RISK FACTORS INFLUENCING IMPLEMENTATION OF TEMENOS T24 CORE BANKING SYSTEM PROJECTS BY COMMERCIAL BANKS IN KENYA: A CASE OF NIC BANK KENYA LIMITED

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DECLARATION

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

Signature…………………………………… Date: …………………………..

JOHN WAMBUGU MUGO
L50/73505/2014

This research project proposal has been submitted for examination with my approval as the candidate's university supervisor.

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DEDICATION

This study is dedicated to my loving family for their support, encouragement and patience during the entire period of my study and continued prayers towards successful completion of this course.

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ABBREVIATIONS AND ACRONYMS

CBK – Central Bank of Kenya

CBS – Core Banking System

CRM – Customer Relations Management

ICT – Information Communication Technology

IS – Information System

IT – Information Technology

KYC – Know Your Customer

MIS - Management Information Systems

NIC – National Industrial Credit Bank

P&L – Profit and Loss

SI – System Integrator

SOW – Statement of Work

TCO – Total Cost of Ownership

T24 – Temenos Core Banking System

UAT – User Acceptance Testing

UK – United Kingdom

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ABSTRACT

This study seeks to establish the risk factors that affect implementation of T24 core banking systems in Kenya. Implementation of core banking systems has always been a daunting task to most banks. The biggest challenge for banks lies in knowing what to do and where to start. According to Kudav & Megha, (2013) many core banking transformation programs encounter serious risk factors midway through the project due to poor coordination and lapses in communication between the vendor and the bank project management teams. It is important to point out that despite the numerous studies undertaken, there are limited findings especially on risk factors influencing implementation of core banking systems in developing nations such as Kenya whereby the majority of the banks, both private and public sector organizations, have embraced core banking systems in the past two decades with an objective of improving their service to the public. The objectives of the study was; to identify the risk factors faced by National Credit Bank Limited during the implementation of its T24 Core Banking System, to establish how project risks management influence the implementation of core banking system by commercial banks in Kenya, to determine critical success factors in core banking systems pre-implementation, implementation and post-implementation phases by NIC Bank Kenya limited and to propose Core banking systems implementation best practices to NIC Bank Kenya limited. This study used descriptive survey research design approach to address the questions raised in the document. The population for this study comprised of all staff from departments of the bank who were charged with core banking system development and implementation. For the purpose of this study, 100 staff were interviewed. The researcher used primary data. The researcher concluded that poor requirement gathering, budgetary constraints, team skill level and migration discrepancy risk factors can influence the success of a T24 core banking implementation process. Depending on how well such risks are managed by the implementing organization, such risks greatly influence the quality of the end product (the delivered system). The researcher observed that, as much as the core banking implementation budget is determined early even before the project begins, cost escalations should be properly risk-managed through the bid negotiation and contractual stages itself. Since core banking implementation projects usually have long project implementation cycles sometimes spanning over years, and therefore there are inherent risks of slippage and cost overruns. Strong project governance structures and risk-management practices should therefore be an inherent part of project management. The researcher also concludes that data migration knowledge on implementation of T24 projects, consideration of quality of source data, data clean up before mapping and extraction and transformation of data from multiple legacy systems as well as consideration of volume of data to be migrated are fundamental processes to ensure the highest level of accuracy possible during data migration. The researcher also concludes that during the selection of systems, it is critical to ensure that user requirements are obtained to ensure that the system purchased meets the strategic goals of the organization and will fulfill the needs of the business / organization. On matters team skill level, an organization must retain control over the project management rather than outsourcing this function. Strategic workforce management is necessary to ensure that an organization has the right human resources capable of developing and delivering the required core banking system. Core banking transformation projects require a lot of highly skilled resources and significant investments over a period of time. It is therefore necessary to adopt an appropriate implementation strategy that takes into account the available financial and human resources.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

This chapter incorporates the historical past of the examine, problem statement, objectives of the study and the research questions of the proposed examine. It additionally covers the importance of the study, scope and definition of key terms (Kramar, 2012). A banking sector is a large and complicated monetary organization, whose operations and strategic focus may be substantially improved by means of the properly-centered implementation of core banking systems to guide enhancements in productiveness, management effectiveness and in the long run, the quality of services provided to clients. According to World Bank, Kenya now has the third-largest financial sector in sub-Saharan Africa. The global financier, however, says there is need for further structural reforms to enable the country achieve its true development potential. The Kenya government's Vision 2030 identify access to finance as critical to enhancing the prospects for growth, regional competitiveness and shared prosperity (Paul, 2015).

The nerve center of technology in a bank's IT department is the 'Core Banking System'. According to (Gartner, 2012), a leading information technology research and advisory agency, core banking system is the returned-end data processing programs for processing all transactions which have passed off for the duration of the day and posting up to date information on account balances to the mainframe. Core systems usually encompass deposit accounts, financial savings accounts and cutting-edge account processing, loan and credit score processing, interfaces to the general ledger and reporting tools inclusive of the application of e-banking and cellular banking (Gartner, 2012).

Majority of Kenyan Banks are increasingly capitalizing on avant-garde core banking systems (CBS) for automating their transactions in order to compete amongst themselves, cater for the ever growing customer needs and to comply with complex regulatory requirements (e.g. Basel II) imposed by the Central bank of Kenya. Core banking systems acquired by Kenyan banks are supplied by foreign vendors at an enormous cost. Therefore, it is vital for the individual banks that

they succeed in their Core Banking System (CBS) implementations, to achieve the desired organizational objectives and CBS project outcomes.

Commercial banks are increasingly using projects in their daily work to achieve corporate goals. Despite all the advantages that the Core Banking System from Temenos, the T24 system brings to its customers, most of the implementation services have experienced challenges ranging from not completing the implementation projects on time, on budget and in most cases the projects not being completed. In recent years researchers have become increasingly interested in factors that may have an impact on project management effectiveness and the success of projects. (Farai, 2016). The identity of dangers in implementation of T24 core banking system projects has been the concern of many researches over the years, these dangers outline an appropriate base that take T24 core banking system projects to failure. in keeping with Morgan and Soden (1973), they tested determinants of failed information systems projects. After analyzing ten unsuccessful initiatives, Morgan and Soden concluded that most failures have been due (now not relatively) to management's incapacity to control, that is plan, arrange, and manipulate. Consistent with Winters (2002), information system threat elements are inadequately skilled and/or inexperienced project managers, failure to set and manage expectations, negative leadership at any and all tiers, failure to competently identify, report and tune requirements, terrible plans and planning procedures, negative attempt estimation, cultural and moral misalignment, misalignment among the project crew and the commercial enterprise or different organization it serves, insufficient or misused strategies, insufficient communique and together with development monitoring and reporting.

Yardley (2002) concluded that project danger elements for information system aren't constrained to project management, but additionally encompass those project activities that lie outside the scope of project control. these elements a few originated from within the commercial enterprise, together with approach, organization, roles, and duties; others, together with competition, politics, and policies will be outside to the business. Narayanan (2012) acknowledges that the challenges of core banking systems implementation is related to; non availability of updated business requirements documents, excessive local customization leading to risk in regression, incomplete traceability of the test scenarios to the business requirements, lack of required business scenarios

specific to the bank, testing all the interfaces with respect to the business process to ensure test coverage, lack of proper audit trail in manual testing and issues in data integrity.

Studies dealing with risk factors influencing information systems in this case (core banking system) included are not homogenous and more are needed to ascertain the best techniques for determining risk factors influencing the implementation of Temenos T24 core banking systems and the importance of various predicators on overall project implementation. Little information is available about T24 core banking system implementation in National Industrial Credit Bank. Therefore, in light of the absence of a consensus on which components constitutes risk factors in the Temenos T24 CBS implementation and, also, in light of the lack of uniformity in the studies already conducted and expressed in the various methodological approaches described in the literature, this study is limited to discussions and analysis of the risk factors affecting implementation of Temenos T24 core banking systems by commercial banks in Kenya. The purpose of this study was to establish the main risk factors influencing implementation of T24 core banking system which could be used by local banks in Kenya to make their Core Banking System projects successful. The research used a case study methodology; National Industrial Credit Bank (NIC Bank) to provide answers to the research questions. Data was collected by administering questionnaires, conducting interviews and reviewing existing literature on risk factors influencing implementation of T24 Core Banking System projects.

According to Sajad, (2013) Temenos T24 (T24) is a complete front- to back-office, Customer Relationship Management (CRM) and product lifecycle management software platform that powers core banking operations. T24 core banking implementation projects are commonly acknowledged as successful when they are completed on time, within budget, and in accordance with specifications and to stakeholders' satisfaction. Due to their technical and complex nature even with good designs and plans it is of paramount importance that they are well managed if they are to be successful. While the benefits of T24 core banking system in the banking sector cannot be disputed, there are several concerns about their success as well as the strategies to be adopted in implementation of the systems in various banks. In this paper, the characteristic challenges (risk factors) that local banks face, which make T24 core banking system implementation in banks fail to succeed were identified and synthesized. The paper also presented results of literature review

of case studies from both developed and developing countries and preliminary studies grounded in the Kenya banking sector reality. The risk factors were identified, synthesized and categorized under common broad categories. This will result in a rich picture of T24 core banking implementation experience that will help to identify possible solutions. A descriptive framework for categorizing risk factors in T24 implementation in financial sector was proposed and illustrated with references to the literature (Sajad, 2013).

1.2 Statement of the Problem

This study sought to establish the risk factors that influence implementation of T24 core banking systems in Kenya. Implementation of core banking systems has always been a daunting task to most banks. Studies have shown that changing core banking systems is a big challenge to banks. According to Nairaland (2008) in his study demonstrated how Zenith Bank was thrown into a mess after the bank upgraded its core banking system.

According to Zawadi (2016), KCB bank had to close all its regional branches for three days during its T24 core banking system upgrade. The bank has presence in over six East African countries including South Sudan. From the above illustrations, it is evident that proper project management practices including risk identification, tracking and management is key as the effect of poorly implemented core banking system could be disastrous. In addition, CBK had delays in processing bonds due to its core banking system implementation challenges and due to incompatibility with the bond trading system. The crisis begun after CBK introduced the T24 bond trading system, which dealers considered to be incompatible with bond trading (Anyanzwa, 2012).

The biggest challenge for banks lies in knowing what to do and where to start. According to Kudav & Megha, (2013) many core banking transformation programs encounter serious risk factors midway through the project due to poor coordination and lapses in communication between the vendor and the bank project management teams. It is important to point out that despite the numerous studies undertaken, there are limited findings especially on risk factors influencing implementation of core banking systems in developing nations such as Kenya whereby the majority of the banks, both private and public sector organizations, have embraced core banking systems in the past two decades with an objective of improving their service to the public. This

study, therefore, sought to investigate the risk factors that affects implementation of T24 core banking system in NIC Bank. The study is important as it provides project managers, researchers, policy makers and administrators with valuable information and findings on risk factors likely to affect the implementation process of Core banking Systems in Kenya.

1.3 Purpose of the Study

The purpose of the study was to establish the risk factors that influence implementation of T24 core banking systems by commercial banks in Kenya.

