of the negative attitude and adaptability of the e-banking services by the customers.

### **2.3.1 Operational Risks Management**

Operational risks in banking include fraud and defalcation, customer attrition, external disruption, inadequate employee training, computer security, processing errors, non-compliance, contractual risks, and changes in laws and regulations (Gokte 2008). Risk management encompasses policy formulation, risk identification, record keeping and reporting, assessing the value of versus the cost of risk management and most importantly, cooperation with other departments within the organization (Greene & Serbien 1983). There are various factors generating operation risk.

The people aspect where the employees behaviour can become a major source of operational risk. Poorly trained or overworked employees may inadvertently expose the Bank to operational risk through error and non-compliance. Understanding of the mandate, confidence in and respect for the institution as well as adherence to the Bank’s

policies and strategies are key for effective use of human resources. Therefore, the Bank can realize significant improvements in its control of operational risk and reduce exposure if it would invests time and money in creating an appropriate risk culture, in which employees are aware of operational risks and are encouraged to learn from their mistakes. Banks staff being unaware of regulatory requirements could go against the protection laws of a customer, including data collection and privacy and confidentiality of customers' account information may lead the banks to incur huge losses through lawsuits or crimes that are not prosecuted because of jurisdictional disputes (Mols, 2008). According to John Thirwell (2004) operational risk culture is the outcome of a successful implementation of a framework where everybody in the organization is aware about operational risk and how to manage it.

The banks operations are supported by various systems and processes and therefore there is need to ensure these processes reduce the operational risks. The rapid technological advancements and changing customer demands has emphasized the need for high levels of overall system reliability that include the reliability of all human elements, machines, equipment, material handling systems and other value added processes and management functions (Islam et al. 2006). Therefore there is need to review Bank's policies and procedures and place operational risk within the Bank's overall risk management framework. There is also need to participate in the new products approval process, in order to identify and assess the operational risk related to each new product, activity, process and system, and their amended versions to be introduced or undertaken together with operational risk mitigation proposals.

### **2.3.2 Automatic Teller Machine**

Cabas (2001) noted investment opportunities, reduction in costs, satisfaction of customers and competitiveness as motives to install and add new ATM to the existing network. This has led to ATMs becoming more popular as a convenient mode of transaction. They also enhance operations by reducing the cost per transaction and speed of delivery. The cost of a single transaction performed at an ATM is potentially less than the cost of a transaction conducted from a teller, as ATMs are capable of handling more transactions per unit of time than are tellers (Laderman, 1990) and the speed is enhanced as established by Moutinho (1992) that ATM facility resulted in speed of transactions and saved time for customers. ATMs offer customers services that is otherwise not available by internet banking for example a customer being able to withdraw physical cash around the clock. Irrespective of the many benefits of ATMs, there still exist customers who are reluctant to apply for ATM cards and use them to transact mostly because these cards can be stolen, skimmed or duplicate cards printed and then used to defraud customers. This is a major factor that slows progress of the new innovation, that is, the customers concern for security of financial transactions over the electronic means as noted by Mutunga (2013).

### **2.3.3 Agency Banking**

There is an increase of banking agents especially in the rural and suburban areas where the bank branch networks and ATM s have not been availed. According to Ivatury (2006), “a banking agent is a retail or postal outlet contracted by a financial institution or

a mobile network operator to process clients' transactions." This means that Instead a bank teller performing the transaction, it is the owner or an employee of the retail outlet who performs the transaction and lets customers deposit cash, make cash withdrawals, transfer funds to various beneficiaries, pay their utility bills, inquire about their account balances and make POS transactions. Banking agents can be pharmacies, supermarkets, convenience stores, retail shops and many others. These agents equipped with a POS card reader machine, mobile phone, barcode scanner to scan bills for bill payment transactions and PIN pads. "Regulators are the ones who generally determine what kind of, if any, financial institutions are permitted to contract banking agents, what products can be offered at the retail outlets, how financial institutions have to handle cash transport, consumer protection, and other operational areas" (Kumar, 2011).The government through the CBK has come up with Agency Banking guidelines as a means of regulating the agency banking operations and it applies to the financial institutions and their duly appointed agents.

The CBK guideline on agent banking CBK/PG/15 defines an agent as" an entity that has been contracted by an institution and approved by the Central Bank to provide the services of the institution on behalf of the institution in the manner specified in this Guideline." This guideline intends to serve as a set of minimum standards of data and network security, customer protection and risk management procedures to be adhered to when conducting agency banking business and it requires financial institutions to perform a risk assessment of the operations to be performed by the agents including the mitigating measures to be adopted in order to control the risks identified, in accordance with risk management policies currently in force in this guideline. This guideline also states the

permissible activities that an agent can engage in and prohibited activities that an agent shall not engage in. This therefore means that ADD must be well performed before initiating any contract between the financial institution and the agent.

