

**KNOWLEDGE MANAGEMENT AND INNOVATION AMONG COMMERCIAL  
BANKS IN KENYA**

**BY**

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## DECLARATION

### Declaration by Student

This research Proposal is my original work and has not been presented to any other university for the award of a degree.

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### Approval by Supervisor

This research project has been submitted for examination with my approval as the University Supervisor.

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## **DEDICATION**

This project is dedicated to my best friends Sheila Tett and Eva Njoki who accorded me full support during the writing of this project.

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## **LIST OF ABBREVIATIONS AND ACRONYMS**

CBK: Central Bank of Kenya

CBR: Central Bank Rate

KBBR: Kenya Banks Reference Rate

KM: Knowledge Management

MOU: Memorandum of Understanding

SPSS: Statistical Package for Social Sciences

## **ABSTRACT**

This study is about knowledge management and innovation among commercial banks in Kenya. Knowledge Management (KM) manages the corporation's knowledge through a systematically and organizationally specified process for acquiring, organizing, sustaining, applying, sharing and renewing both the tacit and explicit knowledge of employees to enhance organizational performance and create value. . Knowledge is more relevant to sustain business than capital labor or land. Knowledge provides the ability to respond to novel situation. Most organizations realized that knowledge is a source of competitive advantage and a primary factor in knowledge-based economy. The main objective of the study was to determine the relationship between knowledge management and innovation in commercial banks in Kenya. The study adopted a descriptive research survey. The target population comprised of 43 commercial banks. A total of 40 commercial banks in operation (i.e not under statutory management) were surveyed. Primary data was collected from the respondents using a 5 scale Likert type questionnaire. The Quantitative data collected was analyzed by the use of descriptive statistics using SPSS and presented through percentages, means, standard deviations and frequencies. The information was then presented by use of bar charts and tables. The findings of this study are consistent with theory in that knowledge management was found to enhance innovation among commercial banks. Both components of knowledge management, knowledge creation and knowledge dissemination had a positive effect on the banks innovativeness. The study also found that banks employ a mix of both radical and incremental innovations in a bid to obtain sustainable competitive advantage. The study also found some weaknesses in the acquisition and dissemination practices of the banks. The study recommends that banks revitalize the foundations of their knowledge management practices to extract more value from them. Market surveys and employment and retention of staff trained in science, engineering or math are the most crucial aspects that need to be strengthened.

## CHAPTER ONE: INTRODUCTION

### 1.1 Background of Study

Over the past 20 years, KM (KM) has been the focus of many management teams as a forerunner to enhanced organizational performance. Increased globalization has necessitated a single-minded focus on KM by organizations as a force for sustainable competitive advantage. According to Darroch (2003), KM is classified into knowledge generation or acquisition, sharing and responsiveness towards knowledge; it is the means by which new processes, systems and attitudes are introduced (Saross, Cooper & Santora, 2008). Booz, Allen and Hamilton (1982) posit that innovation is classified into newness to the world, products/service that are novel to a company, revision to the current product portfolio, addition to an existing product line, repositioning of current products and cost reduction to a firm's present products. These innovations are further classified into incremental and radical innovations.

The study is anchored on the Knowledge-based theory of a firm; which developed from academic studies on the impact of knowledge on a firm's performance. This theory draws many references from Resource-based theory of the firm which will also be further discussed. Knowledge-based theory refers to firms that leverage their knowledge resource to influence multiple intellectual, economic, social and cultural factors. This has conveyed new insight on the value of organizational knowledge and has identified knowledge as a valuable resource similar to capital investment in a firm (Connor & Prahalad 1996; Grant 1996; Spender 1996). Most KM efforts in organizations have been fixated on improved efficacy through sharing of internal best practices, most of which have culminated in formalization. Excessive formalization could, however, deter inventiveness and innovation within the organization.

The banking industry in Kenya has been faced with outstanding levels of competition owing to increased globalization. In 2016 the commercial banks in Kenya reached an MOU to lower interest rates which have occasioned even greater competition. This implies that the banks presently need to leverage innovation as the driving tool towards sustainable competitive

advantage in an environment that continues to change. The Central Bank of Kenya (2015), reported that the industry experienced increased use of technology evidenced by the strides made in agency banking, mobile banking and internet banking. Greater use of technology by the banks is allusive to an industry leveraging KM and thus ideal for this study. This study, therefore, centers on two aspects of KM: acquisition and dissemination and seeks to evidence the relationship amongst them and Innovation in Kenyan commercial banks

### **1.1.1 Knowledge Management**

KM is defined as the aggregate of all organizational activities involved in the creation to the eventual utilization of knowledge with the aim of enhancing organization performance (Swann et al., 1999). KM strategy is vital for the effectiveness of any organization (Maier, 2002). It links the present and future knowledge desired in the pursuit of competitive advantage through directed leveraging (Zack, 1999). The capability to generate or acquire knowledge is highly valued by entities determined to maintain or acquire sources of competitive advantage (Drucker, 1993). KM is thus fundamental in the provision of an organized system of bringing in structural agility consistent with a firm's goals (Beckett, Wainwright & Banes, 2000).

Although management's reliance on knowledge was often discussed, it is the knowledge-based theory of the firm that contributed to the long term significance of organizational knowledge as a useful resource comparable to the capital requirements of an organization (Conner & Prahalad 1996; Grant 1996). The viewpoint proposes that the utilization of tangible resources is contingent on how they are put together which is a function of a firm's knowledge reservoirs. Since knowledge-based assets are socially intricate and also tough to ape, the knowledge-based theory holds that these knowledge resources present sources of sustainable competitive advantage. Nevertheless, it's not so much the possession of knowledge but rather the firm's capacity to leverage it in generating new ideas, processes and products/services that enhances competitiveness (Beesley & Cooper, 2008).

Knowledge Creation/ acquisition infers to the culture of gaining new knowledge and information for organizational use. According to Nonaka and Takeuchi (1995), at least 75%

of the creation process, that is socialization, externalization, and amalgamation is highly dependent on a wide range of social interactions within personnel groups and members. Darroch (2003) opined that knowledge creation and acquisition in competitive business environments is elucidated by six factors: valuing personnel attitudes and sentiments and inspiring staff to upgrade their skill set; possessing a comprehensive financial reporting system, being responsive to information concerning shifts in the marketplace; focus on the market by actively finding customer and sector information; recruiting and the retention of significant numbers of staff trained in math, engineering or science; partnering with universal clientele; and acquiring appropriate data from market surveys. This approach still maintains reasonable face validity and will, therefore, be adopted for this research.

Knowledge dissemination is the practice of distributing and sharing knowledge within an organization. Knowledge dissemination is crucial for the appropriate utilization and leverage of knowledge resources in firm and therefore crucial for organizational success (Geiger & Schreyogg, 2012). Many elements influence the information sharing processes such as the organizational behavior and culture. Baetz (2003) recognized three groups of practices that contribute greatly to the augmentation of the knowledge sharing processes in an organization. These include the utilization of public forums to raise awareness of business best practices; utilization of in-house specialists; and evaluation of knowledge stores. Correspondingly, Fong & Choi (2009) established that the main hindrance to sharing of knowledge is the lack of confidence and belief between individuals. Alternatively, Darroch et al., (2001) acknowledged five factors to gauge the extent of knowledge dissemination: beginning with readiness to share market information within the organization; the, distribution of on-the-job knowledge; the utilization of mentoring and training to distribute useful innovative knowledge; taking advantage of technology in facilitating communication; and lastly favoring written communication to circulate knowledge. These factors will be adopted for this study.

### **1.1.2 Concept of Innovation**

Innovation refers to an organization's ability to present novel products/services in the market and to explore new markets (Wang & Ahmed, 2004). Innovation is well-known to be a spirited ingredient for organizations that aspire to stay competitive (Roberts 1988). It denotes the course through which firms develop and improve their existing processes, product or services and positioning, with an ultimate goal of value addition. The definition clearly distinguishes between an innovation, idea and invention as the generation of value from an idea or invention (Cooke, 2001). Innovation normally requires creativity but the two are not the same. The former entails acting on creative input to deliver positive and noticeable change in its domain. In this regard, despite the fact that creativity is regarded as the onset for innovative processes, it is not an adequate condition for the perfect innovative efforts. Creativity is frequently envisioned as the foundation for innovation, where innovation is deemed as the product of fruitful employment of creative concepts within a company (Amabile et al., 1996).

Innovation refers to concepts that are new to the business environment, new to an organization, expansions of current product offering, enhancements or adjustments to current product offering, cost cutting measures on current products, or the brand repositioning of the current product. (Booz, Allen & Hamilton, 1982). A new to the world innovation epitomizes the initial presentation of an idea commercially in domestic or international market where as a new to the firm innovation denotes the embracing of a new product, knowledge, or behavior by a firm (Booz, Allen & Hamilton, 1982). Addition to the current products lines solidifies an organization by escalating awareness of its brand and increasing profitability by offering products in multiple product categories (Booz, Allen & Hamilton, 1982). Enhancement or adjustment to current product offering refers to slight changes to them aimed at growing market share and revenues while cost reduction of current products happens when new processes with an inferior cost structure take over the current ones resulting in better pricing and greater market share (Booz, Allen & Hamilton, 1982). Finally, Repositioning of current Products refers re-targeting firm's products for alternative or varied uses. Some of the benefits of innovation to an organization are: Increase product loyalty, increased profit margins, and market leadership (Booz, Allen & Hamilton, 1982).