1.4 Objectives of the Study

This study was guided by the following objectives:

i. To establish risk factors faced by National Industrial Credit Bank Limited during the implementation of its T24 Core Banking System.

ii. To establish extent to which requirements gathering process influence the implementation of core banking system project by NIC Bank Kenya limited.

iii. To establish extent to which budgetary constraints influence the implementation of core banking system project by NIC Bank Kenya limited.

iv. To establish extent to which project team capacity influence the implementation of core banking system project by NIC Bank Kenya limited.

v. To establish extent to which System migration influence the implementation of core banking system project by NIC Bank Kenya limited.

1.5 Research Questions

This study was guided by the following questions as guided by the objectives:

i. What are the risk factors faced by National Industrial Credit Bank Limited during the implementation of its T24 Core Banking System?

ii. How does requirements gathering process influence the implementation of core banking system project by NIC Bank Kenya limited?

iii. How does budgetary constraints influence the implementation of core banking system project by NIC Bank Kenya limited?

iv.   How does project team capacity influence the implementation of core banking system project by NIC Bank Kenya limited?

v.   How does System migration influence the implementation of core banking system project by NIC Bank Kenya limited?

1.6 Assumptions of the Study

It was assumed that the participants recruited gave honest responses. They had the necessary skills and ability to evaluate the quality of T24 Core banking system implemented at NIC Bank and rate it accordingly.

1.7 Significance of the Study

This study gives treasured contributions from each of the theoretical and realistic perspective. From a theoretical perspective, it contributes to the overall know-how of risk factors influencing implementation of CBS system during and after the implementation process. The study is invaluable to the following: It will be important to the management at the National Industrial Credit bank as they will get a better understanding of the challenges they are likely to face while implementing the CBS and the risk factors that are likely to influence the same. The research findings will also provide crucial information that will benefit future academicians and researchers on risk factors influencing Core Banking system during and after they are implemented. The research findings will also add on to the existing body of knowledge in the area of core banking systems. Thus, academics will use this study as a basis for further research on the area.

1.8 Delimitation of the Study

This study set out to analyze the risk factors influencing pre and post implementation of T24 core banking system at National Industrial Credit Bank. The study was limited to four variables that is, risk factors faced during T24 CBS implementation, critical success factors in core banking systems, project risks management and CBS implementation best practices. The study was carried out in National Industrial Credit Bank headquarters where the CBS system users and champions were the main respondents.

1.9 Limitations of the Study

The research study was likely to face limitations obtaining responses from the respondents as the area of study is sensitive as most banks are guided by strict policies on areas regarding disclosure of its information to the public. The researcher strived to follow the law as well as obtaining relevant approvals and permits before engaging the respondents.

1.10 Definitions of Significant Terms Used in the Study

Core banking system refers to the back-end data processing application for processing all transactions that have occurred during the day and posting updated data on account balances to the mainframe.

Kenya Vision 2030 refers to the country's development program covering the period 2008 to 2030 and launched on 10 June 2008 by the President and whose main objective is to help transform Kenya into a middle-income country providing a high-quality life to all its citizens by the year 2030. (GOK, 2007).

Risk refers to a problem that has not yet occurred however that may purpose a few losses or threaten the fulfillment of your project if it did.

Temenos T24 refers to the Temenos T24 banking platform which is a banking software application that uses an open architecture, offering comprehensive and flexible business functionality for banks.

1.11 Organization of the Study

Chapter one contains the introduction to the study. It presents background of the study, statement of the problem, purpose of the study, objectives of the study, research questions, significance of the Study, delimitations of the study, limitations of the Study and the definition of significant terms.

The chapter two covers literature review related to risk factors influencing successful implementation of T24 core banking system. The literature review is done focusing on risk factors, critical success factors, project risks management and key Core banking systems implementation best practices as they relate to the implementation of T24 core banking system in Kenyan

commercial banks. Theoretical and empirical review is analyzed, the summary of the review and the conceptual framework is also presented to bring out relationship between the variables.

Chapter three presents the methodology to be employed in conducting the research study for it to realize the anticipated results. The chapter also highlights the research design, target population under study, research instruments, validity and reliability of the research instruments, sampling procedure, methods of data collection, data analysis methods as well as ethical issues

Chapter four presents analysis of the study as set out in the research methodology. The study findings and discussions are presented on the risk factors affecting implementation of Temenos T24 core banking system by commercial banks in Kenya. In this analysis, frequency tables, percentages and correlation were used. The analysis results, discussions and interpretations are organized as per the specific objectives of the study.

Chapter five presents the discussion of key data findings, conclusion drawn from the findings highlighted and recommendation made there-to. The conclusions and recommendations drawn were focused on addressing the objective of the study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter covers literature review related to risk factors influencing implementation of T24 core banking system. The literature review was done focusing on risk factors, requirements gathering process, budgetary constraints, project team capacity and system migration as they relate to the implementation of T24 core banking system in Kenyan commercial banks. Theoretical and empirical review was analyzed, the summary of the review and the conceptual framework was also presented to bring out relationship between the variables.

2.2 Risk Factors Related to implementation of T24 Core Banking Systems

Commercial banks are increasingly using projects in their daily work to achieve corporate goals. Despite all the advantages that the Temenos T24 system brings to its customers, most of the implementation services have experienced challenges ranging from not completing the implementation projects on time, on budget and in most cases the projects not being completed. In recent years researchers have become increasingly interested in factors that may have an impact on project management effectiveness and the success of projects. (Farai M, Factors Influencing Implementation of Temenos T24, 2016).

consistent with Weagers (1998), a easy definition of 'risk' is a problem that is yet to happen but which can cause a few loss or threaten the success of your undertaking if it did (Weagers, 1998). some of research studies have investigated the issue of the relative importance of diverse danger elements in core banking systems implementations and tried to categorize them in numerous approaches. an awful lot has been written about the reasons of core banking software upgrade assignment failures. terrible technical strategies is simplest one of the causes and this motive is especially minor in assessment to large troubles which include disasters in communications and ineffective management.

The identification of risks in implementation of T24 core banking system projects has been the subject of many researches through the years, these risks define the suitable base that take T24

core banking system projects to failure. According to Morgan and Soden (1973), they examined determinants of failed information systems projects. After studying ten unsuccessful projects, Morgan and Soden concluded that most failures were due (not surprisingly) to management's inability to manage, that is plan, organize, and control.

Lately by the end of Seventies, the implementation of a management information system was considered fraught with uncertainty according to Alter and Ginzberg's article, they identified top risks faced information systems as: 1) lack of designer experience with similar systems, 2) nonexistent or unwilling users, 3) multiple users or designers, 4) turnover among users, designers or maintainers, 4) lack of support system, 5) inability to specify the purpose or usage patterns in advance, 6) inability to predict and cushion impact on all parties, 7) technical problems, cost effectiveness issues.

Later on, in 1980 Zmud stated the factors that influence software development projects, these factors are: 1) Technological complexity, 2) Degree of novelty or structure of the application, 3) Technological change and project size, These risk factors are grouped under four categories: organizational characteristics, environmental characteristics, task characteristics, and individual characteristics, He also found that the cooperation for these factors effects on projects and take them to cost so much and overrun time. A portfolio approach for managing software development risk was discussed by McFarlan (1981). McFarlan mentioned that failure to assess individual project risk to adapt management methods was a major source of the software projects problem. Portfolio approach named three key risks: 1) size in the cost, time, staffing level, or number of affected parties, 2) familiarity of the project team and the IS organization with the target technologies and 3) how well structured is the project task.

Davis paper on requirement determination strategies in 1982 listed three risks: 1) existence and stability of a usable requirement, b) user's ability to specify requirements, and c) ability of analysts to elicit requirements and evaluate their correctness and completeness. Block (1983) pointed to resource failures (conflicts of people, time and project scope) and requirement failures (poor specification of requirements). According to Boehm's 1991 article on software risk management, Boehm recommended the use of approximate checklist of the top ten software risk items: :

employees shortfalls, unrealistic schedules and budgets, developing the incorrect software program features, developing the incorrect consumer interface, gold- plating (i.e. unneeded capabilities), persevering with steam of necessities modifications, shortfalls in externally supplied components, shortfalls in externally accomplished tasks, real-time overall performance shortfalls and stringing computer science competencies.

According to Barki (1993) he proposed a variety of risk factors associated with the organizational environment, including task complexity, the extent of changes, resource insufficiency and the magnitude of potential loss. Sauer had criticized this model and proposed a extra conservative description of information systems failure in 1993. in line with his account, an information system ought to only be seemed as a failure whilst development or operation ceases, and end-customers are dissatisfied with the extent to which the system has served their interests.

In 1994 CHAOS report, the Standish Group identified ten risk factors responsible for project failure, these key factors are: incomplete requirement, lack of user involvement, lack of resources, unrealistic expectations, lack of executive support, changing requirement and specifications, lack of planning, didn't need it any longer, lack of IT management and technology illiteracy. A factor-based approach characterized by Flowers in 1996, who uses a series of seven UK-based case studies to identify failure factors of IS projects, Flowers said if any of specific defined situation occurs by him, the information system will fail, these situations are: 1) whilst the system as a whole doesn't perform as predicted and its normal overall performance is sub-optimal, 2) if on implementation, it doesn't perform as at first meant or if it is so user- adverse that it's miles rejected by users and underneath-applied, (three) if, the price of the development exceeds any blessings the gadget may bring all through its beneficial lifestyles; or (4) due to issues with the complexity of the device, or the control of the project, the information device development is deserted before it is finished. plant life used huge systems failure instances to demonstrate the important thing influencing factors within the behavior of IS projects, Flower's factors include pre-profession with era in mission planning, generation attention over human relations, complexity underneath-anticipated, poor stakeholder control, poor consultation, layout by means of committee, technical fix for a management hassle, bad competence of challenge management and task group, and negative choice choices.

Several sources of uncertainty for projects development had been suggested by Ewusi in 1997, these sources are: complexity, lack of structure, instability of project objectives, newness of the technology, users, IS Management, upper management and project size. In the framework developed by Keil et al. (1998), the risks in the environment quadrant deal with issues over which the project manager may have no control, such as changing scope/objectives and conflicts between user departments. According to CMA Management (1998), at least three common areas for information systems project failure persist. They are: 1) Poor project planning - risk management was not addressed or project plans were weak. 2) Poor business case - in that the need for the system was not fully justified in ways that are related directly to the organizations business requirements or priorities. 3) Lack of top management involvement and support. According to Ropponen and Lyytinen they examined risk- management practices of Finnish software project managers were analyzed in 1998 with 83 projects across a variety of organizations. Six risk categories were identified: scheduling and timing, system functionality, subcontracting, requirement management, resource usage and performance and personal management.

