

**EFFECT OF CHANGE MANAGEMENT ON ADOPTION OF ICT SYSTEMS ON
PARASTATALS IN KENYA: A CASE OF THE NATIONAL HOSPITAL INSURANCE
FUND (NHIF)**

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DECLARATION

This research project is my original work and has never been submitted for award of Degree or any other award, at any university prior to this declaration.

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This Research Project has been submitted for examination with my approval as the University supervisor.

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DEDICATION

This project is dedicated to my entire family for their support and motivation throughout the period of study. God bless you.

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I would like to thank God for wisdom, good health and peace of mind throughout the entire study period. Without His strength, insight and provisions this project would not have been possible. My sincere gratitude to my family for patience, understanding and support. I truly appreciate the guidance and intellectual contributions from my supervisor, Dr. David Mbogori.

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ABSTRACT

Organizations exist and operate in dynamic environments. To survive and remain competitive in the evolving and highly competitive environment, organizations need effective change management strategies to develop the capacity to adapt to the changes. The study was aimed to determine the effect of change management on the adoption of ICT systems in parastatals in Kenya. The study project was based on three objectives: to identify the effect of employee training on the adoption of ICT systems, to find out how change in organizational structure affects the adoption of ICT systems, and to determine the effect of communication on the adoption of ICT systems. The study uses a descriptive research design. The target population was 300 employees from the NHIF headquarters. Stratified and simple random sampling techniques were used to select a sample size of 90 participants. Primary data was collected using a structured questionnaire. Descriptive statistics was used to analyze quantitative data, including the means, frequencies, and percentages. SPSS was used in data analysis. The data was tabulated and presented using tables and figures. The research findings indicate that employee training and communication both had a positive and significant effect ($\beta = 0.274, t = 2.564, p < .05$) and ($\beta = 0.281, t = 2.441, p < .05$) respectively on the adoption of ICT system in parastatals in Kenya. Change of organizational structure however was found to have a non-statistically significant effect ($\beta = 0.01, t = .091, p > .05$) in determining adoption of ICT system in parastatals in Kenya. All variables or factors considered in this study jointly and significantly ($F = 5.694, p < 0.001$) explained adoption of ICT system in parastatals in Kenya. Based on the findings, the study recommends that the NHIF should ensure that the employee training provided internally and externally is appropriate and adequate as it was revealed to be a critical factor for successful adoption of ICT. Secondly, the study suggests to management to define the nature and impact of the change at NHIF to enhance effective communication. The communication of change at NHIF should be comprehensive as well as open while being practical as much as possible. The NHIF should utilize all channels of communication to enhance effective communication by providing information on the impact of the change. This will inform employees about the change as well as prepare them in advance, consequently, making the adoption of change more efficient. To the Academia, the study has added new knowledge on effect of change management on the adoption of ICT literature.

DEFINITION OF TERMS

Adoption of ICT: The integration of ICT in the organization's system

Change management: The continuous renewal of the organization's direction, capabilities and structure with the aim of serving the continuously changing internal and external needs of the stakeholders.

General staff: Staff members involved in the daily business operations, and have no management or supervisory roles

Mid-management: Staff that play a supervisory role

Organizational structure: The organizational arrangement of authority, tasks, and line of communication in an organization

Parastatal: A state-owned enterprise

Top management: Staff members involved in decision-making and business management

ABBREVIATIONS AND ACRONYMS

ANOVA:	Analysis of Variance
COMM:	Communication
COS:	Change of organizational structure
E-CLAIM:	Electronic Claim
ET:	Employee Training
HR:	Human Resource
ICT:	Information and Communication Technologies
MBA:	Master of Business Administration
NHIF:	National Hospital Insurance Fund
SMEs:	Small and Medium Enterprises
SPSS:	Statistical Package for Social Sciences

CHAPTER ONE

INTRODUCTION

1.1 Introduction

This chapter presents the background of the study, statement of the problem, the purpose of the study, research hypotheses, significance, the scope, and delimitations of the study. Also, limitations and assumptions of the study as well as theoretical and conceptual frameworks are presented.

1.2 Background of the Study

Organizations are continually interacting with the environment within their operations. To survive, organizations must adapt to changes that occur in the environment. These changes often affect the way organizations operate. To ensure success, it is critical that organizations align their operations to the changing environment. Change is inevitable for both small and large organization; whether they are public, private or voluntary. Studies show that some strategic changes sprout from organizational desires to exploit emerging opportunities and to handle the new threats in their business or market (Battilana, J., Gilmartin, M., Sengul, M., Pache, A. C., & Alexander, J. A. 2010). Often organizations are faced with challenges that require them to change. Government organizations are prone to changes because they must respond to new leadership, development scenarios, restructuring process, and changing priorities among others.

Change is an essential part of an organization's strategic management process. Organizations are experiencing more pressure than ever primarily due to the increasing competition on a global scale, economic integration, microeconomic conditions, informed customers and advances in the ICT developments (Konzelmann & Wilkinson, 2017; Kitchens, Dobolyi, Li & Abbasi, 2018).

Organizations need to respond to changes in the internal and external environment. Also, employees are more effective if they can cope with the changing business environment.

To recognize the need to embrace change and lead an organization through the process of change is one of the most challenging moments in any leadership. Many studies have investigated the impact of Information and Communication Technologies (ICT) on general business performance and found that advances in ICT have significantly impacted the industrial process (Synnes & Welo, 2016; Byrne & Corrado, 2017). ICT has changed the way organizations operate within their environment. Some organizations have a conservative approach towards new technology, which makes them miss the opportunity of using the improved technologies. According to Byrne and Corrado (2017) ICT adoption and change management are essential for the organization to achieve high productivity.

There is a close relationship between change management and ICT adoption. This is because ICT has a direct impact on an organization's performance. Effective utilization of ICT would require a horizontal organizational structure that has complete responsibility and coordination of employees at the workplace (Ostroff & Smith, 1992; Spanos, Prastacos & Poulymenakou, 2002). Reorganization of the organizational structure is essential so that all the aspects within the organization are given adequate attention. Since organizations are going through a process of rapid modernization, it is imperative for an organization to consider emphasizing on an improved production process and adopt flexibility that can address the various market needs (Duclos, Vokurka & Lummus, 2003; Synnes & Welo, 2016). To accomplish this, ICT is combined with various factors such as organizational structure change and marketing strategies.

In the modern business environment, organizations are required to collect more data using ICT tools, which could have an impact on decision-making. However, there is also a need to understand

how ICT investment and using innovation can translate into increased productivity and competitiveness. Studies show that the adoption of ICT in other sectors has a significant impact on organization performance (Byrne & Corrado, 2017; Gërguri-Rashiti, Ramadani, Abazi-Alili, Dana, & Ratten, 2017). ICT has been cited as a significant contributor to the profitability, productivity, and growth of firms in any sector (Gërguri-Rashiti, Ramadani et al., 2017). Additionally, ICT is vital in reducing the operation cost and increasing the organization's efficiency and revenue.

Traditionally, most public organizations use a paper file approach in managing their operations. This has proved to be counter effective regarding accountability and effective service delivery. Globally, there has been a paradigm shift where many states and governments have enacted laws and policies that compel public organizations to adopt ICT systems in their operations (Ndegwa, Kiriri & Achoki, 2016). There is a changing landscape in government operations where it has increased its transactions with private partners and citizens within the local levels. To maximize this collaboration, a robust mechanism had to be set in place, and the most effective tool was ICT systems. Therefore, this paper is focused on the effect that change management has on the adoption of ICT system in government organizations with a focus on the National Hospital Insurance Fund (NHIF).

1.2.1 Change Management

According to Moran and Brightman (2001), change management refers to the continuous renewal of the organization's direction, capabilities and structure with the aim of serving the continuously changing internal and external needs of the stakeholders. Studies indicate that change is present in any organization's life; both in its operation and the need for managerial strategies and skills. Therefore, for many organizations, change is a constant phenomenon that must be

addressed to ensure that the organization survives. Organizational structure change can be a proactive or a reactive event. If companies are changing to avoid future threats or to take advantage of future opportunities, then their change is proactive. When the occurrence of threats and opportunities causes a change in an organization, then it is a reactive change.