These innovations can further be classified into either incremental or radical innovation. Incremental innovations will manifest as line extensions or modification of current offerings (Dosi,1988). They are often categorized as market pull type innovations as many of the ideas originate from the marketplace and often flow from a market-oriented organizations with know-how on information gathering, sharing and responding to information concerning the market ( Kohli& Jaworski,1990). Incremental innovations do not necessitate a drastic shift from the existing way of doing things. But rather enhance existing internal competencies by allowing organizational members to develop the prevailing know-how (Tushman& Anderson, 1986). On the other hand, radical/revolutionary innovations tend to make existent knowledge and skills useless or irrelevant. (Tushman& Anderson,1986).They manifest as new to the world or new to the firm innovations. They develop from scientists and are said to be Technology push type Innovations. (Dosi, 1988; Green et al.,1995). These types of changes are vital for sustainable competitive advantage as they entail the development of new technologies that may lead to a change in existing market structures (Veryzer, 1988).

### **1.1.3 Commercial Banks in Kenya**

Commercial Banks are closely monitored by the CBK under the authority of the Banking Act Cap 488.The banking industry comprises of over forty commercial banks; 12 microfinance institutions, at least one Mortgaging finance company, approximately 80 forex bureaus and eight representative offices of foreign banks. It is also worth noting that there are three credit reference bureaus as well as up to 17 money remittance businesses (CBK, 2016). Conferring to the CBK(2016), the Kenyan Banking Sector's total assets stood at Ksh. 3.6 trillion. It recorded approximately Ksh. 38b pre-tax earnings in the quarter ended March 2016. This was an upsurge of about 2.9% from the Ksh. 37.3b as at the quarter ending March 2015. This increase in profitability is attributed to a 15% (Ksh. 16.5 billion) increase in total income; however, the increase in revenue was neutralized by an increase of total expenses by 21.2%.

The CBK (2015) reported an enhanced use of technology resulting in the convergence of mobile telephony platforms and banking plus more internet banking. There was a trend towards agency banking a departure from traditional banking. Since the introduction of agency banking models in 2010, banks have gone on to contractually agree with an array of

retailers to serve as their agents in offering simple banking services at the customers' convenience. The subcontracted companies include but are not limited to, courier services, supermarkets, pharmacies, and post offices that provide basic deposit and withdrawal transactions among others in accordance with the law and established guidelines. According to Central Bank of Kenya (2016), as at 31st March 2016, there were at least 20 commercial banks that had had partnered with up to 40,224 agencies, facilitating transactions worth over Ksh. 930billion. The increased uptake of technology clearly indicates a sector where KM strategy is at play and therefore ideal for this study.

The sector is not without challenges though. It is marked with continuous review of its regulations as evidenced by the MOU to lower interest rates that had them adjust their rates to 14% in line with the reductions in the CBR and the KBRR. The banks additionally committed to eliminate some non-interest charges to the benefit of their customers. Also in the last two years, the banking sector has seen three banks namely Dubai Bank, Diamond Bank Limited and Chase Bank Limited go into receivership by the CBK. These ascribe to an industry that is marked by high levels of competition, economy downturn and increased customer expectation, whose chance for sustainable competitive advantage must be pegged on innovation as leverage.

## **1.2 Research Problem**

The concept of KM and organizational innovation has not received much attention. KM in itself is an emerging issue that has not yet been comprehensively considered. Modern society is characterized by continuous change that necessitates a fluid KM strategy to minimize adverse effects on firms as well as enhance organizational effectiveness. It is, therefore, of urgency that scholars and business leaders decipher the impact of KM schemes on numerous pursuits of firms such as innovation. The banks here in Kenya and beyond have in time implemented innovations such as m-banking, internet banking, and agency transactions in response to shifts in the social and technological environment evidenced by changes in customer tastes, penchants, and competitor trends.



An examination of prior research undertaken reveals that most centered on; KM and business process re-engineering, best practices in KM and the impact of KM on performance rather than the effect of KM on organizational innovation. Maseki (2012) examined the connection between banks' market performance and their KM approaches. The researcher revealed that KM was positively related to the banks' market performance. Moreover, Ochieng, et al. (2014), explored the impact of KM efforts on organizational performance. The researcher concluded that KM and firm performance are certainly correlated. Darroch (2005), however, examined the relationship between KM, innovation and the firm performance. The results supported the impression that firms with KM capacity have an edge in resourcefully utilizing scarce resources leading to greater innovation and improved performance. However, the sample of the study marginally over-represented respondents from larger institutions in the course of data collection in New Zealand. It means, therefore, that there is a substantiated need to replicate the survey in dissimilar economic environments.

The scrutiny of the causal link between KM and innovation is thus vital to commercial banks, owing to their unique demands of KM strategies and the fact that effective KM may enhance the bank's competitiveness. It is worth noting that a higher portion of KM endeavors have, nonetheless, concentrated on the narrow scopes of improving productivity by the open sharing and execution of their organizations' best practices. It is important to acknowledge though that a high level of rigidity and formalization of processes and structures could deter organizational progress in the areas of creativity and innovativeness. This study, therefore, sought to answer the following research question; what is the effect of KM on Innovation among Commercial Banks in Kenya?

### **1.3 Study Objective**

The objective of the study was to determine the relationship between Knowledge Management and Innovation among Commercial Banks in Kenya.

### **1.4 Value of Study**

This study aims to validate the importance of KM in achieving desired organizational innovation. KM management is a seemingly new discipline, as such there continues to be

increased efforts towards conceptualizing KM and more so, to distinguish it from the mere use of information technology to capture knowledge. This study will therefore contribute to the existing knowledge on the matter. The empirical evidence will provide evidenced conviction on the value of knowledge management in the Kenyan context especially as it relates to Innovation.

The research also seeks to determine the extent to which particularly two components of knowledge management: Acquisition and dissemination are being applied in the context of Kenyan commercial banks. KM factors hitherto identified to be typical of a firm effectively engaged in KM by Darroch (2003), this research presents a broader concept of KM and therefore contributes to theory by providing a different context and aspects under which KM is tested. The empirical evidence will provide a case for or against focusing on knowledge management efforts in the direction of these two components.

This study is also of importance to the commercial banks. It has already theoretically been established that purposeful KM may result in desired innovation. Therefore, the empirical evidence and insight gained on whether too much rigidity in the implementation of best practices could lead dampen innovation in the organization will inform the decision making of the commercial banks regarding their KM strategy. The government of Kenya has in the last years given a lot of motivation in incentives and loans to the youth for purposes of innovative entrepreneurship. The government may, therefore, also benefit from the research as it offers insight on the balance between knowledge management and innovation. This insight may be useful to them when considering the level of best practice formalization they require of the recipients of the Uwezo and Youth funds.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Introduction**

This chapter presents the theoretical works anchoring KM and innovation. It endeavors to find a fit between the concepts being studied and the related theories. It examines KM and its logical connection to organizational innovation.

### **2.2 Theoretical Foundation of the Study**

KM rests upon theories based on resources. Knowledge is an intangible asset. This research will base the concept on two theories; the resource and knowledge-based theories.

#### **2.2.1 Resource-Based Theory**

The resource-based theory has been expounded on by various scholars (Barney 1991). These scholars argue that it's more sensible to exploit new prospects by utilizing existing resources differently, than obtaining new skills for every new opportunity. It posits that ownership of strategic resources, both tangible and intangible can be a font for sustainable competitive advantage. This premise only holds if such resources are scarce, incomparable, non-substitutable and valuable (Barney, 1991). A resource is considered inimitable when competitors have a hard time duplicating it. Most of these valued resources are safeguarded by various lawful apparatus such as, intellectual property rights, copyrights, patents and trademarks. A valuable resource is one that assists a firm's management produce proactive strategies that harness lucrative opportunities while at the same time deflecting market pressures. A resource is deemed non-substitutable only if rivals cannot discover other ways of acquiring those returns similar to which the resource provides (Barney, 1991).

The two critical assumptions of the resource-based theory are; first that resources must be heterogeneous, meaning that the capabilities, skills, and other organizational resources differ from one firm to the next. Secondly, resources are immobile to imply that the resources do not move from one company to another. It suggests that an organization's human capital as

an asset and how it is managed can contribute substantially to achieving sustainable competitive advantage. To be able to generate lasting diversity and stability, a firm needs to possess the right mix of human factors of production, management practices, as well as KM efforts and systems, coupled with educational mobility and social interaction in order to secure perpetual existence. (Afiouni, 2007; Barney, 1991).

Barney (1991) contends that for an organization's assets to provide superlative edge on its rivals, it has to provide it with increasing value over a period in its competitiveness against its rivals. The application of this theory certainly helps to identify assets that can confer a firm with sustained competitive advantage. Knowledge as an asset, however, may not help as much without KM. The proper management of knowledge as a distinct asset can enable an organization to obtain dynamic capabilities. The dynamic capabilities thus gained once leveraged may help shift a firm's competencies favorably in line with the environmental changes (Teece,1998).This resource-based theory acknowledges the critical roles that knowledge plays in seeking and achieving sustainable competitiveness. However, it views knowledge as a generic resource, rather than distinguishing between differing aspects of knowledge-based competences. These limitations are catered for by the knowledge-based theory.

### **2.2.2 Knowledge-Based Theory**

The Knowledge-based theory is relatively modern; drawing reference from classical theories of management such as the organizational theory, resource-based theory and theory of the firm. It places knowledge as the prime resource of any firm. The theory posits that knowledge is the pivot on which a company's operations are organized. In a firm, this knowledge is conveyed through multiple entities, ranging from organizational identity, policies, operations, culture, employees and documentation (Grant 1996; Nelson & Winter 2009). According to Zack (1999), Knowledge is an essential strength whose proper utilization could go a long way in offering long-term, sustainable competitiveness.

An important aspect of this theory is that the primary source of competitiveness is found within the application of knowledge and not just the possession of knowledge in itself. This

theory posits that since knowledge-based resources are generally hard to duplicate and also socially intricate, optimally leveraging them could lead to an enduring competitive advantage. According to Seufert et al. (1999), an organizational system should be developed that enables the sharing of relevant knowledge within the company via a network. The system should be integrative and consistent to allow for the maximum derivation of value by a firm from the knowledge in its possession. Such a mechanism is important in strengthening the company's capability to exploit the knowledge in its possession plus it can confer it with abilities to create new knowledge thus assisting in the meeting of organization goals (Earl, 2001; Zack, 1999). There is also need for increased employee engagement in the formulation and implementation of the operational and strategic goals of the enterprise.