Jiang and Klein suggest that project size, technological change, novelty of application area and personnel changes are the key factors influencing information system project failure. It is not in 1999, however, uncommon to have many of these factors present concurrently during the course of a single information system project. Regardless of the technological platform, whether it be mainframe or network based, the menace and reality of failure persists. Williams's report in 1999 says Most IS organizations are under mounting pressure to deliver systems with fewer resources and in a very short implementation lifecycles. A fundamental reason that causes IS projects to fail are that they are too complex, according to a study done by Murray in 2000. Inherently complex projects must handle both technological issues and organizational factors, which are far too often outside the project team's control. In addition, both information technologies and business environments are evolving at an alarming rate, making technical specifications and business requirements increasingly uncertain and tough to manage. Schmidt et al.'s study in 2001 revealed a ranked factor list based on a Delphi procedure. The investigation was carried out in three different countries with different socio-economic and cultural backgrounds, where panels of experienced IS project managers participated in identifying, and later, ranking the most common risk factors in the order of criticality. Although, the study revealed some 53 factors in all, about 29 of them were

ranked by the different panels, and about 11 of them had composite ranks – ranked by all three panels. The list of the 11 factors and the composite (average) ranks assigned to them by the different panels are: Lack of top management commitment to the project, Failure to gain user commitment, Misunderstanding the requirements, Lack of adequate user involvement, Lack of required knowledge/skills in the project personnel, Lack of frozen requirements, Changing scope/objectives, Introduction of new technology, Failure to manage end user expectations, Insufficient/inappropriate staffing and Conflict between user departments (Murray, 2000).

According to Winters (2002), Information System risk factors are inadequately trained and/or inexperienced project managers, failure to set and manage expectations, poor leadership at any and all levels, failure to adequately identify, document and track requirements, poor plans and planning processes, poor effort estimation, cultural and ethical misalignment, misalignment between the project team and the business or other organization it serves, inadequate or misused methods, inadequate communication and including progress tracking and reporting.

Yardley concluded in 2002 that project risk factors for Information System are not limited to project management, but also include those project activities that lie outside the scope of project management. These factors some originated from within the business, such as strategy, organization, roles, and responsibilities; others, such as competitors, politics, and regulations will be external to the business.

Narayanan, (2012) acknowledges that the challenges of core banking systems implementation is related to; non availability of updated business requirements documents, excessive local customization leading to risk in regression, incomplete traceability of the test scenarios to the business requirements, lack of required business scenarios specific to the bank, testing all the interfaces with respect to the business process to ensure test coverage, lack of proper audit trail in manual testing and issues in data integrity

Studies dealing with risk factors influencing successful implementation of information systems in this case (CBS) included are not homogenous and more are needed to ascertain the best techniques for determining risk factors influencing the implementation of Temenos T24 core banking systems

and the importance of various predicators' on overall project implementation. Little information is available about T24 core banking system implementation in National Industrial Credit Bank. Therefore, in light of the absence of a consensus on which components constitutes risk factors in the Temenos T24 CBS implementation and, also, in light of the lack of uniformity in the studies already conducted and expressed in the various methodological approaches described in the literature, this study is limited to discussions and analysis of the following key points in relation to implementation of Temenos T24 core banking systems: risk factors, the critical success factors, project risks management and key Core banking systems implementation best practices (Yardley, 2002).

2.2.1 Risk factors and Core Banking System Implementation

Implementing or replacing a T24 core banking solution is a daunting task for a most of Kenyan banks. Some of the banks tend to put off changing/replacing their core banking solutions for decades by investing in local work-arounds, quick fixes and narrow point solutions. This leads to the creation of a complex network of solutions, which is expensive, risky and quite difficult to maintain as demonstrated by Kudav & Megha, (2013). The biggest challenge for banks lies in knowing what to do and where to start. In this case, a systems integrator (SI) can play a crucial role by providing consultancy services on the advantages and disadvantages of system replacement. The ideal SI can provide these services by leveraging a large pool of resources with the requisite skill sets as well as hands-on experience with core banking transformations worldwide.

According to Kudav & Megha, (2013) many core banking transformation programs encounter serious risk factors midway through the project due to poor coordination and lapses in communication between the vendor and the bank project management teams. An SI can come in handy and reduce this confusion through its expertise in overall program management and through ensuring systematic information sharing among all the stakeholders. Kudav and Megha further illustrates some other issues encountered during a core banking transformation as follows. Insufficient information collected during the requirement gathering phase, Failure to manage change properly, Poor risk management and Lack of "People skills" in project leadership. In addition, higher IT cost in the event that multiple solutions need to be replaced, insufficient

staffing, lack of required knowledge/skills in the project personnel and poor team relationship were also heighted as possible issues that hamper T24 systems implementation process (Kudav & Megha, 2013).

2.3 Requirement Gathering and Core Banking System Implementation

Requirements gathering for systems that need to be integrated with the T24 Core banking system present the next set of challenges in the implementation. Typically, during the preparation of the contract/ statement of work (SOW) neither the bank nor the implementing vendor does a detailed study of the existing peripheral systems of the bank that are already integrated and being used. All these interfaces end up being discovered as the implementation progresses, and typically this requires both technical and functional knowledge to conduct a thorough requirement analysis. But in most of the cases these requirements are gathered by the Technical consultant, which results in the possibility of missing critical business-related requirements (Kannan, 2016).

Most of the banks and vendors take the Statement of Work (SOW) as the requirements document. As a result, the goal i.e. 'what the final system should be' becomes a moving target, based on everyone's own interpretation of the SOW. Usually a group of Business Analysts will work with the bank to identify and document their existing processes and requirements and try to map them to their software, however, due to the lack of a strategic document or insight or both, this exercise quickly becomes a source of problem for the remainder of the project. Ideally, at this stage, the resulting business analysis should list among other things: current business process, proposed business process, gaps between the required functionality and the new system, mapping of the proposed product set to the new system, dependencies on other channels / products, interfaces as well as UAT Cases.

Any business analysis exercise that leaves the Gaps or the mapping to the new system will automatically result in another round of analysis. User Acceptance Test (UAT) cases are mandatory at this stage, as they will set the parameters for success or failure of the new system and will also allow the vendor to complete unit testing on their own (Kannan, 2016). Insufficient information collected during the requirement gathering phase may result to unsuccessful implementation of T24 core banking system project. Experience shows that there is a high failure rate of core banking system implementation. It is estimated that 25% of core banking system

implementations fail without any results while 50% do not achieve the intended objectives (where cost and implementation time double). Some of the reasons for such failures are insufficient information collected during the requirement gathering phase, the banks don't have clear objective defined, and scope change in the midway of a project. Only 25% of the implementations can be considered successful (Kudav & Megha, 2013).

2.4 Budget Constraints and Core Banking System Implementation

core banking implementations are expensive and are made of diverse in advance charges for software program, hardware and dealer implementation services in addition to maintenance or routine charges. services from the core banking system supplier, like customization and implementation fees, can frequently exceed the preliminary license rate. Over the life of a core banking system, the preliminary license rate comes to much less than half of the total cost of ownership (TCO) even as maintenance expenses or recurring license fee involves a mean of approximately 18%. Core banking implementation projects are not just about project management, but rather about program management. A program is a collection of multiple projects each of which have their own timelines, dependencies, RACI* matrices, deliverables, and milestones. Many banks are not geared up to handle a Program of this size, complexity, and duration. The fact that multiple projects would be involved, and each of these projects would impact others in some way or the other is quite often a rude awakening that comes somewhere during the business analysis phase, (Rishi, 2013).

Ripping out old infrastructure and replacing this with a newer, more efficient solution for routing and executing transactions is an undertaking that requires fundamental transformation across core processes, data flows and architectures. A full core banking replacement is a multiyear transformation that can cost hundreds of millions of dollars depending on the size and complexity of the financial institution, scope of implementation and the deployment approach. For some banks, a core banking replacement simply presents too much cost and risk. Decisions to replace core platforms are repeatedly being delayed or deferred due to the high cost of implementation, a lengthy delivery cycle, the risk that potential system disruption poses to client experience or the danger that banking technology will already be outdated by the time the system is replaced (Wim & Mathias, 2016).

Implementing core banking systems requires enormous changes to supporting structures and systems, hardware, interfaces and network components. In addition, there are training and change management costs associated with re-skilling and re-deployment of human resources on the new system, (Rashi, 2013). According to him, core banking transformation costs could be divided into two categories, one includes the upfront costs which are incurred during the initial phase of the core banking implementation. These costs include initial license fee, customization charges as well as the hardware charges including the network storage and security. Secondly, we have the recurring costs which must be met regularly, probably on an annual basis. They include costs such as recurring license fee, internal IT costs and other overhead costs. Programs such as these have a tendency to quickly escalate in terms of budgeted costs. It is extremely important that the Bank institute a dedicated financial control function for the transformation program that tracks capital and operational expenditure on a weekly basis, as well as ensures that payments are made on time (in order not to demotivate vendors), as well as payments are made only when the deliverables are up to the mark and delivered on time. This aspect may further be enhanced by keeping a bonus component for on-time or before-time delivery of key milestones. Cost escalations should also be properly risk-managed through the bid negotiation and contractual stages itself. Since core banking implementation projects usually have long project implementation cycles sometimes spanning over years, and therefore there are inherent risks of slippage and cost overruns. Strong project governance structures and risk-management practices should therefore be an inherent part of project management (Rashi, 2013).

2.5 Project Team Capacity and Core Banking System Implementation

Team capacity in any project implementation is very crucial during the project implementation process. There are a number of factors to consider while constituting a team to handle and manage project implementation process. A skilled, cohesive and qualified team has higher probability to successfully deliver a project especially core banking system.

2.5.1 Leadership

lack of committed leadership is a purpose of project failure. projects want management that is visionary, decisive and committed. The GAO said that "it's miles important that top management supports and sustains fundamental change projects through to crowning glory". Additionally, they

noted that a key factor for successful system implementation was making sure that top management drives the change agenda.

One document stated that most initiatives dealing with extensive demanding situations concerned major commercial enterprise transformation and those problems were hardly ever due to IT alone. In its evaluation of 21 massive IT projects, the record observed leadership of primary enterprise transformation missing. elevating business transformation to the equal level as policy and operational problems become considered critical. The report recommended the creation of a new deputy minister position (at the provincial level) to oversee projects with foremost commercial enterprise transformation. another key issue became the mobility of key project team participants, which impacts the continuity of a project. This outcomes in subtle responsibility and obligation for the project, and it also has an impact on the overall governance of the project (Rishi, 2013).

2.5.2 Inadequate or Inappropriate Organizational Capacity is a Recurring Risk

Organizational potential is the technical and managerial capability to deliver an IT project in addition to the potential of a whole organization to enhance the way it does business with the aid of the use of all of a system's competencies. efficient use of assets is crucial to an organization this is working with constrained budgets. successful project delivery in such a surrounding it calls for the capability to move personnel easily into positions in which they could pleasant be used (Rashi, 2013). massive IT projects which includes core banking systems require tremendously professional individuals in key management roles and these people are scarce. companies that proceeded without the right expertise to control them generally revel in delivery problems.

2.5.3 Lack of an Adequate Skill Base

The dearth of available project managers has been an ongoing undertaking for the enforcing agency. maximum businesses have low ranges of IT challenge management revel in. An organization need to hold control over the project control in place of outsourcing this function. Strategic personnel management is essential to ensure that an company has the human assets able to developing and handing over the services required. choosing people primarily based on their capabilities, and no longer wherein they formerly worked (including when groups are being consolidated), will increase the achievement of important change initiatives. lack of talent, experience and/or resources are visible as recurring dangers to the fulfillment of IT tasks. center

banking transformation initiatives require a variety of sources and enormous investments over a time period. it's far consequently vital to adopt the perfect implementation strategy that takes under consideration the to be had economic and human sources (Rishi, 2013).