### **2.3.4 Mobile Banking**

The term M-Banking is used to “denote the access to banking services and facilities offered by financial institutions such as account based savings, payment transactions and other products by use of an electronic mobile device” (Tubin, 2010). It is basically an application that permits the customer to use wireless technology and short message service (SMS) to perform their day to day banking transactions. “Mobile banking is a term given to financial activities conducted using mobile devices, such as cellular phones or personal digital assistants” (Cheney, 2008). Contrary to the popular wisdom that mobile phone money services are meant for funds transfer and remittance, Njenga (2010) found that “96% of the citizens use the service as a savings store. Consequently, the visits to the bank only involve those amounts that cannot be effectively undertaken within the deposit and withdrawal limits provided by the service operators.” Though challenges arise where cash transferred takes longer to reflect in the customer’s account leading to delay in access in case of an emergency still, these services are preferred since they are available at finger tips, beyond regular banking hours and this therefore indicates the importance of system availability in mobile banking. Mutunga (2013) notes that “Operational risk of e-banking is the central of system availability and security to the dependability on new technology which provides services”.



According to Muthiora (2015), Mobile money has enabled anyone in Kenya with an access to a mobile phone to perform financial transactions without relying on riskier, less efficient methods like delivering cash in person. He also notes that more than 20 banks are now interconnected with mobile money services and have the license to offer low cost mobile banking services. Muthiora goes on to note that, “Effective financial markets require regulations that bring certainty, foster competition, sustain innovation, and promote ethical and responsible business conduct that upholds the rights of customers.”

The national payment system regulations (2014) gives guidelines on how mobile service providers and banks can offer consumer protection, address consumer complaints by providing customer support lines, maintain privacy and confidentiality of customer’s data and deal with disclosure issues.

### **2.3.5 Internet Banking**

According to Mutunga (2013), although the number of electronic users has increased significantly over the past decade, only a small number of those users have made actual purchases/transactions over the internet. With increased globalization, customers do online purchases, make online payments, and funds transfer even when they are miles away from their bank. According to Pikkarainen, Karjaluoto and Pahnla (2004) internet banking is an internet portal whereby customers can use different variety of banking services ranging from bill payment to making investments. Banks use online banking as it is one of the cheapest delivery channels for banking products (Pikkarainen *et al.*, 2004). But there are operational risks when it comes to transacting via the internet for example

the risk of phishing and authorized access to customer's information which could end up costing the customer and the bank and as Mutunga (2013) notes, security threats can either be internal or external to the system for example system hacking and viruses.

## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.1 Introduction**

This chapter discusses the research methodology that was adopted in meeting intended study objectives. The specific methodology components discussed include research design, target population, sampling design, data collection instruments, data collection procedure, and data analysis and presentation.

### **3.2 Research Design**

The study's purpose and objectives was attained by adoption of descriptive survey design covering all the commercial banks in Kenya. According to Mugenda and Mugenda (1999) research design is the outline plan or scheme that is used to generate answers to the research problems. This design was adopted due to the survey's merit of allowing collection of significant amounts of data from a sizeable population. De Vaus (2002) argues that good description is the basis of sound theory and that unless something is described accurately and thoroughly, it cannot be explained. Descriptive research involves gathering data that describe events and then organizes, tabulates, depicts, and describes the data collected. Descriptive surveys are often undertaken to ascertain attitudes, values and opinions. As Black (2002) notes, however, there may be differences between the opinions found through a survey, which is a description of people's perceptions, and the actual reality of practice. That is, people may articulate a particular view, but in practice behave differently.

### **3.3 Target Population**

A population refers to an entire group of individuals, events or objects having a common observable characteristic (Mugenda and Mugenda, 1999). The study targeted commercial banks and agents which are also licensed and regulated pursuant to the provisions of the Banking Act and the regulations and prudential guidelines issued by the Central Bank of Kenya. There are 42 commercial banks in Kenya but there are only 27 banks and 157 agents in Kisumu County.

The defined target population size is small considering there are only 27 banks in Kisumu currently and it is manageable to do a census. This scope is defined on the basis of the five relevant units of analysis which include operational risk, agency banking, ATM sections, POS transactions, internet banking sections, and mobile banking units. Agency banking, POS and mobile banking are mostly managed by contracted agents who perform these transactions on behalf of the bank whereas the ATMs and internet banking is managed by the banks. Therefore, the defined target population size of agents is 157 and that of managers, operations managers and supervisors is 81 in Kisumu County currently. Therefore, the study adopted a census survey due to the small population size of both groups thereby giving a sample size of 238. According to Dillman (2005) conducting a census often results in enough respondents to have a high degree of statistical confidence in the survey results.