Grant (1996) isolates three primary measures useful in the integration of information to enhance the organization's capabilities: directives, routines, and self-managing task teams. The directives refer to a particular set of standards, guidelines, and procedures established by the optimal conversion of implicit technical know-how to explicit knowledge to unspecialized knowledge. Organizational routines involves the improvement of job performance as well as teamwork through coordination patterns, process specifications and interaction code that enable employees to apply and assimilate their specialized expertise without necessarily articulating that expertise to fellow employees. In cases where task complexity prevents the development of organizational routines and directives, teams with the necessary know-how are established for the sole purposes of problem-solving. Information technology (IT) is vital in the speeding up of the consumption of knowledge by implanting KM into organizational practices. IT may also support the development, revision, and distribution of directives within the firm. (Alavi&Leidner, 2001).

### **2.3 Knowledge Management and Innovation**

Newman (2000), states that KM promotes a consolidated approach to recognizing, capturing, recovering, distributing, and evaluating a firm's information resources. These information resources are comprised of policies and procedures, databases, confidential documents as well as the implicit expertise and experience of employees. KM as a capability is vital as it forms the foundation for the creation of other capacities. To continuously generate

knowledge, firms need to developed dynamic capabilities that promote organizational learning as an organization (Sinkula et al.,1997; Tsoukas, 1996). Innovation on the other hand refers to an organization's ability to present novel products/services in the market and to explore new markets (Wang & Ahmed, 2004). Innovation is well-known to be a spirited ingredient for organizations that aspire to stay competitive (Roberts 1988).Knowledge habitually contains novel ideas and plans; therefore, its creation and acquisition is envisioned as the primary motive and a forerunner for Innovation(Darroch & McNaughton, 2003).Sufficient KM has often being elucidated in literature as an option for enhancing innovation. Knowledge acquisition and dissemination are considered the elements that are likely to have the greatest consequence on innovations owing to their ambiguity and exclusivity to a firm (Grant, 1996; Teece, 1988).

A firm's adaptation to new processes, a form of innovation is dependent on its capacity to exploit its knowledge banks. This is because innovation practice involves the gaining and application of novel knowledge (Damanpour, 1991; Nonaka, 1994). Firms can procure new knowledge through a number of options, such as through natural learning which infers to inbred knowledge origination from founders. Additionally, experiential learning infers to awareness gained from practical know-how, and vicarious learning, which refers to knowledge developed from businesses or other persons. The knowledge of an employee is grounded on his/her skill-set, experience and their capacity for absorbing novel knowledge. A way of perceiving KM is to view it as a synchronizing element that allows resources to be converted into organizational competences manifested through various innovations (Nelson & Winter, 2002).

KM is indispensable in the Kenyan banking industry because the banks compete from knowledge. KM in the banking context involves an organization's ability to identify, capture, and leverage the internal knowledge of individual employees and also knowledge resulting from customers and other peripheral sources. That is "who we know, what we know and how we do what we do" (Du Plessis& Du Toit, 2006). KM in banks is reliant on and entwined with IT; however, efficient KM is not merely a technological issue. The probable consequences of implementing KM efforts range from enhanced economic performance

(Teece, 1998), maintenance of the long-standing sources of competitiveness (Connor & Prahalad, 1996) and Innovation (Antonelli, 1999; Nonaka & Takeuchi, 1995).

Admittedly, Scholars have been swift in pointing out the requirement to identify, cope and cultivate elusive assets including knowledge to enhance innovativeness. However, there is limited guidance on what effective KM is and lesser direction on what measurable KM might be. Also, the difference between disruptive and incremental innovation is not thoroughly developed in research seeking to guide administrators on the steps to advance their innovative profiles. The study of the active connection between KM and innovation is, therefore, critical in commercial banks sector owing to the fact that utilization of KM practices may enhance the sustainable competitiveness of a bank. This paper will be an empirical examination the relationship between KM and innovation. Darroch (2003) identified the 3 main components of KM as creation and acquisition, dissemination and responsiveness to information. Knowledge acquisition and knowledge dissemination will be the focus of this study.

#### **2.4 Summary of Prior Research and Gap**

Various studies have focused on KM. Knowledge management practices, intellectual property, culture, and strategic plans have been routinely recognized as defining factors in KM (Chong & Choi, 2005). Darroch (2005) sought to substantiate empirically KM's role in organizations. Data was collected using statistical surveys disbursed to CEOs representing firms of over 50 employees, all obtained from a wide cross-section of sectors. This paper posits KM as a synchronizing mechanism, empirically holding that firms with KM capabilities will go a long way in exploiting scarce resources for organizational effectiveness and innovation.

Jafari et al., (2015) explored the impact of KM efforts on employee innovativeness and performance within an organizational context. They developed seven hypotheses founded on the theoretical framework of the research. The data was collected using 84 structured questionnaires, which had been formerly distributed to a number of manufacturing plants in Malaysia. This research concluded that KM is vital in enhancing employees' innovation within firms. The research also discovered two components of KM: acquisition and

responsiveness to knowledge are more vital in encouraging employees' innovative performance as compared to dissemination. Maseki (2012) examined the connection between banks' performance with their KM practices. With a population of 43 commercial banks, a descriptive cross-sectional survey was done with samples picked from a stratified random sampling. A strong linkage was found between KM and the performance of commercial banks. KM practices were attributed to innovations in products and process improvements in the banks and ultimately to performance.

Kiseli(2016) studied the effect of knowledge management capabilities on competitive advantage. He specifically focused on how technology KM infrastructure proficiency, social KM infrastructure competencies, KM process know-how and KM innovation agility affect the competitive advantage of five-star hotels in Kenya. Primary data was collected by using structured questionnaires. The researcher scrutinized the quantitative data using Statistical Package for Social Sciences (SPSS). The study established that organizations design processes facilitate knowledge exchange across functional boundaries. It also ascertained that employees are experts in their field of specialization and that they can make suggestions about others tasks. Finally, the study established that a firm takes advantage of knowledge management to expand the assortment of products minus increasing costs.

Moreover, Ochieng, et al. (2014), also considered the causal link between KM efforts and their impact on a firm's performance. This study was designed to determine the magnitude of knowledge creation and sharing; and the level of performance of the firm and to establish how the various components of KM impact organizational performance of commercial banks in Kisumu. The target population stood at 20 commercial banks found in Kisumu. The data was gathered through questionnaires and explored by correlation analysis as well as statistics. The study held that there is a constructive correlation between knowledge creation and organizational performance. Also substantial positive correlation was discovered between a firm's performance and knowledge sharing.

While locally studies have been done on KM, studies specifically focusing on the effect on KM on innovation have mostly been done outside the country. This provides an opportunity



to develop the theory by examining the impact of a country's context: Kenya. This study is an effort to offer research in this area. A country setting provides a platform for unique cultural differences that have a huge influence on organizations. Culture is a determinant of KM practices success (Ardichvili et al., 2006; Ford & Chan, 2003). A positive and supportive culture will yield success for KM practices in the organizational setup.

## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.1 Introduction**

This chapter outlines the research methods that were applicable in the study. It explains the research design used and its justification. It highlights on the target population and elaborates on data collection tools and the analysis methods to be employed.

### **3.2 Research Design**

This study adopted a descriptive cross - sectional survey research design. The descriptive research design is an orderly, experimental inquiry where the researcher has insignificant direct influence of the Independent variable (Mugenda & Mugenda, 2003). A survey involves collecting opinions and beliefs from respondents in a structured manner to facilitate comparison across the chosen sample and generalization to population (Cooper & Schindler, 2014). The design was also cross-sectional as it involved assessing the relationship between KM and innovation within some specific period. The study therefore entailed collecting information at a given point in time from the study population in its natural setting without some form of manipulation, using standardized questions in the form of a structured questionnaire. The research design was preferred because the study was not restricted to the gathering and description of the data but also attempted to establish the relationships amongst the research variables (Mugenda & Mugenda, 2003).

### **3.3 Population of the Study**

The target population was all commercial banks within Kenya. Referencing the CBK (2016), there were approximately 43 banks operational in Kenya. Three of these banks were however officially under statutory management at the time of research. These 3 banks were exempted from the research since they were involved in reversal tactics and wind up measures making them unsuitable for the research study. Therefore, the study conducted a census where all members of the population were included in the study. The census was done due to the small number of 40 banks currently in operation and the researcher's objective to enhance the consistency of findings in a sector where industry practices amongst banks may differ

(Cooper & Schindler, 2014). One questionnaire will be administered to each bank addressed to knowledge/human resources department.

### **3.4 Data Collection**

To realize the goals of the study, data collection made use of primary data. This was achieved through the administering of one structured questionnaire to the heads of knowledge/human resource departments of each respondent's bank because of their key role in knowledge management in the commercial banks and because they are versed with issues surrounding their organization's agility and processes in their banks. Primary data was applicable since the data sought was undocumented and inaccessible in the public domain. The questionnaire was established with the intention of measuring the respondent's opinions regarding the presence and significance of the research variables: KM and innovation. The predictor variable, KM was analyzed using the two components: creation and dissemination (Darroch & McNaughton, 2003). A five-point Likert-type scale (from 0 = undecided to 4= strongly agree) was created using factors focusing on acquisition and dissemination. Respondents were required to show how accurately every single comment describes their organization. A stronger agreement with the questions was assumed to be reflective of firms practicing KM to a high extent.