2.6 Migration Discrepancy and Core Banking Systems Implementation

2.6.1 Data Migration

Transforming core systems is a top priority for many retail banks. But with core banking transformation comes a huge data migration exercise, involving millions of records, in a host of different formats, potentially from scores of sources. There's no margin for error, the integrity of this mission critical data is paramount (SAP, 2016). Old legacy systems often come with lack of documentation, missing data and inadequate expertise. Data mapping, cleansing, extraction and transformation turn out to be the biggest nightmare. The complexity increases manifold when there is need to migrate data distributed across multiple legacy systems. Faulty designs and incorrect migrations can derail the execution plan. Banks should focus and put a lot of emphasis on aspects of the implementation program (Venkatesh, 2013)

core banking structures no longer only power banks' operations however additionally assist to scale up new possibilities and boom. they've emerge as even greater essential as business aligns with virtual initiatives, and given regulatory compliance, M&As and the demanding situations related to legacy systems. no longer exceedingly, 60% of banks are undertaking a metamorphosis in their core banking structures. A critical detail of this alteration is the motion of data from the legacy system to the target system. statistics migration exercises contain records from one-of-a-kind sources and in one-of-a-kind codecs. a few banks wrongly anticipate that the data migration method is a specialized technical/IT undertaking. In reality, business/functional customers are similarly vital within the process to make sure a clean transition. data migration in core banking is all about the seamless movement of entries, balances, P&L/balance sheet facts, consumer facts, contracts, products, KYC details and other types of financial/nonfinancial facts from the supply to the goal system (Rajesh, 2016). The facts migration manner bears full-size chance if now not done correctly. certainly, negative information high-quality can avert the adoption of the new system.

2.6.2 Data Migration Challenges

In step with Rajesh, (2016) the principle issues that banks face in the course of the information migration technique are: lack of data know-how. Record number of migration projects fail regularly because of a lack of know-how of the information in legacy systems. A number of the most commonplace motives for this include: Incomplete documentation of legacy systems, relationship among data no longer described as it should be, dearth of assets that recognize the legacy system data as well as assumptions about records structure. Secondly, quality of supply data is also a key issue. Information satisfactory problems in legacy structures are certainly one of the biggest challenges and motives for project delays and value overruns. most banks are not aware of such great problems on the time of embarking on a core banking transformation. additionally, they lack the understanding to take decisive motion on grimy data inside the legacy system. frequently data quality problems aren't identified till the goal system fails.

Thirdly, big volumes of data come with extended complexity. Big statistics volumes increase the weight of facts governance and affect records quality. In addition, mapping of statistics records is often metadata-driven. Assumptions-led mapping causes big errors and an excessive rework rate. Duplicate facts such as legacy systems also often comprise a couple of entries for the equal customer. Depending on the financial institution's requirement and the target machine specifications, the records should be treated so that it will avoid duplication or redundancy.

Reconciliation of statistics: both economic and nonfinancial facts from the legacy system should be properly migrated to make sure records sanctity. With complex business policies and big volumes of records, reconciliation will become an exhausting mission. Loss of flexibility, change requests that effect the migration technique (e.g., addition/deletion of fields at a later degree) ought to be analyzed nicely earlier than being carried out. The lack of ability to control such modifications will increase value and complexity. Commercial enterprise-as-standard operations: a main chance that any center banking implementation faces is its effect on "enterprise as regular" operations. Any effect at the financial institution's customers ought to be minimized. paintings-arounds want to be deliberate to help the numerous digital channels and hold operational continuity. In nowadays dynamic surroundings, banks generally tend to consolidate and end up global banks through imposing a popular middle banking gadget. A powerful migration method allows banks to improve to the brand new device with minimum commercial enterprise disruption.

It also reduces the chance involved in coping with the complex process. With sturdy program governance, banks are geared up to account for most viable mistakes and malfunctions by means of bringing inside the right human beings, implementing worldwide high-quality practices and partnering with the proper providers (Rajesh, 2016).

2.7 Conceptual Framework

This part of the research will seek to give clear and consistent definition of the research questions. The conceptual frame work was used to show the relationship between the dependent variable which is the research problem and the independent variables.

Independent Variables

Risk factors
- Budgetary constraints
- Poor project Management
- Inadequate skill level / insufficient staffing
- Poor requirements gathering
- Migration Discrepancy

Moderating Variables
- Government policies
- CBK Regulations

Dependent Variables

T24 Core banking System Implementation

Requirement Gathering
- Current Business process
- Gaps
- Proposed business process

T24 Core banking system Project implementation
- Successful implementation process (On-time & on-budget)
- Reliable/stable CBS System
- Satisfy user requirements

Project Team skill level
- Underqualified staff
- Trainings and certifications
- Experience in similar projects

Operating Environment
- Complexity of customers

Budgetary Constraints
- High Cost of implementation
- Insufficient Budget
- Change of scope

Intervening Variables

Migration Discrepancy
- Data Migration
- Challenges

Fig. 1 Conceptual Framework.

2.8 Summary of Chapter

Project management is a complex activity that requires structures, procedures and processes that are appropriate to one's project. This will enable one to manage the inevitable changes that occur throughout a project's lifespan in a professional manner to ensure success. Core banking systems are complex projects to implement and may be faced with a number of serious risks and challenges which calls for prudent risk management plans for them to succeed. Chapter three presents the methodology employed in conducting the research study for it to realize the anticipated results. The chapter also highlighted the research design, target population under study, sampling procedure, methods of data collection as well as data analysis methods

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the methodology employed in conducting the research study for it to realize the anticipated results. The chapter also highlighted the research design, target population under study, research instruments, validity and reliability of the research instruments, sampling procedure, methods of data collection, data analysis methods as well as ethical issues.

3.2 Research Design

To develop an understanding of risk factors influencing implementation of core banking systems in commercial banks in Kenya, the researcher adopted the Ex post facto research design for this study. According to (Kerlinger, 1986), Ex post facto design is a quasi-experimental study examining how an independent variable, present prior to the study, affects a dependent variable. Ex post facto research is ideal for conducting social research when it is not possible or acceptable to manipulate the characteristics of human participants. It can be used to test hypotheses about cause-and-effect or correlational relationships, where it is not practical or ethical to apply a true experimental, or even a quasi-experimental design. In this study, the ex post facto research was based on the selected risk factors that influenced the implementation of the T24 Core banking system in NIC Bank.

According to Kerlinger and Rint (1986) they explained that in the context of social science research an ex post facto investigation seeks to reveal possible relationships by observing an existing condition or state of affairs and searching back in time for plausible contributing factors. Therefore, the researcher used the ex post facto research design as a method of testing out possible antecedents of events that have happened and cannot be manipulated by the researcher. For the purpose of this study, the researcher opted to use ex post facto research to obtain a picture of risk factors influencing implementation of T24 core banking system with a view to improving the implementation process in the banking sector.

3.3 Target Population

The target population for this study was all staff that actively participated in T24 implementation either as developers, testers, project managers or support team, in at least three banks in Nairobi that upgraded or newly implemented T24 core banking system including NIC Bank Ltd. In this section, the researcher went ahead to describe the targeted population in terms of their description and numbers. The section further goes ahead to indicate the stages of sampling and how the final sample size was arrived at. According to Burns & Grove (2003), the research population is the entire set of individuals that meets the sample criteria of the study.

NIC Bank members of staff from various departments of the bank who were charged with core banking system requirements gathering, development, implementation and testing, located in Nairobi were selected as the target population. Due to their active role in the implementation process, the researcher assumed that this group would be the most suitable research population to meet the research purpose and objectives. The researcher also targeted staff members from other banks that could have implemented T24 as their core banking system.

The population is presented in Table 3.1.

Table 3:1 Target Population

	Number	%
Other Banks Staff	49	49
NIC Bank ICT Staff	23	23
NIC Bank Business Team members	21	21
NIC Bank Project team	7	7
Total	100	100

Source: HR Records as at December, (2016).

3.4 Sample Size and Sampling Procedure

Sampling is the procedure of selecting a number of individual or objects from population such that the selected group contains element representative of the characteristics found in entire group used to get a sample from the profanity (Kombo & Tromp, 2006). The study will target a total of 100 members from different banks as highlighted below. NIC Bank members of staff of various departments of the bank comprised of 51 members out of 100; 21 of who were charged with core banking system development and implementation located in Nairobi, Kenya and 30 additional staff members who assisted in user acceptance testing of final product. Another sample of 49 was selected from staff from other banks that have implemented T24 in the recent years, bringing the total sample size to 100 members. This agrees with Mugenda and Mugenda (1998), who recommends that where the target population is small, a selected sample would not be necessary; the whole population should be studied.

The sample technique used to identify respondents was purposive sampling technique. According to Olive and Abel Mugenda (2003), purposive sampling allows a researcher to use cases that have the required information with respect to the objectives of his or her study. A total of 100 members of staff from various departments from NIC and other banks in Nairobi were taken as sample size for the study.

3.5 Research Instruments

The research study used both primary and secondary data. Primary data was obtained through self-administered questionnaires with closed and open-ended questions. The researcher designed and provided the questionnaires to the target respondents. A 5-point Likert scale was used to assess the risk factors influencing T24 core banking system implementation at NIC bank limited. The questionnaires included structured and unstructured questions and administered through drop and pick method to all the staff who were actively involved in the implementation of the core banking system at NIC Bank Ltd.

The closed ended questions were to enable the researcher to collect quantitative data while open-ended questions enabled the researcher to collect qualitative data. The questionnaire was divided into two sections. Section one is concerned with the general information about respondents, while

section two dealt with the issues of risk management practices and performance. The use of questionnaire method is supported by Burns (2000) as an appropriate tool especially when dealing with many respondents. The use of a questionnaire allows every participant to get a similar assessing tool to complete which may result in standardized responses.

3.6 Validity of the Research Instruments

According to Sommer (2007), validity of a research is asking the right questions framed in the least ambiguous way. Mugenda and Mugenda (2003), goes ahead to state that validity refers to the accuracy and meaningfulness of inferences which are based on the research results. It is also the degree to which the results obtained from the analysis of the data represents the phenomenon under the study. According to Robinson (2002). An instrument is valid when it measures what it purports to measure. For the subject research, validity of the questionnaire will be measured to ascertain all the areas necessary for the study are covered in the instrument. Validity will be via inclusion of objective questions in the questionnaire and by pre-testing the instrument to be used to eliminate any ambiguous, awkward, or offensive questions and technique as emphasized by Cooper and Schindler (2003). To establish the validity of the instrument the researcher also strived and sought opinions of experts in the field of study especially the lecturers (my project supervisor) as well as IS project managers.