### **3.4 Data Collection**

The study made use of the questionnaire for data collection. The primary data was collected through a well-designed, self-administered questionnaire with closed and open ended structured questions and the content included the various operational risks faced by the banks, how they affect the banks and its customers and the various policies and technological advancements adopted by the banks and other regulatory institutions to mitigate against these risks. The method of data collection using questionnaire provides a high degree of data standardization and adoption of generalized information among the population (Axinn & Pearce 2006).

### **3.5 Data Analysis**

The data analysis was based on descriptive statistics and it integrated both the qualitative and quantitative techniques. Qualitative data analysis was done especially where use of written words was identified. Due to the nature and objects of study, there was a tabulation of data whereby the statistical data was systematically arranged into tables consisting of columns and rows in a logical sequence thereby giving the shape of statistical tables. The descriptive statistics such as the mean and standard deviation were used to review the general trend of the responses. Frequency distribution and percentages were also used to analyse the demographic characteristics of the sampled respondents and findings presented in the form figures with the aid of pie charts. The study also used the one sample t test.

## **CHAPTER FOUR: DATA ANALYSIS, FINDINGS AND DISCUSSION**

### **4.1 Introduction**

The objective of the study was to establish the operational risks that affect the banks in the alternative banking channels and to determine the various measures put in place to manage these operational risks by banks and the various regulatory authorities. To achieve this objective, data was gathered using a semi-structured questionnaire targeting Banks in Kisumu County, Kenya. This chapter presents the research findings.

### **4.2 Response Rate**

The study was conducted on 238 respondents who were served with a questionnaire. However, only 205 respondents filled-in and returned the questionnaires which make a response rate of 86.13%.

### **4.3 Background Information**

The study sought to find out the background information of the study respondents. The study specifically sought to establish how long the bank has been offering the alternative banking channels, the duration the respondents had worked in the bank or agency, the position the respondent held in the bank or agency. The results are as discussed.

### 4.3.1 Work Duration

The study sought to find out how long the respondent had worked in the organization. The results are as shown in Table 4.1. The study found that 48.29% of the respondents had worked for 4-6 years, 31.22% for not more than three years, 13.17% for seven to ten years, 5.37% for eleven to fifteen years and only 1.95% for over fifteen years. Therefore most of the respondents had worked in the banks or agencies long enough to give credible information concerning operational risks and alternative banking channels.

**Table 4.1: Work Duration**

		Frequency	Percent
Valid	0-3yrs	64	31.22
	4-6yrs	99	48.29
	7-10yrs	27	13.17
	1-15yrs	11	05.37
	Above 15	4	01.95
	Total	205	100.0

Source: Research Data (2016)

### 4.3.2 Position Held in the Business

The study sought to find out the position held by the respondents. The results are shown in Table 4.2. Majority of the respondents (69.27%) were agents while the remaining 30.73% were managers, operational managers or their assistants within the banks. This implies that the respondents held positions that were strategic with regard to decision making in the banks or agencies. Therefore, their inclusion or involvement in giving

information with regard to operational risks and alternative banking channels was relevant.

**Table 4.2 Position held by the Respondent**

		Frequency	Percent
Valid	Agent	142	69.27
	Bank staff	63	30.73
	Total	205	100.0

Source: Research Data (2016)

#### **4.4 Operational Risks facing Alternative Banking Channels**

The study sought to determine the operational risks that face the respondents' alternative banking channels. To achieve this objective, respondents were provided with seven (7) descriptive statements with regard to operational risks as per the reviewed literature. The results are shown in Table 4.3. These statements were then used to solicit the respondents' views on a 5 point Likert scale (where 1=not at all, 2= to a small extent, 3= to a medium extent, 4= to a large extent and 5= to a very large extent).

The data analysis entailed one- sample t test at value 3. The test value of 3 was chosen because it was the midpoint of the 5 point Likert scale that was used in the questionnaires. The one-sample t test generated mean scores, t values and significance levels at P=0.05 (95% Confidence level). A t-value above 3 indicates that the operational risk affects the alternative banking channels to a large extent. The mean score value indicates the rating of the operational risk by the respondents as to the extent to which the operational risk affect the alternative banking channels.



**Table 4.3 Operational Risks affecting the Alternative Banking Channels**

<b>Operational risks Situation</b>	<b>N</b>	<b>Mean</b>	<b>t-value</b>	<b>Sig.</b>
Internal and external frauds	205	3.99	5.426	.000
Non-compliance issues	205	3.94	3.272	.000
Inadequate staff training	205	3.67	3.751	.001
Failed systems and transactions	205	3.70	3.898	.001
Staff errors and omission	205	3.57	3.881	.001
System processing errors	205	3.51	3.50	.003
Customer attrition	205	3.77	3.34	.001

Source: Researcher Data (2016)

From the findings on the various operational risks that affect the alternative banking channels, the study revealed that the following operational risks affect the alternative banking channels: internal and external frauds as shown by mean of 3.99, non-compliance issues as shown by mean of 3.94, customer attrition as shown by mean of 3.77, failed systems and transactions as shown by mean of 3.70, inadequate staff training as shown by mean of 3.67 and staff errors and omission as shown by mean of 3.57. It can thus be concluded that all the operational risks mentioned affect the alternative banking channels for banks in Kisumu County, Kenya.