Change management is essential when there is change-taking place within the organization's operations environment. Change can be transformational or incremental. Incremental changes occur when there are minor changes in the organization process, procedures, structure or technology (Nyongesa, Sewe & Nganga, 2012). Transformational change is radical and occurs when there is a change in structure and programs that guide the organization. In this regard, change management can be planned or unplanned transition from one state to another either emotionally or physically.

Change particularly in technology and information systems have a significant impact on the organization's operations. Change can result in an external environment that is unpredictable, dynamic, often devastating and demanding to organizations especially those that are poorly prepared to respond (Kimaku, 2010). The limitations to change management are often linked to the perception of the managers regarding the change (Kavanagh & Ashkanasy, 2006). Therefore, managers are change agents while employees are change recipients who implement the change. However, change may not be easy because recipients can have obstacles and barriers that prevent the change process.

1.2.2 Brief Overview of National Hospital Insurance Fund

The National Hospital Insurance Fund (NHIF) is a parastatal created by the government of Kenya in 1966. The fund was created under the Act of Parliament, but the Act has been amended severally with the changing needs in the healthcare sector. The NHIF is governed by Act No. 9 of

1998. The NHIF has an autonomous network in all the 61 branches around the country, and 32 satellite offices. Each branch is independently capable of providing all the services offered by the NHIF. The NHIF registers all the eligible members around the country.

In 2013, the NHIF, through the financial support of the International Finance Corporation (IFC), and technical support from PharmAccess foundation, introduced the Safe Care quality improvement system. The objective of this system was to support the healthcare provider to uphold basic health standards in the resource-restricted setting (SafeCare, n.d.). The system aimed to help the NHIF to go through a stepwise structured improvement program to ensure the delivery of safe and quality care to its members (Barasa, Rogo, Mwaura & Chuma, 2018).

The NHIF has faced many challenges in its technological changes including, political disruptions, corruption and competition. However, it successfully managed to invest in and implement ICT systems such as Mpesa, point of sale systems, swipe cards among others, with the aim of improving efficiency and effectiveness (Barasa, Rogo, Mwaura & Chuma, 2018). These systems have made it convenient for registered members to make payments and have also improved efficiency by reducing paperwork. The NHIF uses partnerships to implement large scale changes in the system.

1.3 Statement of the Problem

Organizations are often faced with challenges that put them under intense pressure to change. Public organizations must regularly undergo the process of change in response to new policies or change of government. Change in an organization can be either operational or strategic. Change can be detrimental if the outcome harms the organization (Kavanagh & Ashkanasy, (2006).

Recently, the NHIF introduced ICT systems with the purpose of improving efficiency and customer experience in the organization. The ICT systems included the Biometric registration and E-claim processing. The biometric registration was supposed to reduce the impersonation of persons to obtain settlements. The E-claim processing system aimed at enabling the NHIF to scrutinize claims for payments made by the hospitals because of increased fraud in the manual processing. The implementation of these systems was initiated without changing the NHIF structure to align with the technological changes being adopted (Barasa, Rogo, Mwaura & Chuma, 2018). Consequently, there was resistance from the line managers and staff who were not ready for the new systems because of the workload and other operational challenges that accompanied the change. There are those who argued that the manual system was faster and more efficient compared to the introduced system. However, resistance was linked to reduced rampant corruption witnessed in most parastatals. The resistance to change can be attributed to poor change management prior to the introduction of ICT. In 2015, a new management team was introduced, which revived the ICT systems that had stalled (NHIF, 2018).

Moran and Brightman (2011), state that change requires the realignment of perceptions, capacities, and methodologies with the aim of serving the regularly changing internal and external environment. Change management is a field that has increasingly attracted numerous researches both locally and internationally. Burnes (2004) and Unal & Tecim (2018) studied strategic change management and found that there is a link between the agents of change and the recipients for the effective implementation of change. These studies explain the resistance in implementing the Biometric registration and E-claim processing. There was no realignment of the internal structure.

Many researchers have investigated change management in organizations, but few have considered parastatals. There is a paucity of research investigating the effect of change

management with regard to the implementation of ICT in the public sector (Barasa, Rogo, Mwaura & Chuma, 2018; Sallehudin, Aman, Razak, Ismail, Bakar, Fadzil & Baker, 2020). Given the knowledge gap in this sector, this study aims to provide knowledge into the effect of change management about the implementation of ICT in the public sector. The study examines the effect that change management practices have on the adoption of ICT in the parastatals with a focus on NHIF.

1.4 Purpose of the Study

The objective of the research was to determine the effect of change management on the adoption of ICT in parastatals in Kenya: A Case of NHIF.

1.5 Objectives of the Study

- I. To establish the effect of employee training on adoption of ICT systems in parastatals in Kenya.
- II. To determine the effect of communication on adoption of ICT systems in parastatals in Kenya.
- III. To assess how change of organizational structure affects adoption of ICT systems in parastatals in Kenya.

1.6 Research Hypotheses

H₀₁: Employee training does not have significant influence on adoption of ICT systems in parastatals in Kenya.

H₀₂: Communication does not have significant influence on adoption of ICT systems in parastatals in Kenya.

H₀₃: Change of organizational structure has no significant effect on adoption of ICT systems in parastatals in Kenya.

1.7 Significance of the Study

This study is significant to different stakeholders who have a vested interest in the outcome of the research. The stakeholders include the government, NHIF management and staff, and future researchers. Each stakeholder has different interests:

The findings of this study are useful to the management and government because they provide information that can help them understand the effect of change management in the adoption of ICT. The findings also reveal the organizational structure and help to determine whether the proposed changes in NHIF were resisted or adopted by the employee and the managers. Additionally, the findings provide information for future change management initiatives that would be required by the organization.

The study findings can help to sensitize the employees about the importance and challenges of adopting ICT systems. The study also provides information that could be helpful to the change managers to ensure effective implementation and adoption of ICT.

The findings can also be useful to future researchers who would wish to study the challenges of adapting ICT systems in a public organization. Future researchers can use this study as a reference. The study also contributes to the body of knowledge concerning change management.

1.8 Scope of the Study

The study focuses on the NHIF as the parastatal from which data was drawn. The study was conducted between May 2019 and June 2019 targeting the staff members in the NHIF headquarters in Nairobi. The respondents of the study included the managers and staff in all the departments of the organization.

1.9 Delimitations of the Study

This study was delimited to the NHIF headquarters in Nairobi. The NHIF has undergone and continues to undergo a series of digital transformations including mobile payments and online statement access among others. These transformations impact the way the organization operates and create a demand for change management. The study investigated the effect of change management using three elements of change: employee training, organizational structure and communication. The sample included staff at the headquarters only. Staff members in other branches were not included. The sample included participants that, at the time of data collection had, worked at the headquarters for a minimum of two years.

1.10 Limitations of the Study

The limitations of the study included challenges in engaging the respondents because of busy schedules and declining to participate. Some respondents' refusal to participate could be due to fear of victimization for providing sensitive information. To control these limitations, the researcher sought permission from the parastatal through an introduction letter from the university to request permission to carry out academic research. The research involved only willing participants, who were given a consent form to fill. The study allowed the respondents to suggest a convenient time for participation that is; within the research schedule, and the data was collected anonymously to prevent victimization. The resources to conduct this research were also a challenge, as it required a substantial amount of money. The researcher used his savings as well as donations from well-wishers to carry out the research. Costs were controlled to minimize expenses.

1.11 Assumptions of the study

The study made several assumptions. The study assumed that employee training has an effect on adoption of ICT systems in parastatals in Kenya, that communication has an effect on adoption

of ICT systems in parastatals in Kenya, and also it assumed that change of organizational structure affects the adoption of ICT systems in parastatals in Kenya. Further, the study assumed that the instruments used, collected all the information that was intended to be captured from the respondents.