3.7 Reliability of the Research Instruments

According to Mugenda & Mugenda, (2003) reliability refers to a measure of the degree to which research instruments yield consistent results. Reliability of the questionnaire was evaluated through administration of the said instrument to the population sample of 100 respondents from the target population. According to Crocker & Algina (1986), there are different means of estimating the reliability of any measure. However, the researcher used the construct composite reliability co-efficient (Cronbach alpha) method to establish the reliability of the research instrument. Reliability of the questionnaire was evaluated through administration of the said instrument to the pilot group of 81 respondents from the target population. The higher the score, the more reliable the generated scale is. A construct composite reliability co-efficient (Cronbach alpha) of 0.67 or above, for all the constructs, was considered adequate for this study. This was

determined via SPSS. Nunnaly (1978) has indicated 0.7 to be an acceptable reliability coefficient but lower thresholds are sometimes used in the literature.

Table 3.2: Case Processing Summary

		N	%
Cases	Valid	75	92.6
	Excluded[a]	6	7.4
	Total	81	100.0

a. List wise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.670	30

3.8 Data Collection Procedures

Before commencing the Data collection process, the researcher sought approval for data collection from all relevant authorities including University of Nairobi supervisor and NIC Bank Ltd/University of Nairobi Ethics and Research Committee. A permit to collect data was also obtained from the National Council for Science and Technology. The questionnaires used to carryout data collection were distributed to all members sampled. The study sought for quantitative data that would be appropriate in answering the research questions. The researcher employed close-ended questionnaires to the sampled respondents which provided a set of alternatives for the respondents. Each respondent handled his/her questionnaire privately. There was no individual identity label on the questionnaires.

3.9 Data Analysis Technique

The completed questionnaires were collected and checked for completeness. The research's descriptive data as collected was analyzed, interpreted and inferred through triangulation of information. The data was then coded and entered into the Statistical Package for Social Sciences (SPSS) version 22.0.0.0 which was then organized into frequency tables and cross tabulation tables for analysis to enable the responses to be grouped into various categories. However, MS Excel statistical software was equally helpful in analysis of the data collected. To ensure that collected information is clearly understood, data was analyzed and presented through the use of descriptive statistics such as standard deviations, means, and frequency distributions.

The established trends, patterns, and relationships from the information obtained were used to answer the research questions of the study. Also, the relationship between the independent and dependent variables were determined. The final output for this analysis was presented, discussed and interpreted in chapter four.

3.10 Ethical Issues

According to Saunders, Lewis, and Thornhill (2009) they stated that ethical issues in research refers to the appropriateness of one's behavior in relation to the rights of those who become the subject of one's work, or are affected by it. The researcher endeavored to maintain a high degree of confidentiality where the identity of the respondent was not revealed. All the information was obtained from the respondents voluntarily and with their consent. Prior to collecting the information, permission was sought from the relevant authorities to allow collection of information from respondents.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION, INTERPRETATION AND DISCUSSION

4.1 Introduction

This study presents analysis and findings of the study as set out in the research methodology. The study findings and discussions are presented on the risk factors affecting implementation of Temenos T24 core banking system by commercial banks in Kenya. In this analysis, frequency tables, percentages and correlation were used. The analysis results, discussions and interpretations are organized as per the specific objectives of the study.

4.2 Questionnaire Return Rate

The study targeted a sample of 100 respondents. As the below Table 4.1 shows, 81 respondents filled in and returned the questionnaire giving a response rate of 81%. This commendable response rate was made a reality after the researcher made personal commitment to visit and remind the respondent to fill-in and return the questionnaires. According to Mugenda and Mugenda (2010), this response rate was excellent. She states that a response rate of 50% is adequate for analysis and reporting; a rate of 60% is good and a response rate of 70% and over is excellent. Therefore, this response rate was considered sufficient and excellent for data analysis.

Table 4.1: Response Rate

Response	Frequency	Percent
Responses	81	81
Non-responses	19	19
Total	**100**	**100**

4.3 Demographic data of the respondents

The study targeted almost all the key personnel who were directly involved in the implementation of Temenos T24 core banking system in select commercial banks in Nairobi. This section represents Demographic details of the respondents which included gender, age, highest level of education and how long the respondent has worked in the banking industry. From the findings in table 4.2 below, 64.2% of the respondents indicated that they were female while those who indicated that they were male were 35.8%. Below results show that the female gender were more readily to participate in the study compared to the male gender.

Table 4.2: Respondents by Gender

Gender	Frequency	Percentage
Male	29	35.8
Female	52	64.2
Total	**81**	**100**

4.3.1 Age of the respondents

The study also sought to establish the age of the respondents by responding to the age question in the questionnaire. From the responses on the age question, 2.4% of the respondents indicated that they were aged between 18-24 years, 28.6% were aged between 25-30 years, 33% were aged between 31-36 years, 20% were aged between 37-42 years, 10% were aged between 42-48 years, while 6% were aged over 48 years.

Table 4.3: Age of the respondents

Age (in Years)	Frequency	Percentage
18 - 24	3	3.7
25-30	35	43.2
31 – 36	35	43.2
37 – 42	6	7.4
43 – 48	2	2.5
Above 48	0	0
Total	**81**	**100**

4.3.2 Highest Level of Education

From the findings, 28.4% of the respondents indicated that they had a postgraduate degree, 70.4% of the respondents indicated that they had a Bachelor's degree while 1.2% of the respondents indicated that they had a college diploma. Data shows majority of the personnel who responded had attained Bachelor's degree level of education. A quarter of the respondents had a post graduate degree. The study sought to know the level of education attained by the respondents because evaluation of some risk factors in this study required some level of education to be understood especially risk factors around requirement gathering, team skill level and budget.

Table 4.4: Highest Education Level

	Frequency	Percentage
College	1	1.2
Graduate	57	70.4
Post Graduate	23	28.4
Total	**81**	**100**

4.3.3 Years of Service in the banking industry

According to the findings, majority of the respondents are those who had served in the banking sector between 4 to 10 years. 28% of the respondents had served for between 4 - 6 years, 26% of the respondents had served for between 6 - 8 years while 21% of the respondents had served for between 8 -10 years. The number of years was crucial as it has a direct correlation to the quality of system delivered. Respondents with higher number of experience in the banking sector have necessary experience to carryout proper analysis of the information gathering process, planning and management of the whole implementation process as compared to the less experienced.

Table 4.5: Years of Service

Years	Frequency	Percentage
Less than 2	9	11.1
2 – 4	13	16.0
4 – 6	24	29.6
6 – 8	17	21.0
8 - 10	11	13.6
Above 10	7	8.6
Total	81	100

4.4 Information on T24 Core Banking Systems in the Organization

In this section, the respondents gave feedback as to what extent the risk factors affected the implementation process of the T24 core banking system in their organizations. The report discusses the extent that the risk factors affected T24 core banking system implementation process.

4.4.1 Extent the following risk factors affect T24 core banking system implementation in the company

The study sought to establish to what extent the risk factors affect T24 core banking system implementation in the company. The results obtained were analyzed using mean scores and standard deviation and presented on Table 4.1.

Table 4.6: Extent to which the Following Affect T24 core banking system implementation in the company

Risk Factors	Mean	Std. Deviation
Poor requirement gathering	3.93	1.138
Inadequate skill level	3.72	1.316
Budgetary constraints	3.41	1.273
Migration discrepancy	3.47	1.256
Average Score	**3.63**	**1.246**

Table 4.6 shows that the banking industry rated the following as very great extent: Poor requirement gathering with a mean score of (3.93), and inadequate skill level with a mean score of (3.72), while Migration discrepancy with a mean score of (3.47) and budgetary constraints with a mean score of (3.41) were all rated as great extent. This implies that all Companies rated these factors as key risk factors to a large extent (grand mean = 3.63) that greatly influence the success of T24 core banking system implementation process in the banking sector. The overall standard deviation of 1.246 indicates that there were no significant variations in the responses.

Table 4.7: Extent the following risk factors affect T24 core banking system implementation in the company

	Very great extent (%)	Great extent (%)	Moderate extent (%)	Little extent (%)	Not at all (%)
Poor requirement gathering	35.8	42	4.9	13.6	3.7
Inadequate skill level	37	28.4	11.1	16	7.4
Budgetary constraints	22.2	30.9	23.5	12.3	11.1
Migration discrepancy	24.7	30.9	18.5	18.5	7.4
Average Score	**29.93**	**33.05**	**14.5**	**15.1**	**7.40**

Table 4.7 shows the users' responses to the questions on extent to which the following risk factors affect T24 core banking system implementation in the company. Majority of the (42%) respondents agreed that poor requirement gathering affected the implementation process to a great extent, 37% said inadequate skill level also affected the implementation process to a very great extent. 30.9% said budgetary constraints affected the implementation process to a great extent. It was also noted that 30.9% of the respondents said migration discrepancy affected the implementation process to great extent. In general, on average 33.05% of respondents indicated that risk factors affected the implementation process to great extent, 29.93% to a very great extent, and 15.1% to a little extent while 14.5% and 7.40% of the respondents indicated that risk factors affected the implementation process to a moderate extent and not at all extent respectively.

4.5 Poor Requirement gathering

The report discussed the extent that the poor requirement gathering affects the implementation of the T24 core banking system. If the requirement gathering process is not well articulated from the onset, it would have a great impact on the quality of system implemented.

4.5.1 Extent to which Poor requirement gathering affected T24 core banking system implementation

From the findings, 42% of the respondents indicated that poor requirement gathering affected T24 core banking system implementation process in the company to a great extent, 35% of the respondents indicated that poor requirement gathering affected T24 core banking system implementation process in the company to a very great extent while 13.6%, 4.9% and 3.7% of the respondents indicated that poor requirement gathering affected T24 core banking system implementation process in the company to a little extent, moderate extent and Not at all respectively.

4.5.2 Extent to which the following affected T24 core banking system implementation
Table 4.8: Extent to which the Following Affect T24 core banking system implementation in the company

	Mean	Std. Deviation
Stakeholder involvement	4.84	0.369
Listing of Gaps between the required functionality and the new system	4.81	0.450
Adequate requirement gathering	4.70	0.459
Listing of Current Business process	4.70	0.585
Listing of proposed Business process	4.59	0.567
Average Score	**4.73**	**0.509**

From the findings, the respondents indicated that Stakeholder involvement and Listing of Gaps between the required functionality and the new system affected T24 core banking system implementation in the company to a very great extent as shown by a mean score of 4.84 and 4.81 respectively. The respondents also indicated that Adequate requirement gathering, Listing of Current Business process and Listing of proposed Business process affected system affected T24 core banking system implementation in the company affected to a great extent as shown by a mean score of 4.70, 4.70 and 4.59 respectively.

Table 4.9: Extent the following Poor requirement gathering factors affect T24 core banking system implementation in the company

	Very Important (%)	Important (%)	Not Sure (%)	Not Important (%)	Least Important (%)
Stakeholder involvement	84	16	0	0	0
Listing of Gaps between the required functionality and the new system	84	13.6	2.5	0	0
Adequate requirement gathering	70.4	29.6	0	0	0
Listing of Current Business process	74.7	21.5	2.5	1.3	0
Listing of proposed Business process	61.2	37.5	0	1.2	0
Average Score	**74.86**	**23.64**	**1**	**0.5**	**0.0**

Table 4.9 shows the users' responses to the questions on extent to which the following poor requirement gathering factors affect T24 core banking system implementation in the company. Majority of the (84%) respondents agreed that stakeholder involvement and listing of gaps between the required functionality and the new system were very important factors to consider during the implementation process. 70.4%, 74.7% and 61.2% of the respondents said adequate requirement gathering, listing of current business process and listing of proposed business process were very important factors to consider during the implementation process respectively. In general, on average 74.86% of respondents indicated that poor requirement gathering factors were very important factors to consider during T24 system implementation process, 23.64%, 1% and 0.5 of respondents indicated that poor requirement gathering factors were important, not sure and not important factors to consider during T24 system implementation process respectively.