Key findings from one-sample t test indicate that almost all factors under consideration in this study registered a mean score of more than three, which suggests that these mean score are statistically significant from the mid-point (3).The implication of this is that

most respondents felt that these factors are actually operational risks affecting the alternative banking channels to a larger extent.

#### **4.5 Prevalence of Operational Risk**

The objective of this study was to establish the operational risks affecting alternative banking channels in Kisumu County, Kenya. To achieve this objective, respondents were provided with descriptive statements with regard to operational risks as per the reviewed literature. These statements were then used to solicit the respondents' views on a 5 point Likert scale (where 1=not at all, 2= to a small extent, 3= to a medium extent, 4= to a large extent and 5= to a very large extent).

The data analysis entailed one- sample t test at value 3. One- sample t test was carried out because the effective sample was 205, hence appropriate. The test value of 3 was chosen because it was the midpoint of the 5 point Likert scale that was used in the questionnaires. The one-sample t test generated mean scores, t values and significance levels at  $P=0.05$  (95% Confidence level). A t-value above 3 indicates that the operational risk is affects the alternative banking channels to a large extent. The mean score value indicates the rating of operational risk by the respondents as to the extent to which the operational risk affects alternative banking channels. Findings of the study are presented in the following subsections.

### 4.5.1 Internal and external operational risks

**Table 4.4 Internal and external operational risks**

<b>Factor</b>	<b>N</b>	<b>Mean</b>	<b>t-value</b>	<b>Sig.</b>
Compensation to clients due to internal forgery	205	3.23	1.612	.001
Loss to banks in terms of external fraud	205	3.66	3.272	.003
Poor bank reputation due to fraud by staff	205	3.93	5.653	.000
Loss to banks in terms of internal fraud	205	3.80	4.252	.000
Low client confidence due to insider under dealings	205	3.97	6.547	.000

Source: Research Data (2016)

Key findings from one-sample t test indicate that the higher the mean scores, the higher the t-value and consequently the higher the significance level. Almost all factors under consideration in this study registered a mean score of more than three, which suggests that these mean score are statistically significant from the mid-point (3).The implication of this is that most respondents felt that these factors are actually internal and external operational risks affecting alternative banking channels to a larger extent.

When asked whether compensation to clients occurs due to internal forgery; the mean was 3.23 denoting to a medium extent. When asked whether loss to banks occurs in terms of external fraud; the mean was 3.272 denoting to a medium extent. When asked whether the poor bank reputation due to fraud by staff has happened; the mean was 3.93 denoting to a large extent. When asked whether loss to banks occurs in terms of internal fraud; the mean was 3.80 denoting to a large extent. When asked whether low client confidence occurs due to insider under dealings; the mean was 3.97 denoting to a large extent.

#### 4.5.2 Business and System Operational Risks

**Table 4.5 Business and system operational risks**

<b>Factor</b>	<b>N</b>	<b>Mean</b>	<b>t-value</b>	<b>Sig.</b>
Poor quality of service due to delayed transactions	205	3.67	5.315	.000
Account closures due to frequent system failure	205	3.80	4.252	.000
Inefficiencies caused by system failures	205	3.83	6.341	.000
Lack of confidence by customers to adopt ABCs	205	3.60	3.525	.001
Losses due to frequent disruptions and outages	205	3.61	4.311	.000

Key findings from one-sample t test indicate that the higher the mean scores, the higher the t-value and consequently the higher the significance level. Almost all factors under consideration in this study registered a mean score of more than three, which suggests that these mean score are statistically significant from the mid-point (3).The implication of this is that most respondents felt that these factors are actually business and system operational risks affecting alternative banking channels to a larger extent.

When asked whether poor quality of service occurs due to delayed transactions; the mean was 3.67 denoting to a large extent. When asked whether account closures happen due to frequent system failures; the mean was 3.80 denoting to a large extent. When asked whether the inefficiencies are often caused by system failures; the mean was 3.83 denoting to a large extent. When asked whether there is lack of confidence by customers to adopt ABCs; the mean was 3.60 denoting to a large extent. When asked whether losses occur due to frequent disruptions and outages; the mean was 3.61 denoting to a large extent.