1.12 Theoretical Framework

This part focuses on the theoretical framework which reviews the key change management schools of thought upon which the study is based. The biggest challenge to change management is to understand the organization's strategy and selecting the most appropriate approach to implement change while managing members' resistance to change. Change management draws on three schools of thought: The individual perspective school, the group dynamics school, and the open system school (Burnes, 2004). The individual perspective school states that an individual learns from the environment. It is useful in explaining change at the individual's level. The group dynamics school explains the impact of group dynamics on an individual. The open system considers an organization as a system composed of interconnected subsystems (Burnes, 2004). The individual perspective school, the group dynamics school, and the open system school are useful in explaining the variables employee training, communication, and organizational structure respectively.

The individual perspective school of thought argues that behavior is learned. An individual is passive and learns from his/her environment. The behaviors are learned through the individual's interaction with the external environment (Burnes, 2004). According to this school of thought, an individual is a recipient of external data. Rewards are used to encourage behavior change, and a positively reinforced behavior is easily repeated. Therefore, to change an individual's behavior, it is essential to change the individual's external environment. Patel and Conolly (2007) advocate for

organizational facilitators to aid in adoption of technology in an organization. Organizational facilitators are actions implemented in an organization that create a positive environment for adoption of technology. Organizational facilitators include training and education. This school of thought should be considered when training employees. Since individuals learn from their environment, providing training will help the NHIF staff to develop the technical skills necessary for successful adoption of ICT systems.

The group dynamics school of thought argues that individuals belong to groups, and display the group's behavior. According to this school of thought, individuals conform to the dynamics of the group to which they belong (Burnes, 2004). In organizations, people work in teams and function according to the team's prevailing practices. Adoption in organizations is associated with a variety of different organizational changes including changes within a department (Zanfei & Seri, 2016). Therefore, to influence organizational change, one should implement change even at the group level by focusing on changing group norms and values so that the change can be transferred to individual group members. Understanding the influence of group dynamics is critical in influencing positive response from the employees. Recognizing the groups present in NHIF, for instance departmental teams, is essential in the adoption of ICT. Working with the groups helps to enhance the adoption of ICT systems.

The open systems school views an organization as a system with interconnected sub-systems. A change in one subsystem impacts the other systems because the systems are in consistent association with one another (Burnes, 2004). An open system also interacts with the external environment in which it exists. Therefore, organizational change can be achieved by influencing a change in one subsystem. Emphasizing on system synergy enhances the penetration of change to the entire system (Burnes, 2004). The NHIF qualifies as an open system. Implementing change in

the organization should, therefore, consider the parastatal as an entity with subsystems that are interconnected. The organizational structure affects the operations of the organization. ICT adoptions require a transformation of old systems in terms of organizational structure and procedures (Ghobakhloo et al., 2012). A change in organizational structure is therefore essential to ensure successful adoption of ICT systems.

On models of change management, various scholars have developed different models that can be applied to both private organizations and public parastatals. Two reputable models that are discussed include Lewin's Change Model and Kotter's Eight-Phase Model. Lewin's change management model was developed by in 1947 by Lewin Kurt and expanded by Schein (1996). The model comprises of three phases: unfreeze, change and refreeze (Lewin, 1947). Lewin's approach is a basic model for understanding the change process. According to the model, it is essential to build-up a motivation for change before change is implemented – this is the unfreezing phase.

The unfreezing phase is concerned with preparing the organization for the change by challenging the existing status quo (Schein, 1996). In this phase, it is essential to communicate understandably why the current ways are faulty and state the need for improvement or change. It is crucial that all affected members understand the need for the change (Mboya & Waiganjo, 2015). To do so, one needs to start at the core of the organization, that is, the member's beliefs, and behaviors (Saetren & Laumann, 2017). Doubts and uncertainties characterize the unfreeze phase, therefore motivation is crucial to get buy-in. In this phase, the study assessed how communication can be used to motivate employees and how it affects the adoption of ICT systems.

The changing phase is the change implementation stage. According to Schein (1996), this phase involves time and requires effective communication to be successful. Employees need time to

understand the change, and also need to feel connected and involved through regular communication. It is essential that employees understand how the change will benefit them. However, change leaders should know that not all employees will benefit from the change. The change leaders need to be prepared to manage such groups. Other groups that will take a long time to experience the benefits also need to be managed.

The refreezing phase begins after the employees have embraced the new change. In this phase, the new practices are turned into the new norm. Refreezing is the internalization and incorporation of the change into the organization's business activities (Mboya & Waiganjo, 2015). At this stage, it is critical to recognize and appreciate the employees' efforts. Recognizing and rewarding efforts is useful for reinforcing the behavior (Burnes, 2004). Refreezing aims to stabilize the organization's new ways. This turned out to be one of the cornerstone models for understanding organizational change. According to Hussein (2018), this theory describes the effectiveness with which organizations are able to modify their strategies, processes, and structures. This theory therefore aided in achieving the third objective which sought to establish the contribution of organizational structure on adoption of ICT systems in parastatals in Kenya.

The Kotter's change model was proposed by John Kotter in 1995. Kotter's model consists of eight steps which involve creating a sense of urgency, forming a coalition, developing a vision for change, communicating the vision, removing obstacles, creating short-term wins, building on the change, and anchoring the change in the corporate culture (Kotter, 1995).

The first step, creating a sense of urgency, is achieved by fostering an understanding of the need for change (Richesin, 2011). Urgency can be created by communicating identified opportunities and threats and developing possible scenarios that might occur whether or not the change is implemented. Creating a sense of urgency is a crucial stage as it affects the momentum of the

subsequent step. If employees do not see the urgency, adopting the change might be challenging. When employees are aware of the impact of the change, there will be consensus for change (Aljohani, 2016). Therefore, considerable effort should be invested in this stage.

Having created a sense of urgency, the next step is forming a powerful coalition that will lead the change. Forming a coalition involves bringing together a team of influential people who will be committed to driving the change initiative (Richesin, 2011). It is essential to ensure that the team of influencers represents every department of the organization. The coalition team should not consist of leaders only, but should also include other influential members, for instance, experts.

The third step is creating a vision for change, and the fourth is communicating the vision. A vision is essential as it provides a picture of the desired goal (Kotter, 1995; Richesin, 2011). The vision created should be compelling so that the employees are motivated to achieve it. The vision should be communicated regularly and effectively to embed it in the minds of the employees. The vision should also be easy to understand and frequently communicated (Kotter, 1995). It is helpful to apply the vision in all areas of the organization, for instance during training or appraisals.

Step five empowers people for change by removing obstacles, while step six motivates people by creating short-term wins. Removing obstacles includes addressing resistance to change or changing systems and structures that are not aligned to the vision (Appelbaum, Habashy, Malo & Shafiq, 2012). Step six involves creating short time frame wins that will encourage employees to continue the change progress. Short-term targets can be set, and when achieved, members can be rewarded to build morale.

The seventh step focuses on building on the change by using what has been learned in the process to make improvements (Appelbaum, et al., 2012; Mboya & Waiganjo, 2015). After

improving the change, it is anchored into the corporate culture – the eighth step. The change should be inculcated in every aspect of the organization to make it the new way of doing things. This theory contributed to the first and second objectives examining the role of employee training and communication respectively on the adoption of ICT systems in parastatals in Kenya.

1.13 Conceptual Framework

The conceptual framework illustrates the independent and dependent variables. This study presents a relationship between change management and the adoption of ICT in NHIF in three primary variables that form the basis of the research. The diagrammatic representation below shows the relationship and direction of causality of the study variables.