4.6 Inadequate Skill Level
The report discusses the extent that inadequate skill level affects the implementation of the T24 core banking system.

4.6.1 Extent to which inadequate skill level affected T24 core banking system implementation

From the findings, 37% of the respondents indicated that inadequate skill level affected T24 core banking system implementation process in the company to a very great extent, 28.4% of the respondents indicated that inadequate skill level affected T24 core banking system implementation process in the company to a great extent while 16.0%, 11.1% and 7.4% of the respondents indicated that inadequate skill level affected T24 core banking system implementation process in the company to a little extent, moderate extent and Not at all extent respectively.

Table 4.10: Extent to which Inadequate Skill Level affected T24 core banking system implementation

	Frequency	**Percentage**
Very great extent	30	37.0
Great extent	23	28.4
Little Extent	13	16.0
Moderate Extent	9	11.1
Not at all	6	7.4
Total	**81**	**100**

4.6.2 Extent to which inadequate skill level affected T24 core banking system implementation

Table 4.11: Extent to which the Following Affect T24 core banking system implementation in the company

	Mean	Std. Deviation
To what extent does project team skill level influence core banking system implementation?	4.68	0.470
Extent to which team leadership and Management influence core banking system implementation	4.68	0.632
Extent to which experience in similar projects influence core banking system implementation	4.37	0.697
Extent to which team members Qualifications influence core banking system implementation	4.32	0.649
Extent to which trainings and certifications influence core banking system implementation	4.26	0.738
Extent to which attrition rate influence core banking system implementation	4.19	0.802
Average Score	**4.73**	**0.509**

From the findings, the respondents indicated that Stakeholder involvement and Listing of Gaps between the required functionality and the new system affected T24 core banking system implementation in the company to a very great extent as shown by a mean score of 4.84 and 4.81 respectively. The respondents also indicated that Adequate requirement gathering, Listing of Current Business process and Listing of proposed Business process affected system affected T24 core banking system implementation in the company affected to a great extent as shown by a mean score of 4.70, 4.70 and 4.59 respectively.

Table 4.12: Extent to which inadequate skill level affect T24 core banking system implementation in the company

	Very Important (%)	Important (%)	Not Sure (%)	Not Important (%)	Least Important (%)
Team leadership and Management	73.8	22.5	1.2	2.5	0
Experience in similar projects	46.9	45.7	4.9	2.5	0
Team members Qualifications	38.3	58	2.5	0	1.2
Trainings and certifications	39.5	50.6	6.2	3.7	0
Attrition rate	37.0	45.7	12.3	1.2	1.2
Average Score	**47.1%**	**44.5%**	**5.42**	**1.98**	**0.48**

Table 4.12 shows the users' responses to the questions on extent to which the following inadequate skill level factors affect T24 core banking system implementation in the company. Majority of the (73.8%) and 46.9% of the respondents agreed that team leadership and management as well as experience in similar projects were very important factors to consider during the implementation process. In addition, 58%, 50.6% and 45.7% of the respondents said team members qualifications, trainings and certifications and attrition rate were categorized as important factors to consider during the implementation process respectively. In general, on average 47.1% of respondents indicated that inadequate skill level factors were very important factors to consider during T24 system implementation process, 44.5%, 5.42%, 1.98 and 0.48% of respondents indicated that inadequate skill level factors were important, not sure, not important and least important factors to consider during T24 system implementation process respectively.

4.7 Budgetary Constraints

The report discusses the extent that budgetary constraints affect the implementation of the T24 core banking system.

4.7.1 Extent to which budgetary constraints affected T24 core banking system implementation

From the findings, 30.9% of the respondents indicated that budgetary constraints affected T24 core banking system implementation process in the company to a great extent, 23.5% of the respondents indicated that budgetary constraints affected T24 core banking system implementation process in the company to a very great extent while 22.2%, 12.3% and 11.1% of the respondents indicated that budgetary constraints affected T24 core banking system implementation process in the company to a little extent, moderate extent and Not at all extent respectively.

Table 4.13: Extent to which Budgetary constraints affected T24 core banking system implementation

	Frequency	Percentage
Great extent	25	30.9
Very great extent	19	23.5
Little Extent	18	22.2
Moderate Extent	10	12.3
Not at all	9	11.1
Total	**81**	**100**

From the findings, 30.9% of the respondents indicated that budgetary constraints affected T24 core banking system implementation process in the company to a great extent, 23.5% of the respondents indicated that budgetary constraints affected T24 core banking system implementation process in the company to a very great extent while 22.2%, 12.3% and 11.1% of the respondents indicated that budgetary constraints affected T24 core banking system implementation process in the company to a little extent, moderate extent and Not at all extent respectively.

4.7.2 Extent to which budgetary constraints affected T24 core banking system implementation

Table 4.14: Extent to which the Following Affect T24 core banking system implementation in the company

	Mean	Std. Deviation
Cost of implementation	4.46	0.593
Budget	4.36	0.577
Change of Scope	4.35	0.744
Maintenance and support costs.	3.94	0.913
Recurring expenditure such as Annual license fees	3.89	1.049
Average Score	**4.20**	**0.7752**

From the findings, the respondents indicated that Cost of implementation and budget affected T24 core banking system implementation in the company to a very great extent as shown by a mean score of 4.46 and 4.36 respectively. The respondents also indicated that Change of Scope, Maintenance and support costs and recurring expenditure such as Annual license fees affected T24 core banking system implementation in the company affected to a moderate extent as shown by a mean score of 4.35, 3.94 and 3.89 respectively.

Table 4.15: Extent to which budgetary constraints affect T24 core banking system implementation in the company

	Very great extent (%)	Great extent (%)	Moderate extent (%)	Little extent (%)	Not at all (%)
Cost of implementation	50.6	44.4	4.9	0	0
Budget	40.7	54.3	4.9	0	0
Change of Scope	49.4	37	12.3	1.2	0
Maintenance and support costs.	33.3	32.1	29.6	4.9	0
Recurring expenditure such as Annual license fees	37	24.7	30.9	4.9	2.5
Average Score	**42.2**	**38.5**	**16.52**	**2.20**	**0.50**

Table 4.15 shows the users response to the questions on extent to which budgetary constraints affect T24 core banking system implementation process in the company. The majority of (50.6%) of the respondents agreed that cost of implementation affected the implementation process to very great extent, 54.3% said budget affected the implementation process to a great extent while 49.4% said change of scope affected the implementation process to a very great extent. It was also noted that 33.3% and 37% of the respondents said maintenance and support costs and recurring expenditure such as annual license fees affected the implementation process to very great extent respectively. In general, on average 42.2% of respondents indicated that budgetary constraints affected the implementation process to a very great extent, 38.5% to a great extent, 16.52% to a moderate extent, 2.20% to a little extent and 0.5% to not at all extent respectively.

4.8 Migration discrepancy

The report discusses the extent that migration discrepancy affects the implementation of the T24 core banking system.

4.8.1 Extent to which Migration discrepancy affected T24 core banking system implementation

From the findings, 30.9% of the respondents indicated that migration discrepancy affected T24 core banking system implementation process in the company to a great extent, 24.7% of the respondents indicated that migration discrepancy affected T24 core banking system implementation process in the company to a very great extent while 18.5%, 18.5% and 7.4% of the respondents indicated that migration discrepancy affected T24 core banking system implementation process in the company to a little extent, moderate extent and Not at all extent respectively.

Table 4.16: Extent to which Migration discrepancy affected T24 core banking system implementation

	Frequency	Percentage
Great extent	25	30.9
Very great extent	20	24.7
Little Extent	15	18.5
Moderate Extent	15	18.5
Not at all	6	7.4
Total	**81**	**100**

4.8.2 Extent to which data migration discrepancy affect T24 core banking system implementation

Table 4.17: Extent to which the Following Affect T24 core banking system implementation in the company

	Mean	Std. Deviation
To what extent do Lack of data migration knowledge influence implementation T24 projects?	4.47	0.792
To what extent do consideration of Quality of source data influence implementation T24 projects?	4.41	0.667
To what extent do Failure to cleanse Data before mapping influence implementation T24 projects?	4.41	0.787
To what extent do Extraction and transformation of data from multiple legacy systems influence implementation T24 project	4.41	0.724
To what extent do consideration of Volume of data to be migrated influence implementation T24 projects?	4.21	0.817
Average Score	**4.382**	**0.7574**

From the findings, the respondents indicated that Lack of data migration knowledge on implementation of T24 projects influenced the migration process to a great extent as evidenced by a mean score of 4.47. Consideration of quality of source data, failure to cleanse data before mapping and extraction and transformation of data from multiple legacy systems had a mean score of 4.41. In addition, volume of data to be migrated had a mean score of 4.21 meaning it was the least among the factors that influenced the implementation process of T24 core banking system as far as data migration is concerned.

Table 4.18: Extent to which data migration discrepancies affect T24 core banking system implementation in the company

	Very great extent (%)	Great extent (%)	Moderate extent (%)	Little extent (%)	Not at all (%)
Lack of data migration Knowledge	63	23.5	11.1	2.5	0
Consideration of Quality of source data	50.6	39.5	9.9	0	0
Failure to cleanse Data before mapping	55.6	33.3	7.4	3.7	0
Extraction and transformation of data from multiple legacy systems	51.9	38.3	6.2	2.5	0
Volume of data to be migrated	43.2	37	17.3	2.5	0
Average Score	**52.86**	**34.32**	**10.38**	**2.24**	**0.00**

Table 4.18 shows the users response to the questions on extent to which data migration discrepancies affect T24 core banking system implementation process in the company. The majority of (63%) respondents agreed that lack of data migration knowledge affected the implementation process to very great extent, 50.6% said consideration of quality of source data also affected the implementation process to a very great extent while 55.6% said failure to cleanse data before mapping affected the implementation process to a very great extent. It was also noted that 51.9% and 43.2% of the respondents said extraction and transformation of data from multiple legacy systems and volume of data to be migrated affected the implementation process to very great extent respectively. In general, on average 52.86% of respondents indicated that data migration discrepancies affected the implementation process to very great extent, 34.32% to a great extent, 10.38% to a moderate extent and 2.24% to a little extent respectively.

4.9 Summary of Findings

The section below presents a discussion of each of the study variables and its findings in terms of effect on the implementation process of the T24 core banking system in the organization. The final result of this study showed that vast majority rated the presented risk factors as having affected T24 core banking implementation process to a great extent. In summary, poor requirement gathering was rated with a mean score of (3.93), and inadequate skill level rated with a mean score of (3.72), while Migration discrepancy with a mean score of (3.47) and budgetary constraints with a mean score of (3.41). This implies that all Companies rated these factors as key risk factors to a large extent (grand mean = 3.63) that greatly influence the success of T24 core banking system implementation process in the banking sector. The overall standard deviation of 1.246 indicates that there were no significant variations in the responses.