### 4.5.3 Employment and workplace operational risks

**Table 4.6 Employment and workplace operational risks**

<b>Factor</b>	<b>N</b>	<b>Mean</b>	<b>t-value</b>	<b>Sig.</b>
Duplication of work when correcting human errors	205	3.97	6.512	.000
Duplication of work when correcting system errors	205	3.61	3.271	.002
Higher overtime payments due to poor job allocation	205	3.93	5.653	.000
Compensation to agents and staff arising from risky cash handling situations	205	3.77	5.426	.000
Losses arising from poorly trained staff and agents	205	3.80	4.252	.000

Key findings from one-sample t test indicate that the higher the mean scores, the higher the t-value and consequently the higher the significance level. Almost all factors under consideration in this study registered a mean score of more than three, which suggests that these mean score are statistically significant from the mid-point (3).The implication of this is that most respondents felt that these factors are actually employment and workplace operational risks affecting alternative banking channels to a larger extent.

When asked whether duplication of work occurs when correcting human errors; the mean was 3.97 denoting to a large extent. When asked whether duplication of work occurs when correcting system errors; the mean was 3.61 denoting to a large extent. When asked whether higher overtime payments due to poor job allocation; the mean was 3.93

denoting to a large extent. When asked whether there are cases where compensation is made to staff arising from risky cash handling situations; the mean was 3.77 denoting to a large extent. When asked whether losses arise from organized labour activities; the mean was 3.80 denoting to a large extent.

#### **4.6 Policies by banks and regulatory authorities to mitigate operational risks**

From the study carried out for both agents and banks staffs it was evident that the banks in Kisumu County, Kenya are affected by the same kind of operational risk even though there was a difference among the banks concerning their alternative banking channels. The bank staffs were able to identify a few policies put in place by banks and regulatory authorities to mitigate the operational risks in ABCs but agents were not aware if such policies exist. The introduction of chips on ATM card was one most prevalent policy seen to work by bank staff in reducing fraud perpetrated through the ATM and POS. Others included training to minimise errors and clear communication to both staff and agents on the policies and compliance requirements for various alternative banking channels. A few also highlighted continuous system audit to identify system vulnerability and system errors. Establishing a clear channel for reporting system problems and failures and analysing the details of these system problems and taking quick measures to resolve them was also seen as a way of reducing customer attrition.

## **4.7 Discussion of Findings**

In this study, most respondents felt that operational risks are actually affecting alternative banking channels to a larger extent. Abulutwa (2013), in his study, operational risks among commercial banks in Kenya, found out that 26 (87%) of the banks were affected by operational risks while 4 (13%) were not affected by operational risks at all. However, Bundia's (2013) result contradicts with this research's findings. Another study by Woske (2010) focused on operational risk and its challenges at Telkom Kenya Limited. The study found out that the organization experienced only financial challenges and did not have any documented operational risk. These findings largely contradict this study.

Another study by Kurendi (2013) on the operational risks among flower firms in Naivasha, Kenya had similar results to the current study. The study found that both internal and external situations occur in the flower firms and that most of the firms had adopted response strategies to tackle the operational risks to a large extent. However, the study further revealed that whilst flower firms do document their response strategies to operational risks, effective implementation was a big hurdle, highlighting issues such as senior management obligations and commitments, existing legal requirements and existence of budgetary allocation as those factors that affect implementation of the strategies.



## **CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS**

### **5.1 Introduction**

From the analysis and data collected, the following discussions, conclusion and recommendations were made. The responses were based on the objectives of the study. The researcher had intended to determine the operational risks affecting alternative banking channels in Kisumu County, Kenya. This chapter also highlights the limitations of the study and recommendations for further research and for policy and practice.

### **5.2 Summary of Findings**

From the findings on the various operational risks that affected the alternative banking channels, the study revealed that the following operational risks affect the alternative banking channels. They include: internal and external fraud, non-compliance issues, inadequate staff training, failed systems and transactions, staff errors and omissions, financial crisis and customer attrition.

Key findings from one-sample t test indicate that almost all factors under consideration in this study registered a mean score of more than three, which suggests that these mean score are statistically significant from the mid-point (3).The implication of this is that most respondents felt that the operational risks actually affect the alternative banking channels to a larger extent within banks in Kisumu County, Kenya.

### **5.3 Conclusion**

From the findings on the various operational risks that affected the alternative banking channels, the study revealed that the following operational risks affect the alternative banking channels. They include: internal and external fraud, non-compliance issues, inadequate staff training, failed systems and transactions, staff errors and omissions, financial crisis and customer attrition.

Key findings from one-sample t test indicate that almost all factors under consideration in this study registered a mean score of more than three, which suggests that these mean score are statistically significant from the mid-point (3).The implication of this is that most respondents felt that the operational risks actually affect the banks to a larger extent.

### **5.4 Implications of the Study to Theory, Policy and Practice**

From the study, it is evident that a wide range of operational risks affect alternative banking channels in banks thereby affecting their competitive position in the market. This implies that the banks should try to minimize and control any operational risk that interferes with the alternative banking channels. An independent team or committee should be set up by banks and other regulators in Kisumu County, Kenya to detect, plan and manage any operational risks affecting alternative banking channels. Moreover, the bank operational managers should focus on managing operational risks that are affecting their alternative banking channels through application of systems that are less costly.