Independent Variable

Dependent Variable

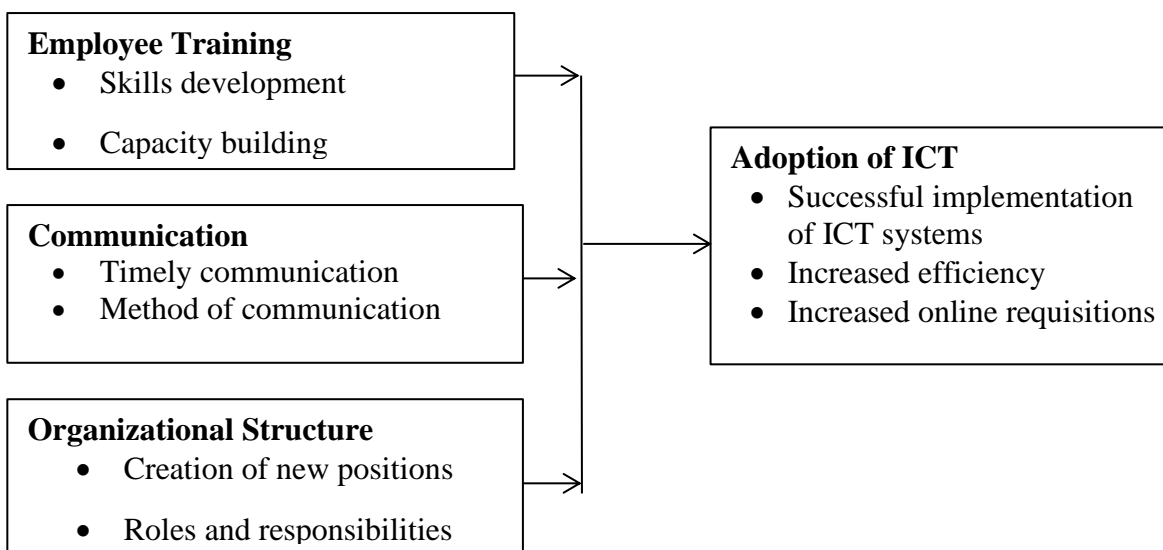


Figure 1.1: Conceptual Framework

The dependent variable is adoption of ICT system in parastatals in Kenya which is represented by increased in use of the system by staff, fast service delivery as well as efficiency. The independent variables are derived from change management practices that is employee training, communication and change of organizational structure.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter looks at the works of previous scholars who have studied the effect of change management in organizations. The chapter presents comprehensive review on the subject. The chapter's focus is on change management in public parastatals and its effect on the adoption of technology.

2.2 Review of Literature

2.2.1 Employee Training

Machii and Kyalo (2016) assessed ICT adoption for performance in Kenyan SMEs. The study purposed to identify the effects of ICT infrastructure, current ICT services, user skills, management support, and government policy, on the adoption of ICT. The research established that effective ICT adoption requires support from management, active engagement of users, and the skill and knowledge of ICT. These variables affected ICT adoption, which consequently affected the SMEs' performance. Employee resistance could be due to lack of ICT skills, and it can be reduced through training. They concluded that employee training is crucial in building skill and knowledge. Changes in organizational structure such as creation of new positions helps to provide management support.

Fadeyi and Haliso (2019) did a study to determine the relationship between Information Acquisition, ICT Use and Employee Satisfaction in Microfinance Banks in South-West, Nigeria. This study adopted a survey research design. The target population for this study were employees of microfinance banks in South-West, Nigeria. The report of the Central Bank of Nigeria (January, 2017) revealed that there were 980 registered microfinance banks in Nigeria out of which 348 were

found in South-West, Nigeria. The population of the study therefore covered 6,544 employees in the 348 microfinance banks in South-West, Nigeria from where a sample size of 600 employees were selected. Questionnaires were mainly used to collect primary data. The study established that employees of microfinance banks in South-West, Nigeria were moderately satisfied. In addition, they frequently acquire training and relevant market information in performing their daily routines. Their findings were supported by Okaro, Okafor, Nwanna and Igbinovia (2017) who reported that microfinance banks in Nigeria are experiencing low staff motivation which may lead to low employee satisfaction or outright dissatisfaction with the work environment. Other challenges they identified include authority and freedom, inadequate training and long work hours.

Whether R&D and workers' training investments and ICT are important for productivity and the capacity to set higher markups in developing countries are interesting development policy questions. Rodríguez-Moreno and Rochina-Barrachina (2019) explored the link between ICT use, investments in R&D and workers' training, firms' productivity and markups of Ecuadorian manufacturing sector. The study used data from the last Ecuador Economic Census, covering the universe of manufacturing firms. The study used multiple linear regression analysis to test the hypotheses. They found that good business practices, including access to internal capital markets or to external finance, encourage R&D and workers' training investments, and ICT use. These investments affect positively firms' productivity and markups.

A qualitative multiple case study was done by Rabogadi (2017) to examine strategies that information and communication technology managers use to build employee competencies. The target population for this study consisted of over 120 managers from 2 ICT service providers located in Gaborone and Francistown in Botswana. The thematic analyses of participants' interviews and company documents resulted in the emergence of three common themes including

developing professional employee competencies through training, promoting knowledge acquisition and skills transfer, and developing budgets for funding the development of employee competencies. Participants cited training and professional development as a reason for ICT infrastructure performance deficiencies.

ICTs is considered strategic tool for business management worldwide and fast finding wider application within the different sectors. Obonyo, Okeyo and Kambona (2016) explored the key management practices that influence actual ICT application among three to five star hotels in Kenya. The study adopted multiple case study approach to data collection where face-to-face interviews were conducted with 36 hotel managers drawn purposefully from hotels 36 hotels in Nairobi and Coast regions in Kenya. The data was thematically analyzed and two themes namely operational management practices and human resource management practices including training identified as influencing actual ICT application among three to five star hotels in Kenya. Their findings were later affirmed by Mboya and Waiganjo (2015) who concluded that employee training is also necessary as it promotes user engagement, which is also a vital factor in the successful adoption of ICT systems.

2.2.2 Communication

Communication is an important element of change. Open communication is essential for the successful adoption of technology (Agostino& Delaney, 2015). Communicating the what and why helps the staff to understand the need for change and what is expected of them. Effective communication includes defining the nature of change and how the change will affect the staff professionally and personally (Agostino& Delaney, 2015). Communication should use the different methods available in the organization, and tailored to the different organization levels (Aljohani, 2016). Agostino and Delaney (2015), state that an organization's leadership plays a vital

role in successful implementation of new technology. They suggested that open communication between the management and employees is essential during change. Studies have shown that employees respond better to change when it is openly communicated from their managers (Morsing & Schultz, 2006; Lewis, 2006; Brown, Kulik & Lim, 2016). The communication should involve explaining to the staff either directly or through intermediary how the change will benefit them.

Aljohani (2016) outlined the challenges that are faced by human resources in implementing change. The challenges include planning challenges, lack of consensus, communication challenges, and employee resistance. Communication is important to keep the staff updated and to help them understand the need for the new technology, and the impact it will have on the organization (Aljohani, 2016).

Timely and regular communication is essential to avoid speculations in the workplace. It also ensures all employees are part of the process (Aljohani, 2016). Changing the perceptions of people toward change should be a priority for implementing change. Regarding technology, Aljohani (2016), revealed that technology implementation in an organization will not be successful if the human aspect is not considered. The human factor is vital in the adoption of technology, and therefore the needs of the people affected should be considered.

Muñoz-Miralles, et al (2016) explored the problematic use of Information and Communication Technologies (ICT) in adolescents. The target population was 5538 students enrolled in years one to four of ESO at 28 schools in the Vallès Occidental region (Barcelona, Spain). Data was collected via self-administered socio-demographic and ICT access questionnaire, and validated questionnaires on experiences related to the use of the Internet, mobile phones and video games. The study established that the problematic Internet use was associated with female students,

tobacco consumption, a background of binge drinking, the use of cannabis or other drugs, poor academic performance, poor family relationships and an intensive use of the computer. Factors associated with the problematic use of mobile phones were the consumption of other drugs and an intensive use of these devices. Frequent problems with video game use have been associated with male students, the consumption of other drugs, poor academic performance, poor family relationships and an intensive use of these games.

Aldosari *et al.*, (2019) examined farmers' perceptions regarding the use of Information and communication technology (ICT) in Khyber Pakhtunkhwa, Northern Pakistan. Random sampling technique was used for selecting 183 respondents. Data were analyzed with descriptive statistics and Chi-square. A highly significant relationship was found between age of respondents and application of information received through radio and TV. The study concluded that that extension personnel should motivate and educate the farming community about the use of electronic media (TV, radio, helpline, mobile and internet) for advanced information about agriculture production techniques.