4.9.1 Poor Requirement gathering

The study on poor requirement gathering focused on a number of factors related to requirement gathering. These factors included stakeholder involvement, listing of gaps between the required functionality and the new system, adequate requirement gathering, listing of current business process and listing of proposed business process. In general, on average 74.86% of respondents indicated that poor requirement gathering factors were very important factors to consider during T24 system implementation process, 23.64%, 1% and 0.5% of respondents indicated that poor requirement gathering factors were important, not sure and not important factors to consider during T24 system implementation process respectively.

According to a study done by Kudav & Megha (2013), insufficient information collected during the requirement gathering phase may result to unsuccessful implementation of T24 core banking system project. Experience shows that there is a high failure rate of core banking system implementation. It is estimated that 25% of core banking system implementations fail without any results while 50% do not achieve the intended objectives (where cost and implementation time double). Some of the reasons for such failures are insufficient information collected during the requirement gathering phase, the banks don't have clear objective defined, and scope change in the midway of a project. Only 25% of the implementations can be considered successful (Kudav & Megha, 2013).

The study also indicated that majority of the (84%) respondents agreed that stakeholder involvement and listing of gaps between the required functionality and the new system were very important factors to consider during the implementation process. 70.4%, 74.7% and 61.2% of the respondents said adequate requirement gathering, listing of current business process and listing of proposed business process were very important factors to consider during the implementation process respectively. From the findings, it was noted that for the T24 core banking system implementation process to be a success, it's paramount to obtain a good level of stakeholder involvement. Key stakeholders would include the support from senior managers in the organization, vendors, business owners, as well as the technical team members. On average, all the requirement gathering related factors as highlighted in the study scored more than 60% in responses meaning that requirement gathering is a key risk factor to consider during system implementation. If the factor is poorly managed it would have serious adverse effects on the project success including cost overruns, scope creep, unmet functionalities as well as user acceptance related issues.

4.9.2 Inadequate Skill Level

The study on inadequate skill level focused on a number of factors related to project's team skill level. These factors included team leadership and management, experience in similar projects, team member's qualifications, trainings and certifications and attrition rate. The report also discussed the extent to which inadequate skill level affected the implementation process of the T24 core banking system in the company.

From the study, it was observed that, majority of the (73.8%) and 46.9% of the respondents agreed that team leadership and management as well as experience in similar projects were very important factors to consider during the implementation process. In addition, 58%, 50.6% and 45.7% of the respondents said team members qualifications, trainings and certifications and attrition rate were categorized as important factors to consider during the implementation process respectively. In general, on average 47.1% of respondents indicated that inadequate skill level factors were very important factors to consider during T24 system implementation process, 44.5%, 5.42%, 1.98 and 0.48% of respondents indicated that inadequate skill level factors were important, not sure, not

important and least important factors to consider during T24 system implementation process respectively.

According to a study conducted by Rishi (2013), he stated that lack of available project managers has been an ongoing challenge for the implementing organization. Most organizations have low levels of IT project management experience. An organization must retain control over the project management rather than outsourcing this function. Strategic workforce management is necessary to ensure that an organization has the human resources capable of developing and delivering the services required. Selecting individuals based on their competencies, and not where they previously worked (such as when groups are being consolidated), increases the success of major change initiatives. Lack of skill, experience and/or resources are seen as recurring risks to the success of IT projects. Core banking transformation projects require a lot of resources and significant investments over a period of time. It is therefore necessary to adopt an appropriate implementation strategy that takes into account the available financial and human resources (Rishi, 2013).

From the study, the author noted that team leadership and management was a very important element to consider during the implementation process. There are many elements that create and are essential to be an effective leader that has the power to motivate an implementation team and drive success. There is often a balancing act that the team leader must manage between being a leader and a member while ensuring the goal is clear and obtainable. The foundation of a highly motivated and successful implementation team is the member's understanding and relevance of their goal. The leader must be involved and be a member of the team to effectively influence the member's productivity and function in the grand scheme of things.

It was also observed that 46.9% of the respondents agreed that experience in similar projects were very important factors to consider during the implementation process. This means that, team members with prior knowledge of implementing T24 project increases the chances of the implementation process to succeed. Such prior experience would be vital as the team is likely to know how to navigate some related projects risks, avoid or minimize on them as well as steer the team in the right implementation process with a lot of ease. Additionally, from the results, trainings

and certifications and attrition rate were did not impact the T24 implementation process to a great extent as evidenced by the low rates as indicated by the respondents. This means their effects on the T24 implementation process were insignificant.

4.9.3 Budgetary Constraints

The report discussed the extent that budgetary constraints affect the implementation of the T24 core banking system in the organization. From the results, 30.9% of the respondents indicated that budgetary constraints affected T24 core banking system implementation process in the company to a great extent, 23.5% of the respondents indicated that budgetary constraints affected T24 core banking system implementation process in the company to a very great extent while 22.2%, 12.3% and 11.1% of the respondents indicated that budgetary constraints affected T24 core banking system implementation process in the company to a little extent, moderate extent and Not at all extent respectively.

The study on budgetary constraints focused on a number of factors related to project's budget. These factors included cost of implementation and budget affected T24 core banking system implementation in the company to a very great extent as shown by a mean score of 4.46 and 4.36 respectively. The respondents also indicated that Change of Scope, Maintenance and support costs and recurring expenditure such as Annual license fees affected T24 core banking system implementation in the company to a moderate extent as shown by a mean score of 4.35, 3.94 and 3.89 respectively.

The author also sought to establish the extent to which budgetary constraints affect T24 core banking system implementation process in the company. The majority of (50.6%) of the respondents agreed that cost of implementation affected the implementation process to very great extent, 54.3% said budget affected the implementation process to a great extent while 49.4% said change of scope affected the implementation process to a very great extent. It was also noted that 33.3% and 37% of the respondents said maintenance and support costs and recurring expenditure such as annual license fees affected the implementation process to very great extent respectively. In general, on average 42.2% of respondents indicated that budgetary constraints affected the

implementation process to a very great extent, 38.5% to a great extent, 16.52% to a moderate extent, 2.20% to a little extent and 0.5% to not at all extent respectively.

As highlighted in the literature review section, core banking implementations are costly and are made up of various upfront charges for software, hardware and vendor implementation services as well as maintenance or recurring charges. Services from the core banking system vendor, like customization and implementation costs, can often exceed the initial license fee. According to Rishi (2013) implementing core banking systems requires enormous changes to supporting structures and systems, hardware, interfaces and network components. In addition, there are training and change management costs associated with re-skilling and re-deployment of human resources on the new system.

To minimize on the budget constraints risk, it is extremely important that the implementing bank institute a dedicated financial control function for the transformation program that tracks capital and operational expenditure on a weekly basis, as well as ensures that payments are made on time (in order not to demotivate vendors), as well as payments are made only when the deliverables are up to the mark and delivered on time. Cost escalations should also be properly risk-managed through the bid negotiation and contractual stages itself. Since core banking implementation projects usually have long project implementation cycles sometimes spanning over years, and therefore there are inherent risks of slippage and cost overruns. It is also highly advisable that strong project governance structures and risk-management practices should be adopted and therefore be an inherent part of project management (Rishi, 2013).

4.9.4 Migration discrepancy
The study on migration discrepancy focused on a number of factors related to project's migration process. These factors included lack of data migration knowledge on implementation of T24 projects, consideration of quality of source data, failure to cleanse data before mapping and extraction and transformation of data from multiple legacy systems as well as volume of data to be migrated.

From the results, it was observed that majority of (63%) respondents agreed that lack of data migration knowledge affected the implementation process to very great extent, 50.6% said consideration of quality of source data also affected the implementation process to a very great

extent while 55.6% said failure to cleanse data before mapping affected the implementation process to a very great extent. It was also noted that 51.9% and 43.2% of the respondents said extraction and transformation of data from multiple legacy systems and volume of data to be migrated affected the implementation process to very great extent respectively. In general, on average 52.86% of respondents indicated that data migration discrepancies affected the implementation process to very great extent, 34.32% to a great extent, 10.38% to a moderate extent and 2.24% to a little extent respectively.

CHAPTER FIVE

SUMMARY OF THE STUDY, CONCLUSIONS AND

RECOMMENDATIONS

5.1 Introduction

This chapter presented the discussion of key data findings, conclusion drawn from the findings highlighted and recommendation made there-to. The conclusions and recommendations drawn were focused on addressing the objective of the study.

5.2 Summary of the Study

The study sought to establish the risk factors that influence implementation of T24 core banking systems by commercial banks in Kenya. From the data analysis section of this report, it was observed that the banking industry rated the following as very great extent: Poor requirement gathering with a mean score of (3.93), and inadequate skill level with a mean score of (3.72), while Migration discrepancy with a mean score of (3.47) and budgetary constraints with a mean score of (3.41) were all rated as great extent. This implies that all Companies rated these factors as key risk factors to a large extent (grand mean = 3.63) that greatly influence the success of T24 core banking system implementation process in the banking sector.

The report also discussed the extent that the poor requirement gathering affects the implementation of the T24 core banking system. If the requirement gathering process is not well articulated from the onset, it would have a great impact on the quality of system implemented. From the findings, 42% of the respondents indicated that poor requirement gathering affected T24 core banking system implementation process in the company to a great extent, 35% of the respondents indicated that poor requirement gathering affected T24 core banking system implementation process in the company to a very great extent while 13.6%, 4.9% and 3.7% of the respondents indicated that poor requirement gathering affected T24 core banking system implementation process in the company to a little extent, moderate extent and Not at all respectively. Generally, although majority of the respondents did not mark poor requirement gathering as a key risk, their general observation is that the whole of the implementation process would have improved if all requirements were well articulated from the onset.

From the report, it was also observed that 37% of the respondents indicated that inadequate skill level affected T24 core banking system implementation process in the company to a very great extent, 28.4% of the respondents to a great extent, while 16.0%, 11.1% and 7.4% of the respondents to a little extent, moderate extent and Not at all extent respectively.

On matters budgetary constraints, the risk factor affected the implementation of the T24 core banking system in the company as follows. The findings showed that 30.9% of the respondents indicated that budgetary constraints affected T24 core banking system implementation process in the company to a great extent, 23.5% of the respondents to a very great extent while 22.2%, 12.3% and 11.1% of the respondents indicated that budgetary constraints affected T24 core banking system implementation process in the company to a little extent, moderate extent and Not at all extent respectively. In general, the team seem to highlight that budgetary constraints was not a major risk factor during the T24 core banking implementation process. This can be deduced from the low percentage scored by the respondents.

Finally, the findings showed that 30.9% of the respondents indicated that migration discrepancy affected T24 core banking system implementation process in the company to a great extent, 24.7% of the respondents indicated that migration discrepancy affected T24 core banking system implementation process in the company to a very great extent while 18.5%, 18.5% and 7.4% of the respondents indicated that migration discrepancy affected T24 core banking system implementation process in the company to a little extent, moderate extent and Not at all extent respectively.