### **3.5 Data Analysis**

The survey used both descriptive and inferential statistics to validate the relation between KM and innovation. Before handling the responses the completed questionnaires were revised to guarantee consistency and completeness. The data collected was coded into themes and then analyzed statistically through utilizing descriptive statistics using SPSS. The output of which was in percentiles, averages, standard deviations, and frequencies. Mugenda and Mugenda (1999), reiterate that SPSS is an all-inclusive, cohesive gathering of computer programs useful for coordinating, analyzing and revealing data.

As regards Inferential statistics, correlation will also be applied to test the proposition that KM has a constructive consequence on innovation. Also regression analysis will be employed

where innovation will be regressed on the elements of KM: acquisition and dissemination. The regression model illustrated below has been established to aid analysis:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \epsilon \dots \dots \dots (1)$$

Where: Y is the dependent variable (Innovation),  $\beta_0$  is the point on the Y intercept,  $\beta_1$  and  $\beta_2$  represent the regression constants,  $X_1$  refers to knowledge acquisition,  $X_2$  is knowledge dissemination, and  $\epsilon$  is regression error-term.

## CHAPTER FOUR

### DATA ANALYSIS, INTERPRETATION AND PRESENTATION

#### 4.1 Introduction

This chapter presents data analysis and exhibition of the findings from data collected using a questionnaire in the cross-sectional survey. The aim of the research was to determine the association between KM and Innovation among the Kenyan Commercial Banks. This study comprised of a census of all the 43 commercial listed by CBK, however 3 banks that were under receivership at the time of undertaking the research were exempted from the research. The research therefore targeted forty banks and out of 40 questionnaires that were issued out to respondents, 31 questionnaires were successfully filled and returned for analysis thus giving the study 78% response rate. This is an excellent rate of response as affirmed by Mugenda and Mugenda (2003) who posits that a response rate of 50% was sufficient for analysis and reporting while a response percentage of 70% and above is excellent. Table 4.1 below shows the study's response rate. Following the receipt of the filled questionnaires, the data therein was coded, analyzed, summarized, and presented via tables, percentages, and graphs using SPSS.

**Table 4.1 Response Rate**

Response	Number of Respondents	Percentage (%)
Expected Responses	40	100
Received Responses	31	78

**Source: Research Data, 2017**

#### 4.2 Demographic Information

Respondents were required to indicate how many years their banks had been operational given the scale of less than 10 yrs, between 10-20 yrs, more than 40 yrs, between 30-40 years and between 20-30 years. The results are shown in Table 4.2

**Table 4.2: No of Years in Operation**

No of years	Frequency	Percentage
Between 20-30 years	10	32
Between 30-40 years	7	23
Over 40 years	7	23
Between 10-20years	6	19
Less than 10 years	1	3
Total	31	100

**Source: Research Data, 2017**

The table 4.2 shows that 32% of the respondent banks had been in existence for between 20-30 years followed by 23% of commercial banks which had been in operation for between 30-40 years. 23% of the commercial banks had been in operation for over 40 years while 19% had been in operations between 10-20 years. Only 3% of commercial banks had been in operations for less than 10 years.

Further, the research sought to determine the number of staff in each respondent bank. The findings were as indicated in the table 4.3.

**Table 4. 3 No. of Employees**

No of Employees	Frequency	Percentage
Between 1000-3000	17	55
Less than 1000	9	29
Over 3000	5	16
Total	31	100

**Source: Research Data, 2017**

As indicated in table 4.3, 55% of the commercial banks had between 1000 and 3000 employees followed by 29% who had less than 1000 employees. 16% of the respondents had over 3,000 employees.

The respondent banks were also requested to indicate ownership types of their bank. The findings indicated that 61% of the commercial banks operating in Kenya were local and privately owned, 29% were foreign owned while 10% were local public commercial banks. The findings were as presented in the table 4.4.

**Table 4.4: Type of Ownership**

<b>Bank Category</b>	<b>Frequency</b>	<b>Percentage</b>
Local Public	3	10
Local Private	19	61
Foreign	9	29
Total	31	100

**Source: Research Data, 2017**

### **4.3 Knowledge Management**

An organization's perception of KM has a significant effect on how central a role it plays in how an organization leverages its resources for sustainable competitive advantage. The research sought to describe KM in the context of commercial banks in Kenya. To actualize this objective, questions structured to elucidate the knowledge management practice among commercial banks were subdivided into 3 sections that constitute KM. These are: Knowledge management orientation, Knowledge acquisition and knowledge dissemination which constitute knowledge management. The responses to the posed questions were used to describe the extent of KM employment among commercial banks.

#### **4.3.1 Knowledge Management Orientation**

With reference to the knowledge management orientation scale developed by Darroch and McNaughton (2005), the researcher sought to establish from the respondent the definition of KM as describes the situation within their bank. As noted in chapter three, a strong agreement with the statements will also be assumed to reflect a high of score KM practices. In this context, the likert items were treated as likert scales and not likert-type questions/statements. Alikert scale is made up of four or more likert-type items that are merged into one combined score at the point of analysis (Clason&Dormody, 1994).The pooled score is utilized to give a quantitative measure of a particular characteristic to the responses. Consequently, a five-point Likert-type scale (from 0 = undecided, 1 = strongly disagree, 2= disagree, 3=agree, 4 = strongly agree) was created using definitions of knowledge management. Table 4.5 presents the frequency of responses of the various definitions of KM as described by the situation within the bank.

**Table 4.5: Frequency Table on Definition of KM**

0 For Undecided, 1 for Strongly disagree, 2 for disagree, 3 for agree, 4 for strongly agree	Frequency (%)					
	0	1	2	3	4	Total
KM in the bank is a concept integrated into the culture of the company, that allows for seamless exchange of information, knowledge and experience between employees departments	32.26%	6.45%	9.68%	9.68%	41.94%	100%
KM is a concept related to use of I.T, in the form databases or intranets.	41.94%	6.45%	0%	51.61%	0%	100%
KM refers to different methods and tools used for the generation, transfer, and use of knowledge to attain the bank's objectives and goals.	3.23%	3.23%	35.48%	48.39%	9.68%	100%
KM is used as a tool for the evaluation and quantification of the intellectual capital of the bank.	70.97%	3.23%	3.23%	12.90%	9.68%	100%

**Source: Research Data, 2017**

The majority (41.94%) to the highest extent opined that KM in the bank is a concept integrated into the culture of the company, which facilitates the exchange of information, knowledge and experience between employees and the different departments. On KM as a concept related to information technology, 51.61% agreed while 41.94% were undecided. As to whether a concept is related to information technologies use, as databases or intranets, 48.39% agreed while 35.48% disagreed. Slightly over seventy percent were undecided on usage of KM as a tool for the evaluation and quantification of the intellectual capital of the firm, 12.9% agreed while 9.68% strongly agreed. In the first 3 statements there was over 50% agreement with the definitions as describing knowledge management while over 70% were undecided on whether KM was used as a tool in evaluating and quantifying the firm's



intellectual capital. This is indicative that KM is actively being employed by the banks in a bid to attain sustainable competitive advantage.

Descriptive statistics for likert scale in the form of mean for central tendency and standard deviations for variation from the mean were also produced. The definition with the highest average score in this context would suggest the best suited definition of KM within the realm of the banking industry. The table 4.6 below revealed the results.

**Table 4.6: Knowledge Management Definition as Described within the Bank**

Statements	Mean	StDev
KM in the bank is a concept intertwined into the culture of the bank which allows for the exchange of knowledge, information and association between the employees and the departments	2.23	1.78
KM is a concept related to the use of information technologies as intranets and databases	1.61	1.48
KM refers to an array of tools and methods used for the creation, transfer and use of knowledge to attain the firm’s objectives.	2.58	0.85
KM is used as a tool for evaluation and quantification of intellectual capita of the firm.	1.48	0.87

**Source: Research Data, 2017**

The results in the table 4.6 above indicate that the highest mean score of the likert scale was the definition KM as an range of tools and methods used for the creation, transfer and use of knowledge to attain the firm’s objectives (M= 2.58, SD= 0.85). This was closely followed by the definition of is concept intertwined into the culture of the company which allows for the exchange of knowledge, information and association between the employees and the departments (M=2.2, SD= 1.78).The least identifiable definition within the banking industry turned out to be KM as a tool used to evaluate and quantify the firms intellectual capital (M=1.48, SD=0.87).

### 4.3.2 Knowledge Acquisition

Knowledge acquisition refers to the practice of obtaining new knowledge and information. Darroch (2003) elicited that knowledge creation and acquisition in firms is elucidated by six factors: continuous appraisal of the employees to improve their skills and appreciating the attitudes and opinions of the employees and having a well- structured financial reporting systems; being responsive to information about changes in the marketplace; being market oriented by actively seeking industry and customer information through surveys; employment and retention of a large number of employees trained in science, math or math and working in partnership with international clients. These statements were proffered to the respondents to rate on a five-point Likert-type scale (from 0 = undecided, 1 = strongly disagree, 2= disagree, 3=agree, 4 = strongly agree) The frequency of the responses was as tabulated in Table 4.7.

**Table 4.7: Frequency Table on Knowledge Acquisition**

Undecided= 0, Strongly disagree= 1, disagree=2, agree= 3, strongly agree= 4	Frequency (%)					Total
	0	1	2	3	4	
The bank appreciates the attitudes and opinions of their employees	41.94%	3.23%	3.23%	45.16%	6.45%	100%
The bank has structured and well established financial reporting systems	3.23%	12.90%	3.23%	51.61%	29.03%	100%
The bank is responsive to changes in the market.	35.48%	3.23%	0.00%	32.26%	29.03%	100%
The organization employs many employees trained in math, engineering and science	74.19%	9.68%	12.90%	3.23%	0.00%	100%
The organization functions in collaboration with international customers.	12.90%	3.23%	3.23%	54.84%	25.81%	100%
The bank is market oriented as it actively seeks industry and customer information through surveys	12.90%	41.94%	6.45%	3.23%	35.48%	100%

**Source: Research Data, 2017**

As regards the banks valuing their employees' attitudes and opinions, 51.61% agreed or strongly agreed. Over fifty percent agreed that their banks had well developed financial

reporting systems. Seventy-four percent of the respondents were uncertain whether the organization employs and retains a large number of people trained in science, engineering, or math. The respondents were of the opinion that their banks worked in partnership with international customers since 54.84% agreed. In regard to whether the banks were getting information from market through Market surveys, the majority 41.94% disagreed.