In their study, Mboya and Waiganjo (2015), linked change management to adoption of ICT in Kenya's public universities. The study looked at four change management strategies: commitment building strategy, communication strategy, transformational leadership strategy, and user involvement strategy. They concluded that frequent and effective communication and user engagement are also vital in the adoption of ICT systems.

2.2.3 Organizational Structure

Several works of literature have been published to determine the effects of change management in the adoption of ICT systems. Andrade and Joia (2012) examined the link between organizational structure and ICT strategies in the Brazilian Judiciary System. Findings shows that the existing

organizational structure favors uncoordinated actions, though the role of the National Council of Justice (NCJ) as protagonist in the process of coordinating the strategic planning of the Brazilian Judiciary System (and strategic ICT planning) might change this reality, allowing the Brazilian Judiciary System to reap the full benefits of ICT.

Omrani and Nigeb (2017) investigated the mediating role of information and communication technology (ICT) in the relationship between organizational structure and organizational agility. Descriptive with correlational design was employed. The population of the study was all workers of the Methanol Company of Deir. The research tools were measurement scale of ICT by Azadmehr, Robins' organizational structure questionnaire, and Sharifi-Zhang's Agility Questionnaire. Mean and simple variance and regression analyses were used for data analysis. The results of the study showed that organizational structure had a direct and significant relationship with ICT use.

Mboya and Waiganjo (2015), studied the influence of change management on the adoption of ICT in Kenya's public universities. The study alluded that leadership plays a crucial role in promoting effective change for the adoption of ICT systems. They affirmed that a change in the organizational structure is therefore, essential to ensure the appropriate leadership is in place. That includes the creation of new positions. They concluded that restructuring NHIF's organizational structure to create new positions and roles is essential for effective adoption of ICT.

Agostino and Delaney (2015), studied the challenges of integrating new technology into an organization. The study describes the challenges of adopting technology, training considerations in the adoption of technology, and the impact that technology has on organizations. The study points out that organizational change is imperative in the adoption of new technology. However, change can be resisted.

According to Agostino and Delaney (2015), changes cause disruptions in behaviors. However, altering staff behavior is a long-term process that can be faced with resistance. The authors advocate for gaining acceptance from the users of the technology by providing them with the understanding of the need for change. Resistance to change can come from any level in the organization, including management. That is because, adoption of technology might mean changes in responsibilities, need for new personnel or training. The staff might see the changes as a threat to their jobs or titles (Agostino & Delaney, 2015). Resistance from management or leadership is detrimental to the change. Employees need to feel there is support from the top management and need to be involved in the change process to encourage positive response.

A case study research was conducted by Mia and Ramage (2018) to examine ICT-mediated organizational change in microfinance organizations. The study was conducted using exploratory case study in two organizations. A number of semi-structured interviews and focus groups have been conducted at different layers of the organizations. The study found that ICT has profound implications for change in different material and social aspects of microfinance organizations. As a catalyst, ICT causes organizational structure shrank both horizontally and vertically. Because of the use of ICT a loss-of-middle phenomenon emerges in organizational structure and a tendency of centralized decision authority prevails. It helps boosting up the operational performance and transparency and lowering the long-debated interest rate of microfinance. It engenders profound changes in human resources and socio-cultural aspects of microfinance organizations

2.3 Summary and Research Gap

A study of different works of literature reveals three crucial requirements for successful adoption of technology. The pieces of literature reviewed have shown that leadership and communication from leaders are vital to the successful adoption of ICT. Management support is

valuable. Leaders should be change drivers and promote change in the organization for a successful transition.

Communication and employee engagement are essential in change management and adoption of ICT. Communication should be frequent to keep staff informed. Communication should also be open. Employee engagement can be in the form of training. Engaging the users of new technology promotes a positive response. The literature supports the variable selected for this study. Implementing change in organizational structure, employee training and communication are essential to determining NHIF's effectiveness in the adoption of ICT.

Considering the research gaps, many researchers have investigated change management in organizations, but few have considered parastatals given their uniqueness in terms of funding and decision making. There is a paucity of research investigating the effect of change management about the implementation of ICT in institutions operating in the public sector. Given the knowledge gap in this sector, this study purposes to provide knowledge about the effect of change management in the implementation of ICT in parastatals. The study examined the effect of change management practices in the adoption of ICT in parastatals with a focus on NHIF.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

This chapter presents the research methods used in the study and provides a general framework for this research. The chapter presents details of the research design, research sites, and rationale, target population. Study sample in terms of sample size as well as sampling procedures are presented. Also, data collection in terms of data collection instruments, piloting of instruments to ascertain reliability and validity and data collection procedures are discussed. Lastly, data analysis, as well as legal and ethical considerations of the study are presented.

3.2 Research Design

The study used a survey research design where information was obtained through semi-structured self-administered questionnaires to the study sample. A cross-sectional survey is used as it best for descriptive data and can also be used for explanations (Akhtar et al., 2016). The design is considered appropriate because a survey research design enables a researcher to obtain specific characteristics of a large population using questionnaires (Creswell, 2015). For this study, information on the effect of communication, training, and organizational structure change is sought. From the sample results, the researcher may draw an inference to the population (Creswell, 2015).

3.3 Research Site and Rationale

The study was conducted at the National Hospital Insurance Fund in Nairobi. It is the headquarters of the organization where decisions affecting the operations of the organization are made. It therefore influences the operations of the branches and the satellite offices. The

headquarters was selected because it hosts the highest number of employees in management positions.

3.4 Target Population

Target population refers to the group of people to whom we want the research to apply. It refers to all members who meet a criterion that has been specified for the research investigation (Jha, 2014). The NHIF population is approximately 300 employees at the National Hospital Insurance Fund headquarters only.

3.5 Study Sample

3.5.1 Study Sample Size

A sample refers to a small group obtained from a larger population using a particular method (Jha, 2014). From the target population 90 participants were selected for the study. For a sample to be useful in generalizing to the population, it must be representative of the population (Jha, 2014). Therefore, the study sample constituted of members from different departments in the organization including: Operations, Corporate Strategy & Planning, Finance & Control, Information Communication & Technology, Human Resource and Administration. As shown in the sampling frame, the sample size for the study was 90 participants; 30% of the target population. This follows the suggestion by Mugenda and Mugenda (2003) who suggested that a sample size of 30-40% is sufficient and representative of the population size. This sample size is suitable as the researcher can afford the cost to collect data.

Table 3.1: Sampling Size

NHIF Departments	Target Population	Percentage	Sample
Staff in operations	110	30	33
Staff in Corporate, Strategy and Planning	64	30	19
Finance and Control staff	52	30	16
Information Communication & Technology staff	34	30	10
Human Resource and Administration staff	40	30	12
Total number of staffs	300		90

Source: NHIF Human Resource Department (2019)

3.5.2 Sampling Procedures

Stratified sampling technique was used to put respondents into different sub-groups (departments). Thereafter, simple random sampling was used to select the respondents from each strata. Random sampling ensures that all members have an equal and independent chance of being selected (Jha, 2014). A random sample from every department was selected. Each employee was assigned single numbers and then selected at random. The Human Resource employee master list was used to allocate the numbers.

3.6 Data Collection

3.6.1 Data Collection Instruments

The study collected primary data. Questionnaires were used to gather information from the sampled respondents. The questionnaire was divided into two sections. The first part was concerned with the collection of demographic data, while the second was structured to collect information regarding the study objectives.

3.6.2 Piloting of Research Instruments

Piloting of research instruments is the testing of the instruments to identify errors and correct them before the actual implementation (Pruzan, 2016). Piloting helps to ensure that the instrument is reliable. To assess the validity and reliability, the study instrument that is the questionnaire was administered to ten percent of the sampled population that is nine respondents from NHIF headquarters. It was necessary to do the pilot test to measure the suitability of the questionnaire, to check whether the questions were relevant and clear to the respondents, and to enhance the questionnaire's reliability and validity.