5.2.1 Poor Requirement gathering
Requirements gathering for systems that need to be integrated with the T24 Core banking system present numerous challenges in the implementation process. Typically, during the preparation of the contract/ SOW neither the bank nor the implementing vendor does a detailed study of the existing peripheral systems of the bank that are already integrated and being used. All these interfaces end up being discovered as the implementation progresses, and typically this requires both technical and functional knowledge to conduct a thorough requirement analysis. User Acceptance Test (UAT) cases are mandatory at this stage, as they will set the parameters for

success or failure of the new system and will also allow the vendor to complete unit testing on their own (Kannan, 2016). Insufficient information collected during the requirement gathering phase may result to unsuccessful implementation of T24 core banking system project.

5.2.2 Inadequate Skill Level
The lack of available project managers has been an ongoing challenge for the implementing organization. Most organizations have low levels of IT project management experience. Strategic workforce management is necessary to ensure that an organization has the human resources capable of developing and delivering the services required. Lack of skill, experience and/or resources are seen as recurring risks to the success of IT projects. Core banking transformation projects require a lot of resources and significant investments over a period of time. It is therefore necessary to adopt an appropriate implementation strategy that takes into account the available financial and human resources (Rishi, 2013).

5.2.3 Budgetary Constraints
Implementing core banking systems requires enormous changes to supporting structures and systems, hardware, interfaces and network components. In addition, there are training and change management costs associated with re-skilling and re-deployment of human resources on the new system, (Rishi, 2013). Programs such as these have a tendency to quickly escalate in terms of budgeted costs. Since core banking implementation projects usually have long project implementation cycles sometimes spanning over years, and therefore there are inherent risks of slippage and cost overruns.

5.2.4 Migration discrepancy
Transforming core systems is a top priority for many retail banks. But with core banking transformation comes a huge data migration exercise, involving millions of records, in a host of different formats, potentially from scores of sources. A crucial element of this transformation is the movement of data from the legacy system to the target system. Data migration exercises involve records from different sources and in different formats (Rajesh, 2016). The data migration process bears significant risk if not carried out effectively. Indeed, poor data quality can hinder the adoption of the new system.

5.3 Conclusions

The researcher concluded that poor requirement gathering, budgetary constraints, team skill level and migration discrepancy risk factors can influence the success of a T24 core banking implementation process. Depending on how well such risks are managed by the implementing organization, such risks greatly influence the quality of the end product (the delivered system).

The researcher observed that, as much as the core banking implementation budget is determined early even before the project begins, cost escalations should be properly risk-managed through the bid negotiation and contractual stages itself. Since core banking implementation projects usually have long project implementation cycles sometimes spanning over years, and therefore there are inherent risks of slippage and cost overruns. Strong project governance structures and risk-management practices should therefore be an inherent part of project management. The researcher also concludes that data migration knowledge on implementation of T24 projects, consideration of quality of source data, data clean up before mapping and extraction and transformation of data from multiple legacy systems as well as consideration of volume of data to be migrated are fundamental processes to ensure the highest level of accuracy possible during data migration.

The researcher also concludes that during the selection of systems, it is critical to ensure that user requirements are obtained to ensure that the system purchased meets the strategic goals of the organization and will fulfill the needs of the business / organization. On matters team skill level, an organization must retain control over the project management rather than outsourcing this function. Strategic workforce management is necessary to ensure that an organization has the right human resources capable of developing and delivering the required core banking system. Core banking transformation projects require a lot of highly skilled resources and significant investments over a period of time. It is therefore necessary to adopt an appropriate implementation strategy that takes into account the available financial and human resources.

5.4 Recommendations

The researcher recommends that:

Financial institutions should develop a run book, which is a set of defined procedures developed by the IT professionals for maintaining the everyday routine, as well as the exceptional operations of the system especially during system upgrade or implementation. During T24 system implementation, vendors have a very crucial role to play, the researcher recommends that critical vendors should be present locally especially when their services are greatly needed.

Involvement of business users (champions) is critical especially during the requirements gathering stage. Such users who are knowledgeable in the disciplines within the system domain should be identified early enough and should assist in the development by helping to determine the needs i.e. giving their requirements for the system, refine the requirements, and inspect, test and accept the delivered system.

The implementation team should be maintained intact as much as possible. Senior management should strive to ensure attrition rate is maintained at bare minimum. Team members who exit in the course of project implementation usually course immeasurable inconveniences to the project delivery timelines.

Finally, a risk register should be maintained and should be used to identify key risks that are likely to affect the projects implementation process.

5.5 Implications for further studies

The researcher suggests the following areas for further studies;

i.   Effectiveness of Core banking Systems as deployed by commercial banks in Kenya

ii.   An assessment of other risk factors that influence development and implementation of core banking system projects by commercial banks in Kenya

iii.   A study to establish possibility of sharing a core banking system by small and medium financial institutions in Kenya.

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APPENDICES

Appendix I: Introduction Letter

John Wambugu Mugo,

P.O. Box 64942 - 00620,

Nairobi

April 23rd, 2018

Dear Sir/Madam,

RE: REQUEST FOR PARTICIPATION IN A RESEARCH STUDY

I am a final Masters of Arts degree student at the University of Nairobi. My area of specialization is project planning and management. I am currently undertaking a research on "**Risk Factors Influencing Implementation of Temenos T24 Core Banking System projects in Commercial Banks in Kenya: A Case Study of NIC Bank Kenya PLC**".

I would be grateful if you could spare some time from your busy schedule and complete the enclosed questionnaire. All the information provided will be used purely for academic purposes only and will be treated with utmost confidentiality.

Thank you for your cooperation.

Yours faithfully,

John Wambugu Mugo

L50/73505/2014

Appendix II: Research Questionnaire

This research is being undertaken to collect quantitative data to establish the risk factors that affect the implementation of T24 core banking application system in commercial banks. The identified organizations in which the study is being conducted are Commercial banks in Kenya that have previously implemented a new core banking system (T24) to improve on the efficiency and effectiveness of service delivery.

This research is performed independently and the gathered data will be treated confidentially and used to draw broad conclusions only. Your support by filing in this questionnaire objectively will be highly appreciated.

Section One: Demographic Information

(Please tick (√) or fill in where appropriate. This section requires you to give general information.).

1. Department: ………………………………….   Branch: ………………………………..

2. Gender: Male [ ]   Female   [ ]

3. Age (in years):

    18 – 24   [ ]   25 – 30   [ ]

    31 – 36   [ ]   37 – 42   [ ]

    42 – 48   [ ]   Above 48   [ ]

4. Highest level of education

    a.   High/Secondary School   [ ]

    b.   College   [ ]

    c.   Graduate   [ ]

    d.   Post Graduate   [ ]

5.   How long have you worked in the Banking Industry?

     Less than 2 years   [ ]   2 – 4 years   [ ]

     4 – 6 years   [ ]   6 – 8 years   [ ]

     8   – 10 years   [ ]   Above 10 years [ ]

6   Core banking Application System you are most familiar with and which you use:

     a   T24   [ ]

     b   Any other core banking system _____

Section Two: Information on T24 Core Banking Systems in the Organization

RISK FACTORS

7. **To what extent did the following risk factors on T24 implementation influence the success of core banking implementation process?**

Please mark with an "X"						
SATISFACTION WITH CURRENT PERFORMANCE	**CHARACTE RISTICS**	**IMPORTANCE OF THE CHARACTERISTIC**				
		Not at all	Little Extent	Moderate extent	Great Extent	Very great extent
	RISK FACTORS					
To what extent do the following risk factors on T24 implementation influence success of core banking implementation?	Poor requirement gathering					
	Inadequate skill level					
	Budgetary constraints					
	Migration discrepancy					

8. To what extent does requirement gathering process during core banking systems implementation phase influence the T24 implementation process?

Very great extent [ ]   Great extent   [ ]

Moderate extent [ ]   Little extent   [ ]

Not at all   [ ]

9. To what extent do the following requirement gathering factors on T24 implementation influence the successful implementation of core banking system in your company?

CHARACTERISTICS	IMPORTANCE OF THE CHARACTERISTIC				
Requirement gathering factors					
	Least important	Not important	Not sure	Important	Very important
Listing of Current Business process					
Listing of proposed Business process					
Listing of Gaps between the required functionality and the new system					
Adequate requirement gathering					
Stakeholder involvement					

PROJECT TEAM SKILL LEVEL

10. To what extent does project team skill level influence core banking system implementation?

         Very great extent   [ ] Great extent   [ ]

         Moderate extent   [ ] Little extent   [ ]

         Not at all   [ ]

11. To what extent do the following factors on project team skill level influence core banking system implementation

Please mark with an "X"						
SATISFACTION WITH CURRENT PERFORMANCE	**CHARACTE RISTICS**	**IMPORTANCE OF THE CHARACTERISTIC**				
		Least important	Not important	Not sure	Important	Very important
	Team Skill Level					
To what extent do the following project team skill level on T24 implementation influence core banking implementation?	Team members Qualifications					
	Trainings and certifications					
	Experience in similar projects					
	Team leadership and Management					
	Attrition rate / Turnover rate					

BUDGETARY CONTSTRAINTS

12. To what extent do budgetary constraints on Core banking systems implementation influence your implementation process?

Very great extent   [ ] Great extent   [ ]

Moderate extent   [ ] Little extent   [ ]

Not at all   [ ]

13. To what extent do the following Project's budget related factors influence core banking implementation process?

Please mark with an "X"						
SATISFACTION WITH CURRENT PERFORMANCE	**CHARACTERISTICS**	**IMPORTANCE OF THE CHARACTERISTIC**				
		Not at all	Little Extent	Moderate extent	Great Extent	Very great extent
	Budgetary Constraints factors					
To what extent do the following budgetary constraints factors influence implementation T24 projects?	Cost of implementation					
	Budget					
	Change of scope					
	Maintenance and support costs.					
	Recurring expenditure such as Annual license fees					

DATA MIGRATION DISCREPANCY

14. To what extent did data migration discrepancy on Core banking systems implementation influence your implementation process?

Very great extent   [   ]   Great extent   [   ]

Moderate extent   [   ]   Little extent   [   ]

Not at all   [   ]

15. To what extent do the following Project's data migration discrepancy related factors influence core banking implementation process?

Please mark with an "X"						
SATISFACTION WITH CURRENT PERFORMANCE	**CHARACTERISTICS**	**IMPORTANCE OF THE CHARACTERISTIC**				
		Not at all	Little Extent	Moderate extent	Great Extent	Very great extent
	Data Migration factors					
To what extent do consideration of the following data migration factors influence implementation T24 projects?	Volume of data to be migrated					
	Quality of source data					
	Failure to cleanse Data before mapping					
	Lack of data migration knowledge					
	Extraction and transformation of data from multiple legacy systems					

16. On a scale of 1 – 5 (where 5 is very important) how would you rate the importance of T24 core banking System to the business process in your department / organization?

    1[ ]   2 [ ]   3 [ ]   4 [ ]   5 [ ]

17. On a scale of 1 – 5 (where 5 is very important) how would you rate the overall implementation process of the T24 core banking system in your organization?

    a [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ]

Thank you for taking your time to fill in the questionnaire.