Descriptive statistics namely the mean for central tendency and standard deviations for variation from the mean were produced and Table 4.8 below revealed the results.

**Table 4.8: Knowledge Creation and Acquisition Practices Evident in the Bank**

Statements	Mean	StDev
The bank has structured and well established financial-reporting systems.	2.90	1.08
The bank appreciates employees' attitudes and opinions.	2.84	1.32
The banks works in collaboration with international customers.	2.77	1.26
The bank is responsive to information about changes in the market place.	2.16	1.73
The bank is market oriented as it actively seeks industry and customer information through surveys	1.61	1.56
The bank employs and retains a large number of people trained in science, engineering, or math (Science and technology human capital profile).	0.45	0.85

**Source: Research Data, 2017**

The statements on knowledge creation and acquisition practices evident in the banks revealed that on average well-developed financial-reporting systems were practiced to the highest extent (M= 2.90, SD= 1.08). This was closely followed by the organization valuing employees' attitudes and opinions and the banks working in partnership with international customers respectively (M= 2.84, SD= 1.32; M= 2.77, SD= 1.76). Sensitivity to information about changes in the market place averaged 2.16 with a standard deviation of 1.73, while the respondents tended to disagree that their banks gathered information from market through market surveys (M= 1.61, SD= 1.56).

### 4.3.3 Knowledge Dissemination

Knowledge dissemination is the practice of distributing and sharing knowledge within an organization. Knowledge dissemination is critical for the use and leverage of knowledge resources which are considered valuable resources for most organizations (Geiger &Schreyogg, 2012). Darroch et al., (2001) identified five factors to measure knowledge dissemination: readiness to disseminate market information around the organization; sharing knowledge on-the-job, use of particular techniques to distribute knowledge; using technology to facilitate communication; and preferring written communication to disseminate knowledge. These factors were presented to respondents to rate on a five-point Likert-type scale (from 0 = undecided, 1 = strongly disagree, 2= disagree, 3=agree, 4 = strongly agree). The frequency of the responses was as tabulated in Table 4.9.

**Table 4.9: Frequency Table on Knowledge Dissemination**

Undecided= 0, Strongly disagree= 1, disagree=2, agree= 3, strongly agree= 4	Frequency (%)					Total
	0	1	2	3	4	
Market information is freely disseminated within the organization.	32.26%	6.45%	3.23%	19.35%	38.71%	100%
Knowledge is disseminated on the job.	32.26%	3.23%	3.23%	48.39%	12.90%	100%
The bank uses specific techniques to disseminate knowledge.	12.90%	3.23%	6.45%	54.84%	22.58%	100%
The bank uses technology to disseminate knowledge	45.16%	3.23%	3.23%	41.94%	6.45%	100%
The bank has a preference for written communication	6.45%	6.45%	9.68%	35.48%	41.94%	100%

**Source: Research Data, 2017**

The results in table 4.9 above reveal that 38.71% strongly agreed that Market information is freely disseminated within the organization while 19.35% agreed. Roughly, 49% agreed that knowledge is disseminated on the job, 32.26% were undecided while 12.9% strongly agreed. About fifty-five percent agreed that the organization uses specific techniques to disseminate knowledge, while 22.58% strongly agreed. Regarding whether the organization uses technology to disseminate knowledge, the majority,51.62% were either undecided or

disagreed. The majority (41.94%) strongly agreed the organization prefers written communication while 35.48% agreed.

The researcher also sought to generate descriptive statistics on the extent to which knowledge dissemination practices were evident within the bank. The table below revealed the outcome.

**Table 4.10: Evidence of Knowledge Dissemination Practices within the Bank**

Statement	Mean	St Dev
The bank prefers written communication	3.00	1.18
The bank uses specific techniques to disseminate knowledge.	2.71	1.24
Market information is freely disseminated within the bank.	2.26	1.77
Knowledge is disseminated on the job.	2.06	1.55
The bank uses technology to disseminate knowledge	1.71	1.55

**Source: Research Data, 2017**

From table 4.10 above, the respondents opined that to the highest extent the organization preferred written communication (M=3.00, SD= 1.18). Use of specific techniques to disseminate knowledge came a close second at an average score of 2.71 (M= 2.71, SD= 1.24). In terms of free dissemination of market information, respondents tended to disagree that this was actually done in their banks (M=2.26, SD= 1.77). The respondents were of the opinion that knowledge is not distributed on the job and that their banks did not use technology to distribute knowledge respectively (M= 2.06, SD= 1.55; M= 1.71, SD= 1.55).

#### **4.4 Innovation among Commercial Banks**

Innovation is defined as “an organization’s capability of introducing new products to the market, or opening up new markets, through combining strategic orientation with innovative behavior and process” (Wang & Ahmed, 2004). Innovation has been established as a vital ingredient for organizations that desire to remain competitive (Hamel 1998; Roberts 1988). Booz, Allen and Hamilton (1982) posit that innovation can be classified into newness to the world, new products and services to the firm, improvement, and revision to an existing product line, addition to an existing product line, repositioning of existing product and cost reduction to existing products. These innovations can further be classified into either

incremental or radical innovation. This approach was adopted for this study as illustrated below.

#### 4.4.1 Radical Innovations

Radical innovations are competence destroying innovations that making existing knowledge and skills redundant. These types of innovations are considered vital for sustainable competitive advantage as they entail the development of new technologies that may lead to a change in existing market structures (Veryzer, 1988). Radical Innovations can be both new to the firm and new to the world since both represent risky departures from existing business practices (Green et al., 1995). These two types of innovation of types of innovations were presented to respondents on a five-point Likert-type scale (from 0 = undecided, 1 = strongly disagree, 2= disagree, 3=agree, 4 = strongly agree). These sought to determine the extent to which the respondents agreed with the listed statements on the types of radical innovations that have been evident in the bank within the last 10 years. The frequency of the responses was as tabulated in Table 4.11.

**Table 4.11: Frequency Table on Radical Innovations**

Undecided= 0, Strongly disagree= 1, disagree=2, agree= 3, strongly agree= 4	Frequency (%)					
	0	1	2	3	4	Total
We have launched products that are the first of their kind in the world	3.23%	48.39%	3.23%	32.26%	12.90%	100%
We often introduce new ranges of products or services not previously offered by this company	12.90%	3.23%	54.84%	6.45%	22.58%	100%

**Source: Research Data, 2017**

The findings show that approximately 54.85% of the respondents were either undecided, disagreed or strongly disagreed that the bank had launched products that are the first of their kind in the world. The majority (54.84%) strongly disagreed that the company regularly introduced new ranges of products or services not previously offered.

The researcher also generated descriptive statistics to determine the extent to which the respondents agreed with the listed statements on the types of radical innovations that have been evident in the bank within the last 10 years. Table 4.12 below reveals the mean of central tendency and standard deviation of the responses.

**Table 4.12: Radical Innovation Evident In the Bank within the Last 10 Years**

Statements	Mean	StDev
We have launched products that are the first of their kind in the world	1.45	0.99
We often introduce new ranges of products or services not previously offered by this company	1.90	1.72

**Source: Research Data, 2017**

Referencing the results in table 4.12, the banks tended to disagree that there were radical innovations that have been introduced within the bank in the last ten years. This was because the two statements: launch of products that are first of their kind in the world and introduction of new range of products/services in the company all had a mean of below 2 (M=1.45, SD= 0.99; M= 1.90, SD= 1.72) respectively.

#### **4.4.2 Incremental Innovations**

Incremental innovations are the type that present as either line modifications/extensions on existent products/services lines (Dosi,1988). These kind of innovations don't require a drastic departure from existing way of doing things. But rather enhance existing internal competencies by allowing organizational members to add onto their know-how (Tushman& Anderson,1986). These innovations include improvement, and revision to a current product line, addition to an existing product line, repositioning of existent product and cost reduction to existent products. They were presented to respondents on a five-point Likert-type scale (from 0 = undecided, 1 = strongly disagree, 2= disagree, 3=agree, 4 = strongly agree). The frequency of the responses was as tabulated in Table 4.13.