3.6.3 Reliability of Research Instruments

Reliability of a research instrument refers to the instrument's ability to provide stable and consistent results under constant conditions (Taherdoost, 2016). It is the degree of consistency of a measuring procedure in giving similar results repeatedly. However, reliability can be decreased by errors during measuring; therefore, adjusting for errors is essential in assessing reliability (Taherdoost, 2016). The reliability of the questionnaire was assessed in the pilot test using a test-retest reliability method, where the test was administered twice in a two-week period to selected respondents at NHIF.

3.6.4 Validity of Research Instruments

The questionnaire's content validity was determined through expert judgment. Content validity refers to the degree to which the items in an instrument represent the entire domain the instrument seeks to measure (Taherdoost, 2016). Specialists like the university supervisor evaluated its validity. The recommendations provided were incorporated into the final questionnaire. The face validity of the questionnaire was also evaluated. Face validity is the subjective view of the degree to which the instrument measures what it purports to measure (Taherdoost, 2016). It includes the

researcher's subjective assessment of the relevance of the items in the instrument in measuring the matter of interest (Oluwatayo, 2012). The researcher ensured that the variables are appropriately measured by the instrument.

3.6.5 Data Collection Procedures

Data was collected using a structured questionnaire with close-ended questions. The questionnaire was administered via face to face and in the event the respondent was not available, the researcher used online. The questionnaire was used to collect primary data because of its potential to reach participants in a short time, and it also allows participants to respond at their convenience (Murgan, 2015).

3.7 Data Analysis

Once data was received from the field, it was entered in excel software and cleaned before importing to Statistical Package for Social Sciences (SPSS) software version 22.0 for further analysis. Data was analyzed using descriptive statistics: frequency distributions and measures of central tendency such as mean, and standard deviation. Frequencies of various demographic variables were derived for analysis of the demographic aspects of respondents of the selected fund managers.

Also, inferential statistics were employed in deeper analysis. Correlation analysis was done using Pearson's correlation matrix to check for association among the study variables. The study also used the regression model which was used to test the relationship between change management and adoption of ICT system at NHIF. The model utilized is multiple linear regression model. The model was subjected to classical linear assumptions that tests for normality, multicollinearity, linearity, as well as heteroscedasticity. Both model summary and Analysis of Variance (ANOVA) were used to test model significance.

The model used was expressed as follows;

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

Where: Y = Adoption of ICT system at NHIF

X₁ = Employee Training

X₂ = Communication

X₃ = Change of Organizational Structure

(β_i; i=1,2,3) = The coefficients for the various explanatory variables

ε is the error term

The generated results were presented through tables and figures. In other words, the information and statistics were presented in tables, graphs, charts, frequency distribution, as well as percentages.

3.8 Legal and Ethical Considerations

A letter was obtained from the School of Business, Africa Nazarene University, addressing the National Hospital Insurance Fund, seeking approval for conducting the research. The nature and purpose of the study was explained to all participants to ensure informed consent, and confidentiality assured. Participation in the survey was voluntary, and the data was analyzed anonymously. A research permit from NACOSTI was granted after a successful application to conduct the research at the NHIF.

CHAPTER FOUR

DATA ANALYSIS AND FINDINGS

4.1 Introduction

This chapter discusses the data and presents the research findings. Quantitative data collected from primary sources are analyzed in this section. Primary data was gathered randomly using a questionnaire. The demographic data of the respondents are presented. SPSS and Microsoft Excel were used to analyze the data and calculate the mean, median, and percentile values. Tables, charts, and graphs are used to present the research findings.

4.2 Response Rate

The questionnaires that the researcher administered were 90 out of which only 79 fully filled questionnaires were returned. The results are as shown in Table 4.1. From the returned questionnaires, it gave a response rate of 87.78% which was within what Sekaran (2003) prescribed as a significant response rate for statistical analysis and established it at a minimum value of 50%.

Table 4.1: Response Rate

Response	Frequency	Response Rate (%)
Usable returned questionnaires	79	87.78
Not Usable (Not returned and poorly filled)	11	12.22
Total	90	100.00

4.3 Demographic Characteristics

Both frequency and percentage were statistical measures used in analysis to describe the sample in terms of their demographic characteristics such as gender, educational qualifications, job level and experience (years worked). Demographic information provided data regarding participants and was necessary for the determination of whether the individuals sampled in this study are a representative sample of the target population for generalization purposes.

4.3.1 Gender Distribution

The study sample constituted 38 male participants and 41 females. Male participation was 48%, and female participation was 52% (see table. 4.2). Male and female respondents have participated in a closely equal ratio, which differs by 4.8 percent; having a slightly higher number of female respondents.

Table 4.2: Gender Distribution

Gender	Freq.	Percent
Male	38	48.1
Female	41	51.9
Total	79	100.00

4.3.2 Education Level

The majority of participants have attained a bachelor's degree 77.2%. Most of the respondents with a master's and Doctorate were in the top and mid-level management, while the general staff consisted of respondents with Diplomas and Bachelor's degrees. 12.7% of the respondents have diplomas, while 12.1% have master and doctorate degrees (see table 4.3).

Table 4.3: Participants' Education Level

Level of Education	Freq.	Percent
Diploma	10	12.66
Bachelors	61	77.22
Masters	6	7.59
Doctorate	2	2.53
Total	79	100.00

4.3.3 Job Level

The study targeted respondents from all job levels. As indicated in table 4.4, staff working in operations department had highest representation at 39% followed by staff in corporate, strategy and planning at 18%. The other cadres were closely represented between 14% and 16%. Generally, the respondents were well represented within their departments. It was essential to get representatives from all levels for generalization of the findings.

Table 4.4: Participants per Job Level

Job Level	Freq.	Percent
Human Resource and Administration	11	13.92
Information communication & technology	10	12.66
Finance and Control	13	16.46
Corporate, Strategy and Planning	14	17.72
Operations	31	39.24
Total	79	100.00

4.3.4 Years Worked at NHIF

The study considered employees who have worked at NHIF headquarters for a minimum of two years. It is assumed that two years is enough for an individual to make a reasonable assessment of the effects of adopting ICT by comparing it to the time before ICT adoption. Most respondents 51.9% have worked at NHIF for a period between six and ten years. About 36.7% have worked for three to five years whereas 7.6% have worked for two years while only 3.8% have worked for over eleven years, (see table 4.5). The findings imply that over three quarters of the participants that is 88.6% are highly experienced having worked in the institution for years between 3 and 10 years.

Table 4.5: Participants years worked at NHIF

Job Experience	Freq.	Percent
2 years	6	7.59
3-5 years	29	36.71
6-10 years	41	51.90
Over 10 years	3	3.80
Total	79	100.00

4.3.5 Level of Computer Skills (ICT Training)

The study assessed the level of computer skills for the respondents. The following categories were considered; Beginner (Basic MS Packages and internet skills- open document, type and save, email), Intermediate (Prepare documents, edit, email, research), Advanced (Prepare documents, edit, use tools and formulas, email, research) and lastly, Proficient (Computing and Programming). The findings are as indicated in table 4.6.

Table 4.6: Computer Skills Level among the Respondents

Computer Skills	Freq.	Percent
Basic	6	0.08
Intermediate	51	0.643
Advanced	17	0.217
Proficient	5	0.06
Total	79	100.00

The findings show that 8% of the respondents had basic skills which include basic knowledge of MS packages and using email. It was shown that six percent (6%) have proficient skills which include the skills in advanced level plus computing and programming (see table. 4.6). On the other hand, 21.7% had advanced skills implying ability to prepare and edit documents, use MS tools and formulas, email, and do online research. On the other hand, most of the respondents (64.3%) had an intermediate level of computer skills which refers to the ability to prepare and edit documents, use email, and do basic research online.