In terms of policy, the study findings shed light on the importance of pro-active methods for managing operational risks. Moreover, the findings root for operational risk in

alternative banking channels as a policy framework for markets riddled with stringent operational risks. Through the already established relationship between operational risks and alternative banking channels, an effective and efficient operational risk management policy can be drafted.

Theories on operational risk management, operational risk and bank management can be advanced from the findings of this study. This is so because managing operational risk can contribute to growth, sustainability, market penetration, cost-reduction, cutting-edge differentiation of products and sustainable competitive advantage of the banks. Therefore the findings shape the theories that link operational risk management to other success factors.

## **5.5 Limitations of the Study**

After evaluating the results of this study, the following limitations should be kept in mind. The limitations take on conceptual, contextual, and methodological manifestations. Conceptually, the study only focused on operational risks affecting banks in Kisumu County, Kenya; and that there was no link to their performance. It would have been momentous to relate the operational risks to the performance of the Banks in Kisumu County, Kenya.

Contextually, the study was limited to Banks from Kisumu County and therefore these findings may not represent the state of Banks in the whole country. Moreover, the study focused on Kisumu County and not Kenya; therefore the findings may not reflect the situation in the entire Country.

Methodologically, that this study relied on bank operational managers to fill the questionnaires and now in the absence of the interviewer, these questionnaires could have been filled by other subordinate staff, who might not be actively involved in the management of the alternative banking channels, therefore creating a source of bias.

## **5.6 Suggestions for Further Studies**

This study has led to identification of various areas that should be studied on to broaden the work done on operational risks affecting alternative banking channels in Kenya. The researcher suggests that further research should be done on the challenges to managing operational risk affecting alternative banking channels. Moreover, the study suggests that future studies on operational risk should focus on bank headquarters since most of the banks alternatives banking channels are centrally managed. Finally, the study suggests that future studies should adopt longitudinal approaches in order to analyze the effect of the operational risks over several rounds of monitoring.

## REFERENCES

- American Bankers Association (2009), ABA bank insurance survey report
- Barney, J. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management*. Texas A & M University 1(2); 324-336.
- Basak, S., Buffa, A. (2015). A theory of operational risk. *Journal available at SSRN* 2737178- 2016
- Basel Committee on Banking Supervision (1998) *Framework for internal Controls Systems in Banking Organization*". BIS BASEL
- Basel Committee on Banking Supervision (2005), *Compliance and the compliance function in banks*. Author
- Basel Committee on Banking Supervision (2006). *International Convergence of Capital Measurement and Capital Standards – A Revised Framework – Comprehensive Version*", Bank for International Settlements.
- Bendor, T., Beck, T., Demirguc-Kunt, A. & Martinez Peria, M. S. (2001). Reaching out: Access to and use of banking services across countries. *Journal of Financial Economics*, 85; 234-266.
- Bleker S. & Hortensius D. (2014). *Business compliance, ISO 19600: The development of a global standard on compliance management*. Baltzer Science Publishers
- Cabas, M. G. (2001). *A History of the Future of Banking: Predictions and Outcomes*.
- Central Bank of Kenya (2014), "The National Payment System Regulations, 2014. Available: <https://www.centralbank.go.ke/images/docs/legislation/NPSRegulations2014.pdf>

- Cheney, J. S. (2008). *An Examination of Mobile Banking and Mobile Payments: Building Adoption as Experience Goods*,
- Chernobai, A.S., Rachev, S.T. and Fabbozi, F.J. (2007). *Operational Risk: A Guide to Basel II Capital Requirements, Models, and Analysis*. John Wiley & Sons, Inc.
- Crosby, P. B. (1979). *Quality is free*. New York: McGraw-Hill.
- Davis, F. D. (1986). *A technology acceptance model for empirically testing new end-user information systems: Theory and results*. Doctoral dissertation. Cambridge, MA: MIT Sloan School of Management.
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3); 319–339.
- Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User acceptance of computer technology: A comparison of two theoretical models. *Management Science*, 35(8); 982–1003.
- Delsanter, J. M. (1992). Six Sigma. *Managing Service Quality*, 2(4): 203.
- Dilliman, D.A. (2005). *Mail and internet surveys: The total design method* (3<sup>rd</sup> ed.), New York: John Wiley.
- Gallo M. (2009). *The compliance function and the evolution of the internal structure of Italian banking intermediaries*.
- Gokte, S. (2008). *A Systematic Approach to Risk Management in the Insurance Industry*. *Mumbai*. Unpublished research project.
- Greene, M.R. & Serbein O. (1983). *Risk Management: Text and Cases Revised* 2nd Ed. Reston Virginia, Prentice Hall.