**Table 4.13: Frequency Table on Incremental Innovations**

Undecided= 0, Strongly disagree= 1, disagree=2, agree= 3, strongly agree= 4	Frequency (%)					
	0	1	2	3	4	Total
We often add new products or services to our existing ranges	9.68%	3.23%	9.68%	58.06%	19.35%	100%
We often improve or revise existing products or services	0%	3.23%	6.45%	70.97%	19.35%	100%
We often change our products or services in order to reduce costs	38.71%	3.23%	9.68%	22.58%	25.81%	100%
We often reposition existing products or services	48.39%	6.45%	0%	41.94%	3.23%	100%

**Source: Research Data, 2017**

Referencing the results in table 4.13 above, fifty-eight percent of the banks that responded agreed that their bank often adds new products or services to existing ranges, 19.35% strongly agreed. The majority (70.97%) agreed that their bank often improves or revises the existing products or services. Evidence from the study revealed that majority of the respondents were either uncertain, disagreed or strongly disagreed that changes are often made on products offered for the purpose of reducing costs(38.71% undecided, 3.23% strongly disagreed, 9.68% strongly disagreed). It was apparent from the study that a majority (48.39%) were undecided as to whether the bank often repositions existing products or services. The means of central tendency and standard deviation of the responses are shown in table 4.9 below:

**Table 4.14: Incremental Innovations Evident In the Bank within the Last 10 Years**

Statements	Mean	St Dev
We often improve or revise existing products or services	3.06	0.63
We often add new products or services to our existing ranges	2.74	1.12
We often change our products or services in order to reduce costs	1.94	1.71
We often reposition existing products or services	1.52	1.45

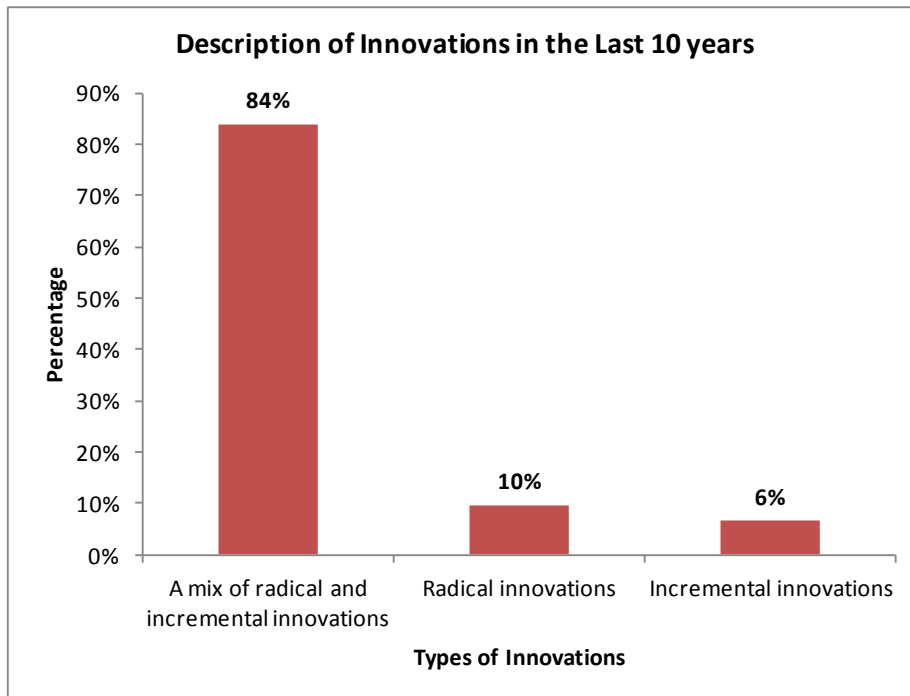
**Source: Research Data, 2017**



The results revealed that the banks revised/improved their products/services to the largest extent (M= 3.06, SD= 0.63). Followed closely was the agreement to the statement that the banks often added new products/services to their existing range of products (M= 2.74, SD= 1.12). However, the respondents disagreed with statements that they regularly change their products/services in a bid to reduce costs and regularly reposition existing products or services (M=1.94, SD= 1.71; M=1.52, SD= 1.45).

#### 4.4.3 Description of Innovations in the Bank over the Last 10 Years

The study sought to determine the types of innovations that have been evidenced among commercial banks in Kenya. Innovations in the context of the research were categorized into 3; incremental innovation, radical innovation and a blend of incremental and radical innovation. To actualize this objective, respondents were asked to best describe the organizational innovations that have been experienced by their respective banks over the last ten years. The figure below reveals the results.

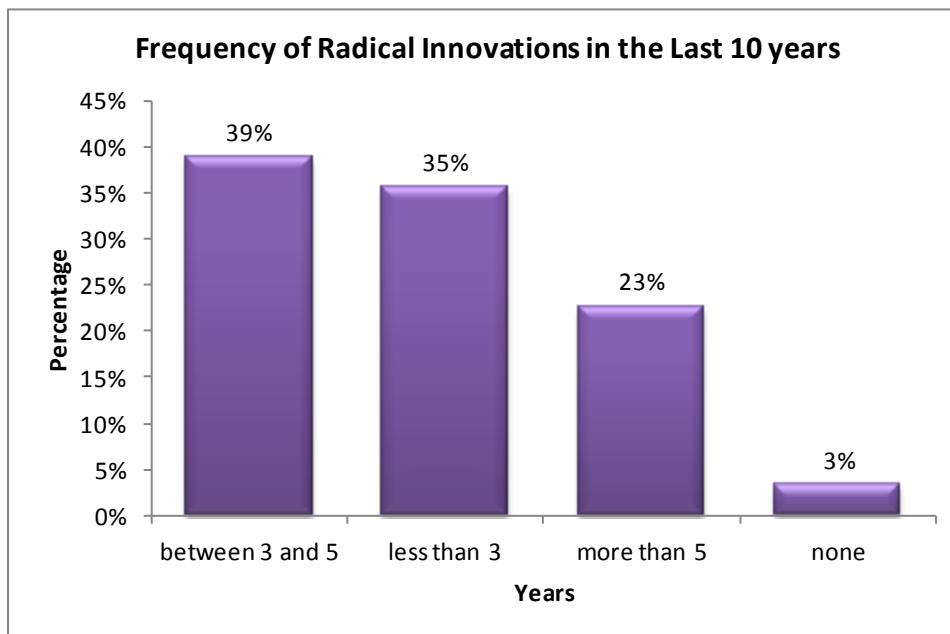


**Figure 4.1: Description of Innovations in the Bank over the Last 10 Years**

According to the study, it was revealed that majority of the banks (84%) had introduced a combination of radical and incremental innovations, 10% had radical innovations only while 6% had done only incremental innovations. The results are reflective of actual practice amongst organizations. Radical innovation seldom happens in isolation. A mix of incremental and radical innovations confers firms with greater balance. It provides for seamless transition from one organizational form to the next.

#### 4.4.4 Frequency of Radical Innovations in the Last 10 Years

The researcher sought to establish the frequency of radical innovations carried out in the last ten years that were new globally or to the firm. The figure below shows the results.



**Figure 4.2: Frequency of Radical Innovations in the Last 10 Years**

The results revealed that majority of the banks (39%) had introduced new radical innovations between 3 and 5 times in the last ten years, 35% said less than 3 times, 23% said more than 5 times while 3% said they had not introduced any radical innovations over the last ten years. The results point to a dynamic sector. The Banking sector has experienced several transformations in the last 10 years. This frequency of radical changes may be explained by; technological advancements, an increase in the regulation of banks, a rise in competition e.g mobile money transfer services as well as shifting consumer interests.

#### 4.5 Relationship between KM and Innovation among Commercial Banks

The main study's objective was to establish whether there was any statistically significant association between KM and innovation among Kenyan commercial banks. To establish the relationship, Pearson's product-moment correlation was used to examine how the components of the independent variable, knowledge management are related with the dependent variable, innovation. The researcher also used multiple regression analysis to meet the objective of the study.

##### 4.5.1 Reliability of Research Instruments

KM was analyzed using the two components: creation and dissemination (Darroch & McNaughton, 2016). According to Mugenda and Mugenda, (1999) establishing reliability of an instrument involves an estimate of consistency of scores among repeated cases. Reliability coefficients evaluate the consistency within various variables. The researcher used the Cronbach alpha coefficient to test the reliability of the data. Cronbach alpha coefficient approximates test-score reliability from one test administration by use of information from the correlation within test components. It gives an approximation of reliability based on co-variation within the cases internal to the test (Cronbach, 2004). It was used for the multiple likert questions in the questionnaire that formed the scale whose reliability the researcher wished to determine. The alpha coefficient for all the items was 0.915, revealing a rather high level of internal consistency. A coefficient of 0.70 and above is considered generally acceptable.

**Table 4.15: Reliability Statistics of Internal Consistency**

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.915	.896	21

##### 4.5.2 Regression Analysis

This subsection presents the results of the regression analysis on KM and innovation among commercial banks. The study performed testing by determining statistical significance of the

coefficients of explanatory variables. This was done by using the two-tailed t-test statistic and the corresponding *p*-values at 1%, 5% and 10% levels. The study used 5% significance level. The model summary (see table 4.15) revealed a coefficient of determination (r square) of 0.792 (79.2%). This meant that a change in innovation could be explained by 79.2% change in the explanatory variables (knowledge acquisition, and knowledge dissemination).

**Table 4.16: Coefficient of Determination of Explanatory Variables on Innovation**

**Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.890 <sup>a</sup>	.792	.777	.55481	1.283

a. Predictors: (Constant), dissemination, Acquisition

b. Dependent Variable: innovation

In addition, the findings indicated that the regression model did not have a problem of auto correlation since the model's Durbin Watson test statistics did not exceed 3 which according to Regression standard error (Std. Error of the Estimate) is the average forecast error. Small values indicate that the estimated model fits the observed data closely. The Std. error was about 0.55.

ANOVA for the explanatory variables was used to describe whether these variables were significant and whether they could be used in the model to predict innovation as shown in table 9 above. Study revealed an f statistic of 53.2 that was associated with a p value of  $p < .01$  and significant at 0.01 alpha level. This result led to the inference that the explanatory variables (knowledge acquisition and knowledge dissemination) were statistically significant to predict innovation in the regression model. Table 4.17 below revealed the regression model of the explanatory variables on the dependent variable. The results showed the unstandardized beta coefficients that could be used to predict the single outcome of innovation.

**Table 4.17: Analysis of Variances**

**ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	32.752	2	16.376	53.201	.000 <sup>b</sup>
	Residual	8.619	28	.308		
	Total	41.371	30			

a. Dependent Variable: innovation

b. Predictors: (Constant), dissemination, Acquisition

Field (2009) argues that in regression analysis it is vital to ensure that the assumption of multi-collinearity had not been disrupted by checking the Pearson Correlation Coefficients, the tolerance level and the variance inflation factor (VIF) values between the predictive variables. Multi-collinearity is the undesirable situation where the correlations among the independent variable are strong; it refers to actual disparity percentage to total disparity among variables. According to Mohamed (2012), if the VIF factor is less than 5 then there is no Multi-collinearity problem. The study examined the effect of Multi-collinearity on the regression models using the Variance Inflation Factor for the independent variables (VIF) analysis. The findings in table 4.18 indicate that the mean variance inflation factors for the independent variables was 2.61 implying that there was no Multi-collinearity problem since independent variables did not have variance inflation factors ( VIF) that exceeded five.