4.4 Descriptive Statistics

The study employed descriptive analysis to explore change management and adoption of ICT in NHIF, Kenya. Descriptive measures include measures of central tendency (mean and standard deviation) were adopted. Mean measures the highly typical value in a set of values. The standard deviation shows how far from the mean the distribution is. The presentation in this section was based on the objectives of the study. The specific objectives were to establish the effect of employee training on the adoption of ICT systems in parastatals in Kenya, determine the effect of communication on the adoption of ICT systems in parastatals in Kenya and assess how change of organizational structure affects the adoption of ICT systems in parastatals in Kenya.

4.4.1 Employee Training

The respondents were asked to establish how employee training influenced adoption of ICT systems in parastatals in Kenya. The responses were rated on a Likert scale and the results are as presented in table 4.7 where SD-Strongly Disagree, D=Disagree, N=Neutral, A= Agree, and SA= Strongly Agree.

Table 4.7: Employee Training (ET)

Statements (ET)	Frequencies						Mean	STD
	SD	D	N	A	SA			
Staff have the necessary skills for new ICT systems	1.15	7.78	32.85	31.41	26.8		3.75	0.98
The organization has provided training to help employees adopt the new ICT systems	3.17	10.37	38.04	27.67	20.75		3.52	1.03
The training provided was adequate to developed skills for more efficiency	4.61	17.29	30.55	28.24	19.31		3.40	1.12
Overall Mean							3.56	1.04

From the findings; the response with the highest mean was the question on whether staff have the necessary skills for new ICT systems, approximately 31.41% of the respondents just agreed with this statement whereas 26.8% strongly agreed with the same. Only 7.78% disagreed with that statement. The mean of 3.75 implied that most of the respondents just agreed with this statement. Also the standard deviation of 0.98 showed that there was some variation.

On the other hand, whether the organization has provided training to help employees adopt the new ICT systems, the findings indicated that 48.42% of the respondent agreed with this statement whereas 38.04% were neutral on the same. Only 3.17% disagreed with that statement. The mean of 3.5 implied that most of the respondents just agreed with this statement.

Conversely, the response with the lowest mean score was the question on whether the training provided was adequate to developed skills for more efficiency. It was revealed that about 28.53% and 18.16% just agreed and strongly agreed respectively with this statement leading to a mean of 3.3 and a standard deviation of 1.3. This implied that there was some variation in responses although it was clear that this statement was strongly supported.

The overall mean for the observed factors was 3.5, indicating that most of the respondents just agreed with the statements. The standard deviation was 1.04, indicating that there was some variation in all of the responses. From the findings that is overall mean, it could be concluded that most of responses concurred with statements put forward regarding employee training.

4.4.2 Communication

The study sought to establish how timeliness and clarity of communication received on the expected changes lead to preparation of adopting ICT systems. The responses were rated on a Likert scale and the results are as presented in table 4.8.

Table 4.8: Communication

Statement	Frequencies						Mean	STD
	SD	D	N	A	SA			
We have received some form of communication regarding changes required in adoption of ICT systems	4.32	10.09	13.05	36.8	35.73	4.04	1.08	
The information was adequate to prepare you for change	4.9	15.85	20.26	29.68	29.31	4.13	1.12	
The organization provided adequate information regarding the adoption of ICT. For instance, communicating the impact of implementing ICT	4.9	17.58	29.68	31.12	16.71	3.37	1.10	
Overall Mean						3.85	1.10	

The study established that the response with the highest mean showed that almost three quarters (72.5%) of the respondents concurred that they received some form of communication regarding changes required in adoption of ICT systems. Their mean was 4.04 while the standard deviation was 1.08 indicating variation in responses.

On the other hand, the response with the lowest mean was in the question on whether the organization provided adequate information regarding the adoption of ICT. For instance, communicating the impact of implementing ICT. It was found that 31.12% and 16.71% just agreed and strongly agreed respectively with this statement leading to a mean of 3.37 and a standard deviation of 1.1. This implies that there was little variation in responses although it was clear that this statement was strongly supported.

The overall mean for the structural variable was 3.9, indicating that majority of the respondents just agreed with the statements. The standard deviation of about 1.1 indicates that there was some variation in all the responses. The overall mean implied that most of responses just agreed with statements put forward regarding communication.

4.4.3 Change of Organizational Structure

The respondents were asked to determine the effect for change of organizational structure on the adoption of ICT systems in parastatals in Kenya. The responses were rated on a Likert scale and the results are as presented in table 4.9.

Table 4.9: Organizational Structure Change (COS)

Statement	Frequencies						
Change of Organizational Structure	SD	D	N	A	SA	Mean	STD
Changing the organizational structure help to make the implementation of ICT more effective	4.03	8.65	16.02	28.63	42.67	4.70	0.20
New positions have been created because of ICT adoption	3.46	4.99	11.41	39.56	40.58	4.46	1.05
There is need for change of roles and responsibilities before ICT can be integrated	8.36	19.02	25.07	28.82	18.73	3.31	1.01
Overall Mean						4.16	0.75

The study established that most (that is 71.3%) of the respondents concurred that changing the organizational structure would help to make the implementation of ICT more effective. Their mean was 4.7 while the standard deviation was 0.2 indicating little variation in responses. In assessing the respondents concerning the new positions have been created because of ICT adoption, it was revealed that 39.6% and 40.6% just agreed and strongly agreed respectively with

this statement leading to a mean of 4.46 and a standard deviation of 1.05. This implies that there was some variation in responses although it was clear that this statement was strongly supported. It further, revealed that the 28.82% of the respondents agreed that there is need for change of roles and responsibilities before ICT can be integrated while 25.1% were neutral. Their mean was 3.31 while the standard deviation was 1.01 indicating moderate variation in responses.

The overall mean for the structural variable was 4.16, indicating that majority of the respondents agreed with the statements. The standard deviation was 0.75, indicating that there was little variation in all of the responses. From the findings that is overall mean score, it could be concluded that most of respondents highly agreed with statements put forward regarding change of organizational structure.

4.4.4 Adoption of ICT System

The respondents were asked to give answers regarding the adoption of ICT system. The study results as shown in table 4.10.

Table 4.10: Adoption of ICT System

Statement	Frequencies						
	SD	D	N	A	SA	Mean	STD
Adoption							
There is increased use of computers at NHIF offices across the country	2.88	9.51	13.72	30.8	43.09	4.46	0.16
NHIF has intensified a number of activities through online platform in the recent past	8.07	10.71	16.80	29.02	35.39	4.12	1.01
NHIF has hired more ICT specialists across all branches in the country	7.2	17.87	17.67	30.84	26.43	3.45	0.96
Overall Mean						4.01	0.71

The study results as showed that the highest mean from the responses was for the query on whether there is increased use of computers at NHIF offices across the country, with a mean of 4.46, and a standard deviation of 0.16 indicating little variation in responses. On the other hand, the least mean was recorded on the question whether NHIF has hired more ICT specialists across all branches in the country, the results had the lowest mean of 3.45 and a standard deviation of 0.96, this implies that there was little variation in responses as well.

The overall mean of the structural variable was 4.01, indicating that majority of the respondents just agreed with the statements. The standard deviation was 0.71, indicating there was some variation in all the responses. From the findings that is overall mean, it could be concluded that most of responses highly agreed with statements presented regarding adoption of ICT system.

4.5 Correlation Analysis

In this study, correlation analysis of the latent variables was conducted, and correlation coefficients obtained. This aids in assessment of the influence of change management on the adoption of ICT in parastatals in Kenya. The correlation coefficient (r) value, measures the strength and direction of the relationship between two continuous or ratio/scale variables. The Spearman's Correlation was carried out and findings presented in Table 4.11.