- Hair, J., Anderson R., Tatham, R. & Black W. (2002), *Multivariate Data Analysis*, Fifth Edition, Prentice Hall.
- Islam M. A. (2008) *Risk management in small and medium-sized manufacturing organization in New Zealand*, PhD Thesis, Department of Mechanical Engineering. The University of Auckland
- Ivatury, G. (2006), *Mobile Phones for Microfinance*. World Bank, Washington, DC.  
<https://openknowledge.worldbank.org/handle/10986/9621>
- Jorion, P. (2000). *Value at Risk: The New Benchmark for Managing Financial Risk*. 2<sup>nd</sup> edition, McGraw-Hill, New York.
- Kumar, N. (2011), Financial Inclusion and its determinants: Evidence from state level empirical analysis in India. *13th Annual Journal*, 4(2); 43-56
- Laderman, E. S. (1990). The public policy implications of state laws pertaining to automated teller machines. *Federal Reserve Bank of San Francisco Economic Review*, 1(2); 43-58.
- Lambert, M. (2002). *Financial Inclusion: Challenges & Opportunities*, 23rd Skoch Summit 2010
- Mols, N.P. (2008), "The internet and the banks' strategic distribution channel decisions", *International Journal of Bank Marketing*, 17(6); 245-300.
- Moutinho, L. (1992), Customer satisfaction measurements: prolonged satisfaction with ATMs. *International Journal of Bank Marketing*, 10 (7);:30-7.
- Mugenda, M. and Mugenda, G. (1999). *Research Methods. Quantitative and Qualitative Approaches*. Nairobi, Kenya.

- Mulu W. (2013) *Determinants of operational risks and losses in manufacturing firms in Kenya.*
- Muthiora B. (2015). *Enabling mobile money policies in Kenya: fostering a digital financial revolution*
- Mutungu J. (2013). *Operational challenges in the implementation of e-banking at the national bank of Kenya.*
- Neumann, E. (2006). Descriptive research in Education *.International Journal of Educational Research, 2;* 30-34.
- Njenga, A. K (2010), Mobile phone banking: Usage experience in Kenya. *International Journal of Management, 12(3);* 134-142.
- Pande, P. S., Neuman, R. P., Cavanagh, R. R. (2000). *The Six Sigma way: How GE, Motorola, and other top companies are honing their performance.* McGraw-Hill, New York, NY.
- Patricio, L., Fisk, R.P. and Cunha, J.F., (2003). Improving satisfaction with bank service offerings: measuring the contribution of each delivery channel. *Managing Service Quality, 13 (6);* 471-482.
- Pikkarainen, T., Pikkarainen, K., Karjaluoto, H., & Pahnla, S. (2004), Consumer acceptance of online banking: An extension of the technology acceptance model. *Internet Research, 14(3);* 224–235.
- Sayar, C., & Wolfe, S. (2007). Internet banking market performance: Turkey versus the UK, *The International Journal of Bank Marketing, 25 (3);* 122-141.



- Simone Di C. (2013). “A conversation with Professor Njuguna Ndung’u, Governor of the Central Bank of Kenya, on the critical policy issues around mobile money”, GSMA
- Thirlwell, J. (2004). *Operational risk and Corporate Governance*, Unicom, London.
- Tubin, G. (2010). *Lessons Learned: Eight US Financial Institutions Reveal Mobile Banking Benefits*. Tower Group.
- White, H. & Nteli, F. (2004) Internet banking in the UK: Why are there not more customers? *Journal of Financial Services Marketing*.
- White, K., & Harrison, T. (2004). Online banking information: what we want and what we get, *Qualitative Market Research*, 7 (1); 67-79.

# APPENDICES

## Appendix I: Letter from the University



**UNIVERSITY OF NAIROBI**  
**SCHOOL OF BUSINESS**  
**KISUMU CAMPUS**

Telephone: 732160 Ext. 208  
Telegrams: "Varsity", Nairobi  
Telex: 22095 Varsity

P.O. Box 19134-40123  
Kisumu, Kenya  
0202659307 / 0720348080

Ref: CHSS-SOB D61/72989/2014

October 25, 2016

### TO WHOM IT MAY CONCERN

The bearer of this letter Nguku Sarah Mbura

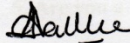
**REGISTRATION NO: D61/72989/2014**

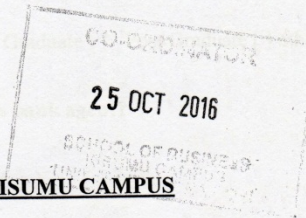
The above named student is in the Master of Business Administration Degree Program. As part of requirements for the course, she is expected to carry out a study on "**Managing operational risks in alternative banking channels in Kisumu County Kenya**". She has identified your organization for that purpose. This is to kindly request your assistance to enable her complete the study.