**Table 4.18: Regression Co-efficients**

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.041	.240		.172	.865		
	Acquisition	.729	.152	.670	4.802	.000	.382	2.616
	dissemination	.191	.102	.261	1.869	.072	.382	2.616

a. Dependent Variable: innovation

The established equation becomes:

$$Y=0.041+0.729X_1+0.191X_2+e,$$

Where, Y is innovation, X<sub>1</sub>, and X<sub>2</sub> represent knowledge acquisition and dissemination respectively while e is the error term. From the findings, therefore, holding all factors constant, innovation of commercial banks would be at 0.041. Also this means a unit increase in knowledge acquisition with other factors constant would increase the growth of commercial banks by 0.729. Furthermore, the table above revealed a significant p-value for knowledge acquisition as a predictor of innovation. This led to the conclusion that there was sufficient evidence to suggest that acquiring knowledge is likely to be positively correlated with innovation (t= 4.8, p<.01). In other words, when a firm acquires more knowledgeable staff there will be more innovation in the firm. These results are similar to Jafari et al., (2015) who explored the impact of KM efforts on employee innovativeness and performance within an organizational context. They found that KM acquisition is more vital in encouraging employees' innovative performance as compared to dissemination. In terms of knowledge dissemination, the results revealed that dissemination was not a statistically significant predictor of innovation (t=1.87, p=0.72)

#### **4.5.3 Pearson Product-Moment Correlation**

Pearson product-Moment Correlation Coefficient measures the degree of linear relationship between two variables (normally denoted by the letter *r*). Linear relationship means that a straight line can explain the relationship. Correlation ranges from -1.0 to 1.0 whereby -1.0 refers to perfect negative correlation and 1.0 refers to perfectly positive correlation. Bivariate correlation is an endeavor to understand the method of testing the statistical significance of data in addition to testing the relationship between any two variables. This was done to determine whether there was any significant correlation between the explanatory variables (knowledge acquisition and knowledge dissemination) and the dependent variable innovation. A correlation coefficient matrix was run to establish the relationship between the explanatory variables and the dependent variable as shown in the table 4.19 below. Since the data used is sampled and randomized, it cannot be inferred to be 100% significant. Accordingly, this paper used 5% significance

**Table 4.19: Pearson’s Correlation Coefficient Matrix**

**Correlations**

		innovation	Acquisition	dissemination
innovation	Pearson Correlation	1	.875**	.787**
	Sig. (2-tailed)		.000	.000
	N		31	31
Acquisition	Pearson Correlation		1	.786**
	Sig. (2-tailed)			.000
	N			31
dissemination	Pearson Correlation			1
	Sig. (2-tailed)			
	N			

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

According to the correlation matrix above acquisition was found to be positively correlated with innovation. In addition, the correlation was found to be statistically significant ( $r=.875$ ,  $p<0.01$ ). Likewise, dissemination was also found to be positively correlated with innovation and statistically significant ( $r= .787$ ,  $p<.01$ ). Put another way, based on the data, knowledge innovation and knowledge dissemination is likely to positively influence innovation ninety-nine percent of the time.

**4.6 Discussion of Findings**

The study involved a census of 40 commercial banks in Kenya. The total banks under review were thirty-one representing a seventy-eight percent response rate. The results revealed that the most agreeable definition of KM is as an array of methods and tools used for the creation, transfer and application of knowledge to achieve firm objectives and goals ( $M= 2.58$ ,  $SD= 0.85$ ). On knowledge creation and acquisition practices evident in the banks revealed that on

average well-developed financial-reporting systems were practiced to the highest extent (M= 2.90, SD= 1.08). The study also revealed that the organizations prefer written communication as means of disseminating knowledge (M=3.00, SD= 1.18).

Evidence of major innovations within the banking sector in the last ten years showed that no original products had been introduced. This was also true for new products and services. In terms of incremental innovations, the study showed that to the largest extent, banks improve or revise existing products or services (M= 3.06, SD= 0.63). It also turned out from the study that the best way to describe innovations carried out in the last ten years was a combination of radical and incremental innovations. The frequency of fundamental innovations had been done between 3 to 5 times in the last ten years.

This study revealed that there was sufficient evidence to suggest that acquiring knowledge is likely to be positively correlated with innovation ( $t= 4.8, p<.01$ ). In terms of knowledge dissemination, the results revealed that dissemination was not a statistically significant predictor of innovation ( $t=1.87, p=0.72$ ). The study revealed that KM was positively and statistically significantly correlated with innovation since at least one predictor (knowledge acquisition) was statistically significant in predicting innovation. Therefore the study led to the conclusion that KM has a positive statistically significant relationship with innovation.



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

### **RECOMMENDATIONS**

#### **5.1 Introduction**

This chapter provides a summary of key data results of the research study of the link between KM and innovation. It outlines the implications of the research efforts on theory, policy and practice and offer recommendations therein. Recommended area for further research will also be identified for future studies.

#### **5.2 Summary of the Findings**

The study aimed to; put clear the range of knowledge management, the nature of innovations the banks have under gone and the relationship between KM and innovation among commercial banks in Kenya. The banks were found to apply 2 out of the 4 definitions of KM put forth alluding to an industry where KM is fairly used. Knowledge acquisition was also actively evidenced at the banking institution as the respondents agreed that four out of six of the concepts of KM put forth major were identifiable with their banks .As regards knowledge dissemination, respondents agreed that 80% of the concepts of knowledge dissemination presented to them were evident in their banks. The commercial banks studied therefore, were found to have a varied breadth of the conception of KM and actively employing KM and dissemination.

Three types of innovation namely; Incremental, radical and a combination of both radical and incremental innovation was discerned. The most common form of innovation evidenced in commercial banks was found to be a mix of incremental and radical innovation. 26 commercial banks reported the prevalent use of a mix of radical and incremental innovation in their pursuit of sustainable competitiveness. This translates to 83.9% of the total respondents. 2 commercial banks (6.5% of the respondents) reported the use of only incremental innovation while 3 commercial banks (9.7% of the respondents) utilized only radical innovation. 39% of the respondent agreed that the frequency of radical innovations among the commercial banks was between 3 and 5 in the last 10 years. Amongst the

incremental innovations; revision of existing product or services and addition of new products or services were the most prevalent. Changing and Repositioning of existing products were found to be low.

This study revealed that that acquiring knowledge is likely to be positively correlated with innovation ( $t= 4.8, p<.01$ ). In terms of knowledge dissemination however, the study revealed that dissemination was not a statistically significant predictor of innovation ( $t=1.87, p=0.72$ ). These results are interesting because they negate the previously held assumptions knowledge dissemination practices are of vital for innovation (Nonaka and Takaeuchi, 1995). None of the knowledge dissemination factors presented to respondents in this study was found to have a significant direct effect on innovation. However, since at least one predictor (knowledge acquisition) was statistically significant in predicting innovation, the study led to the conclusion that KM has a positive statistically significant relationship with innovation.

### **5.3 Conclusion**

Kenyan banks were found to have accumulated an extensive comprehension of the concept of KM. KM as wide collections of methods and tools utilized in the course of the creation, assignment and execution of knowledge to achieve an entity's objectives and goals elicited the strongest agreements amongst all elements in knowledge management definition. The perception of KM as a concept embedded into the company's culture, which allows for the exchange of knowledge and experience between employees and departments was also fairly evidenced amongst the banks.

It was evidenced that a well-developed financial-reporting systems was the knowledge acquisition factor that was practiced to the highest extent. This was closely followed by the fact that the banks to a large extent get information from market through Market surveys. The respondents agreed that 4 out of the six acquisition factors were evidenced in their banks. On knowledge dissemination, the bank preferring written communication was found to be most widely practiced. The study also revealed that the banks to a large extent valued employees' attitudes and opinions. Respondents agreed that 4 out of the 5 factors of knowledge

dissemination were evident in their banks. This infers that knowledge acquisition and dissemination is practiced to a great extent among the banks.

On Innovation; the banks had not experienced any of the two types of radical innovations within the last 10 years. The incremental innovations experienced by the banks in the last 10 years were limited to improvements or revisions to existing products or services and addition of new products or services to their existing product lines. The results also revealed that majority of the banks had introduced radical innovations between 3 and 5 times in the last ten years. Pearson correlation found that both knowledge acquisition and dissemination have a significant positive effect on innovation while the multiple regression analysis suggested that acquiring knowledge was likely to be positively correlated with innovation. However it also revealed that dissemination was not a statistically significant predictor of innovation.

#### **5.4 Implications on Policy, Theory and Practice**

The study is of important to the management of Kenyan banks as well as all managers in other organization because they are all required to management their information and knowledge efficiently to ensure their firms use this knowledge to remain innovative and thus sustain competitiveness. As noted, knowledge management is important in promoting innovation within the banks. This study therefore recommends that organizations in Kenya and worldwide implement knowledge management to improve innovation within their organizations. This study will also contribute to knowledge base existing regarding KM approaches adopted by most commercial banks and their implications on innovation in an ever changing environment. The study would be a source of reference material for future researchers on other related topics. The study also highlights other important relationships that required further research; this might be in the areas of relationship between Knowledge management and performance of commercial banks in Kenya.

On policy, the findings of this study should be important to policy makers as it establishes the association between KM and innovation among Kenyan banks. The outcome suggests that policies need to be put implemented to ensure KM is fully comprehensive. It provides important information in the development of policies regulating knowledge management in

Kenya. The findings in this study will therefore, help management of commercial banks in formulating proper policy regarding knowledge management. It will also help CBK in the formulation of proper policies to regulate the banking sector.

The study has authenticated the prominence of KM in building up self-motivated capabilities of banks in a cut-throat competitive environment. Undeniably, KM has convened the banks with innovative competences which in turn has ramped up their competitive advantage. The absence of a KM strategy consequently, can deprive a firm of its competitive edge and capability in the course of coping with the ever changing business conditions that marks the banking industry. Knowledge is a tactical asset which when fittingly leveraged can confer an organization with innovation capabilities and by extension sustainable competitive environment. The continued unveiling of innovative financial products such the Equitel (a sim technology banking platform) is a mark of a good knowledge management.

### **5.5 Limitations of the Study**

The study's inherent weakness laid its research design. The design was a descriptive cross sectional design. KM as a strategy is fluid cognizant of the changing environment. Research carried out at a static point in time may not bring out the effects of changing knowledge management strategy across time. The results of this research therefore might be different if a longitudinal study is chosen. The study might also have some weakness inherent in the use of the 5 point Likert scale questionnaire. Respondents might fail to choose the lowest rating due to negativity attached to it despite its level of accuracy. When given a choice, respondents tend to opt for answers that lie in the middle as they offer a safety net. Personal issues like respondent fatigue might influence a respondent to just tick the questionnaire to complete it without due consideration of the questions at hand.

### **5.6 Recommendation**

The study found that KM in the banks had a potent association to innovation. This knowledge is of great significance to the banks. In other words, the banks might have to consider honing the flaws in their knowledge management strategies. Two focus areas that

most banks had inconsistencies revolved primarily around the utilization of information system technologies, such as data warehouses or intranets. Furthermore, weakness was also pointed out in the area of using KM as an instrument for gauging and quantifying the firm's intellectual capital. On these elements, the respondents delivered a rating of 2 and under in the Likert scale, illustrating their absolute lack of faith in the banks' endeavor.

On Knowledge acquisition, weakness was observed in the banks getting information from market through Market surveys. Secondly the survey also revealed weaknesses in the employment and retention of a large number of people trained in science, engineering, or math (Science and technology human capital profile) which may be occasioned by stiff competition for talent with the banking sector. On Knowledge dissemination, banks need to embrace the uses of technology to disseminate knowledge, which was the major area of weakness observed. This will enable more sharing knowledge amongst employees. While it is common knowledge that a financial institution's culture is founded on confidentiality, measures need to be put in place for staff to access organizational information system, data bases and storehouses within reason. This will enable the improvement of the employees and thus equip them with the capacity to delegate their responsibilities in a more informed fashion. On innovation; personnel require more leeway in applying experimental information and to put into practice their newly acquired knowledge. A higher threshold for tolerating errors and mistakes is also useful so as to encourage independent decision-making and responsibility. It is well-known that it is impractical to create new information without making mistakes.

### **5.7 Suggestion for Further Research**

This study targeted Kenyan commercial banks. The concept of KM and innovation can also be studied in other industries both in the public and private sector. This will enable researchers to compare and contrast results for this industry with others within the same cultural environment. Further, it will allow for generalization of findings with respect to the association between knowledge management and innovation across different industries.

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## APPENDICES

### APPENDIX I: Request to Carry Out Research at the Bank

MARTHA KALONDU MUTINDA  
UNIVERSITY OF NAIROBI  
COLLEGE OF HUMANITY & SOCIAL SCIENCES  
SCHOOL OF BUSINESS  
LOWER KABETE

HEAD OF KNOWLEDGE MANAGEMENT  
STANBIC BANK  
NAKURU

04 OCT 2017

Dear Sir,

REF: ACADEMIC RESEARCH

I am a student at the University of Nairobi Pursuing a Masters of Business Administration- Strategic Management Option. I would like to conduct academic research on the influence of Knowledge Management on Innovation among commercial banks in Kenya.

I humbly request that you fill the below questionnaire to enable me to collect data for the above study. The information you provide will be handled with confidentiality and will be used exclusively for purposes of education and academic excellence.

Yours Faithfully,

Martha Mutinda

## APPENDIX II: QUESTIONNAIRE

Kindly answer the questionnaire by ticking the appropriate box.

### Section A: General Information

1. Name of the bank..... (Optional).

2. How long has the bank been in operation?

- |                     |     |                     |     |
|---------------------|-----|---------------------|-----|
| a. Over 40 years    | ( ) | b. Between 30-40yrs | ( ) |
| c. Between 20-30yrs | ( ) | d. Between 10-20yrs | ( ) |
| e. Less than 10yrs  | ( ) |                     |     |

3. How many employees does the bank have?

- |                   |     |                      |     |
|-------------------|-----|----------------------|-----|
| a. Over 3000      | ( ) | b. Between 1000-3000 | ( ) |
| c. Less than 1000 | ( ) |                      |     |

4. Indicate the ownership of the bank

- |                            |     |                             |     |
|----------------------------|-----|-----------------------------|-----|
| a. Local public owned bank | ( ) | b. Local private owned bank | ( ) |
| c. Foreign owned banks     | ( ) |                             |     |

### Section B: Knowledge Management

1. Knowledge Management Orientation(KM)

To what extent do you agree with the following definitions of Knowledge management as it describes the situation within your bank (from 1-Strongly disagree, 2- Disagree, 3- Undecided, 4 - Agree or 5- Strongly agree): Kindly answer by ticking the appropriate box.

	1	2	3	4	5
KM in the bank is a concept integrated into the company's culture, which facilitates the exchange of information, knowledge and experience between employees and departments					
KM is a concept related to information technologies use, as data bases or intranets.					
KM refers to an array of methods and tools used for the creation, transfer and application of knowledge to achieve firm objectives and goals.					
KM is used as a tool for evaluating and quantifying the firm's intellectual capital.					

## 2. Knowledge Acquisition

To what extent do you agree with the statements below on the knowledge creation and acquisition practices evident in the bank (from 1-Strongly disagree, 2- Disagree, 3- Undecided, 4 - Agree or 5- Strongly agree): Kindly answer by ticking the appropriate box.

	1	2	3	4	5
The organization values employees' attitudes and opinions					
The organization has well developed financial reporting systems.					
The organization is sensitive to information about changes in the market place.					
The organization employs and retains a large number of people trained in science, engineering or math (Science and technology human capital profile).					
The organization works in partnership with international customers.					
The organization gets information from market through Market surveys.					

### 3. Knowledge Dissemination.

To what extent do you agree that the knowledge dissemination practices listed below are evident within the bank (from 1-Strongly disagree, 2- Disagree, 3- Undecided, 4 - Agree or 5- strongly agree): Kindly answer by ticking the appropriate box.

	1	2	3	4	5
Market information is freely disseminated within the organization.					
Knowledge is disseminated on the job.					
The organization uses specific techniques to disseminate knowledge.					
The organization uses technology to disseminate knowledge					
The organization prefers written communication					

### **Section C: Innovation**

#### 1. Radical Innovations

To what extent do you agree that the types of radical innovation listed below have been evident in the bank within the past 10 years (from 1-Strongly disagree, 2- Disagree, 3- Undecided, 4 - Agree or 5- strongly agree): Kindly answer by ticking the appropriate box.

	1	2	3	4	5
We have launched products that are the first of their kind in the world					
We often introduce new ranges of products or services not previously offered by this company					

#### 2. Incremental Innovations

To what extent do you agree that the types of incremental innovation listed below have been evident in the bank within the past 10 years (from 1-Strongly disagree, 2- Disagree, 3- Undecided, 4 - Agree or 5- strongly agree): Kindly answer by ticking the appropriate box.

	1	2	3	4	5
We often add new products or services to our existing ranges					
We often improve or revise existing products or services					
We often change our products or services in order to reduce costs					
We often reposition existing products or services					

3. How best can you describe the innovations in your bank in the last 10 years? Kindly answer by ticking the appropriate box.

- a. Radical innovations ( ).
- b. Incremental innovations ( ).
- c. A mix of radical and incremental innovations ( ).

4. What has been the frequency of radical innovations (new to the world or firm) in the last 10 years? Kindly answer by ticking the appropriate box.

- a. None ( ).
- b. Less than 3 ( ).
- c. Between 3 to 5 ( ).
- d. More than 5 ( ).

Thank you for your participation

**APPENDIX III: List of Commercial Banks in Kenya A complete list of Commercial Banks in Kenya (Adapted from the published accounts of all commercial banks as at April 30, 2017, Central Bank of Kenya)**

1. ABC Bank (Kenya)
2. Bank of Africa
3. Bank of Baroda
4. Bank of India
5. Barclays Bank of Kenya
6. CfCStanbic Holdings
7. Chase Bank Kenya (In Receivership)
8. Citibank
9. Commercial Bank of Africa
10. Consolidated Bank of Kenya
11. Cooperative Bank of Kenya
12. Credit Bank
13. Development Bank of Kenya
14. Diamond Trust Bank
15. Dubai Islamic Bank
16. Eco Bank Kenya
17. Equatorial Commercial Bank
18. Equity Bank
19. Family Bank
20. Fidelity Commercial Bank Limited
21. First Community Bank
22. Giro Commercial Bank
23. Guaranty Trust Bank Kenya
24. Guardian Bank
25. Gulf African Bank



26. Habib Bank
27. Habib Bank AG Zurich
28. Housing Finance Company of Kenya
29. I&M Bank
30. Imperial Bank Kenya (In Receivership)
31. Jamii Bora Bank
32. Kenya Commercial Bank
33. Middle East Bank Kenya
34. National Bank of Kenya
35. NIC Bank
36. Oriental Commercial Bank
37. Paramount Universal Bank
38. Prime Bank (Kenya)
39. Sidian Bank(Formerly K-Rep Bank)
40. Standard Chartered Kenya
41. Trans National Bank Kenya
42. United Bank for Africa
43. Victoria Commercial Bank