The exercise is strictly for academic purposes and a copy of the final paper will be availed to your organization on request.

Your assistance will be greatly appreciated, thanking you in advance.

Sincerely,

  
**Mr. ALEX JALEHA**  
**COORDINATOR, SOB, KISUMU CAMPUS**



Cc. File Copy

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Providing leadership in academic excellence

## Appendix II: Questionnaire

Dear respondents,

I am a Master of Business Administration student at The University of Nairobi carrying out a research on managing operational risks in alternative banking channels in Kenya. I'm requesting you to help me in completing this questionnaire towards the course. I'm assuring you that any information volunteered will be treated with utmost strictness and confidentiality.

Please tick (✓) as maybe appropriate.

**1. Name of respondent ..... (Optional)**

**2. Gender**

Male ( )                  Female ( )

**3. Age of respondents**

18-25 years [ ]    26-33years [ ]    34-40 years [ ]    41years and above [ ]

**4. Level of education**

Primary [ ]    Secondary [ ]    Graduate [ ]    Post Graduate [ ]    other specify.....

**5. Are you a bank staff or a bank agent?**

Staff ( )                  Agent ( )

**6. If a bank staff, what is your working experience within the banking industry?**

0-3 years [ ]    4-6years [ ]    7-10 years [ ]    11-15years [ ]    15 years and above [ ]

**7. If an agent, what is your working experience as a bank agent?**

0-6months [ ]    7-12months [ ]    13-23months [ ]    24 months and above [ ]

**8. How long has your bank been offering Alternative banking Channels in Kenya?**

Less than 6 months [ ] 7-12 months [ ] 13-24 months [ ] Above 25 months [ ]

**9. Using the range of Alternative banking Channels in Kenya, indicate by ticking which ones are offered by your bank.**

ATMs [ ] Agency banking [ ] Mobile banking [ ] Internet Banking [ ]

Point of Sale (POS) [ ]

**10. Could you tick where applicable the operational risks that you have encountered after the adoption of the various Alternative banking Channels. (Please mark your answer with an (X) using the scale 1-5, where 1=not at all, 2=to a small extent, 3=to a medium extent, 4=to a large extent, 5=to a very large extent)**

<b>Operational risks in various ABC</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Internal and external frauds					
Non-compliance issues					
Inadequate staff training					
Failed systems and transactions					
Staff Errors and omission					
System processing errors					
Customer attrition					

**11. Internal and external operational risks in alternative banking channels (Please mark your answer with an (X) using the scale 1-5, where 1=not at all, 2=to a small extent, 3=to a medium extent, 4=to a large extent, 5=to a very large extent)**

<b>internal and external operational risks</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Compensation to clients due to internal forgery					
Loss to banks in terms of external fraud					
Poor bank reputation due to fraud by staff					
Loss to banks in terms of internal fraud					
Low client confidence due to insider under dealings					

**12. Business and system operational risks in alternative banking channels** *(Please mark your answer with an (X) using the scale 1-5, where where 1=not at all, 2=to a small extent, 3=to a medium extent, 4=to a large extent, 5=to a very large extent)*

<b>Business and System operational risks</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Poor quality of service due to delayed transactions					
Account closures due to frequent system failure					
Inefficiencies caused by system failures					
Lack of confidence by customers to adopt ABCs					
Losses due to frequent disruptions and outages					

**13. Employment and workplace operational risks in alternative banking channels** *(Please mark your answer with an (X) using the scale 1-5, where where 1=not at all, 2=to a small extent, 3=to a medium extent, 4=to a large extent, 5=to a very large extent)*

<b>Employment and workplace operational risks</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Duplication of work when correcting human errors					
Duplication of work when correcting system errors					
Higher overtime payments due to poor job allocation					
Compensation to agents and staff arising from risky cash handling situations					
Losses arising from poorly trained staff and agents					

**14. What operational risk management policies have been put in place by your bank to achieve operational excellence in the affected Alternative banking Channels?**

.....

.....

.....

.....

**15. The policies put in place by regulatory authorities like CBK and KBA have reduced operational risks in the affected Alternative banking Channels** *(Please mark your answer with an (X) using the scale 1-5, where 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree)*

<b>Policies by regulatory authorities</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Introduction of EMV compliant ATM cards by KBA					
CBK approval for all agents established by commercial banks					
Transaction amount limits observations for all channels to reduce the loss exposure in case of frauds					

**16. How do you describe the management of operational risks in Alternative banking Channels by your bank in the last two years?**

Stable [ ] relatively stable [ ] irregular [ ] others (specify).....

**17. Indicate the extent to which the operational risk management practices influences the efficiency and effectiveness of Alternative banking Channels?**

5 - to a very large extent

4 - to a large extent

3 - to some extent

2 - to a small extent

1 - to no extent

**Thank You for Your Cooperation**