Table 4.11: Spearman's Correlations Matrix

Variables		Adoption of ICT	Training	Communication	Change of Organizational Structure
Adoption of ICT	Pearson Correlation Sig. (2- tailed) n=79	1.000			
Training	Pearson Correlation Sig. (2- tailed) n=79	0.3750** (4.81)	1.000		
Communication	Pearson Correlation Sig. (2- tailed) n=79	0.5170** (3.02)	0.4819** (8.37)	1.000	
Change of Organizational Structure	Pearson Correlation Sig. (2- tailed) n=79	0.4800** (2.56)	0.6048** (9.17)	0.5058** (7.85)	1.000

NB: Values in parenthesis are t- statistics. Also () implies significant at 5% level.**

The results showed that all variables had some association which was positive within their respective pair. Adoption of ICT had a positive and significant ($p < 0.05$) effect with the communication change that is $r = 0.375$, $r = 0.517$, and $r = 0.48$ for training, communication and change of organizational structure respectively. The relationship between training and communication was as well positive and significant ($r = 0.4819$, $p < 0.05$). The relationship between training and change of organizational structure was very strong and significant ($r = 0.6048$, $p < 0.05$). The relationship between communication and change of organizational structure was also significant and positive ($r = 0.5058$, $p < 0.05$).

4.6 Relationship between Change Management and adoption of ICT system

To establish the relationship between change management and adoption of ICT in parastatals in Kenya, the study undertook multiple linear regression analysis to test the study hypotheses. The

following hypotheses are tested. H₀₁: Employee training does not have significant influence on adoption of ICT systems in parastatals in Kenya, H₀₂: Communication does not have significant influence on adoption of ICT systems in parastatals in Kenya, and H₀₃: Change of organizational structure has no significant effect on adoption of ICT systems in parastatals in Kenya.

In determining a statistical significance, the researcher conducted multiple regression analysis (considering model summary and ANOVA) at 95% confidence level where, a use of statistical package for social sciences (SPSS Version 22.0) was used to code, enter and compute the measurements of the regressions.

4.6.1 Model Summary

To realize the study objectives, the effect of each variables was analyzed in a multiple linear regression model. The model summary is presented in the Table 4.12.

Table 4.12: Model Summary

Model Summary^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.431 ^a	.186	.153	.55802

a. Predictors: (Constant), Change of organizational Structure, Employee Training, Communication

b. Dependent Variable: Adoption of ICT System

The study used coefficient of determination to evaluate the model fit. The adjusted R², also called the coefficient of multiple determination, is the percent of the variance in the dependent explained uniquely or jointly by the independent variables. The model had an average coefficient

of determination (R^2) of 0.186 and which implied that 18.6% of the variations in adoption of ICT system at NHIF are explained by change management.

4.6.2 Analysis of Variance (ANOVA)

The study further tested the significance of the model by use of ANOVA technique. The findings are tabulated in Table 4.13.

Table 4.13: ANOVA Change Management and Adoption of ICT system at NHIF

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.319	3	1.773	5.694	.001 ^b
	Residual	23.354	75	.311		
	Total	28.673	78			

a. Dependent Variable: Adoption of ICT System
b. Predictors: (Constant), Change of organizational Structure, Employee Training, Communication

From the ANOVA statistics, the study established the regression model was significant at 5% level since the overall p value of 0.001 is an indication that the data was ideal for making a conclusion on the population parameters. It implies that all aspects of change management that is training, communication and change of organizational structure all have a significant effect on adoption of ICT system at NHIF.

4.6.3 Regression Coefficients of the Linear Regression Model

The main objective of this study was to examine the relationship between change management practices and adoption of ICT system at NHIF. The study explored how each aspect of change management (training, communication, and change of organizational structure) influenced use of ICT system at NHIF. The study employed the use of the coefficient table to determine the estimated model. The study findings are as shown in Table 4.14.

Table 4.14: Regression Coefficients for Change Management

Model		Unstandardized Coefficients		Standardized Coefficient	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.137	.520		4.107	.000
	Employee Training	.166	.065	.274	2.564	.012
	Communication	.182	.075	.281	2.441	.017
	Change of organizational Structure	.009	.103	.010	.091	.928

a. Dependent Variable: Adoption of ICT System

The regression model proposed for estimation was represented as shown below;

$$AdoptICT = \beta_0 + \beta_1 Train + \beta_2 COMM + \beta_3 COS + \varepsilon$$

Where:

asAdoptICT - Adoption of ICT

Train - Training

COMM - Communication

COS – Change of Organizational Structure

From the model, we have values in terms of magnitude, significance or direction. Holding all change management factors constant, adoption of ICT will still increase by 2.137. This was a significant rise (table 4.13). The first objective was to determine the effect of employee training on the adoption of ICT systems in parastatals in Kenya. The corresponding null hypothesis stated as; employee training does not have significant influence on adoption of ICT systems in parastatals in Kenya. The study rejected the null hypothesis and concluded that employee training had a positive and significant influence on adoption of ICT systems at NHIF ($\beta = 0.274$, $t = 2.564$, $p < .05$). It was revealed that employee training led to 0.274 increase in adoption of ICT systems at NHIF holding other factors constant.

The second objective was to explore the effect of communication on the adoption of ICT systems in parastatals in Kenya. The corresponding null hypothesis stated as; communication does not have significant influence on adoption of ICT systems in parastatals in Kenya. The study rejected the null hypothesis and concluded that communication had a positive and significant influence on adoption of ICT systems ($\beta = 0.281, t = 2.441, p < .05$). It was revealed that more communication led to 0.281 increase in adoption of ICT systems at NHIF holding other factors constant.

The third objective was to assess how change of organizational structure affects the adoption of ICT systems in parastatals in Kenya. The corresponding null hypothesis stated as; change of organizational structure has no significant effect on adoption of ICT systems in parastatals in Kenya. The study failed to reject the null hypothesis and concluded that change of organizational structure had a positive and non-significant influence on adoption of ICT systems at NHIF ($\beta = 0.01, t = .091, p > .05$). It was revealed that change of organizational structure led to 0.01 increase in adoption of ICT systems at NHIF holding other factors constant.

The final estimated model is as shown below;

$$\text{Adoption of ICT} = 2.137 + 0.274\text{Training} + 0.281\text{communication}$$

The above is a significant model estimated through multiple linear regression model indicating the significant magnitude and thus factors significantly influence the adoption of ICT system at NHIF.

CHAPTER FIVE

DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a summary of the major findings, and a general discussion of the same. It also provides the conclusion, recommendations, and the areas for future research.

5.2 Discussion

5.2.1 Effect of Employee Training on adoption of ICT in Parastatals in Kenya

This objective was meant to determine the contribution of employee training on adoption of ICT systems in NHIF. Considering descriptive statistics, respondents generally agreed that employee training is important factor in adoption of ICT systems in parastatals in Kenya.

From the multiple linear regression model, it was revealed that employee training variable was statistically significant with a positive effect on adoption of ICT systems in parastatals in Kenya. A unit increase in employee training increases adoption of ICT systems in parastatals in Kenya significantly. This is as a fact that the p value yielded was less than 0.05 level of significance. The study results concurred with the findings obtained in a study conducted by Murugi and Ongoto (2018) who concluded that training is significant in increasing employee knowledge to enhance operational efficiency. In their findings, the authors revealed that that training of employee had a significant impact to use of a product. Also, other studies asserted that training of employees contributes to increased satisfaction in addition to empowering them with relevant skills, which in turn make it easier for employees to adapt to change (Flavián&Guinalú, 2015).

5.2.2 Effect of Communication on Adoption of ICT in Parastatals in Kenya

The second objective was to assess the role of communication on adoption of ICT systems in NHIF. From the descriptive results, it was viewed that most of responses highly concurred (strongly agreed) with statements that was put forward regarding communication.

Following estimation of multiple linear regression model, communication variable had a positive and significant effect on adoption of ICT systems in parastatals in Kenya. For a unit increase in communication, adoption of ICT systems in NHIF increased significantly. This is as a fact that the p value obtained was less than 0.05 level of significance. The finding is in agreement with the result obtained by Agostino and Delaney (2015); and Aljohani (2016), who both concluded that communication should involve explaining how the change is going to affect the employees and this was shown to have a significant positive effect in change adoption.

5.2.3 Effect of Change of Organizational Structure on Adoption of ICT in Parastatals in Kenya

The third objective was to establish the link between change of organizational structure and adoption of ICT systems in parastatals in Kenya. The overall mean implies that respondents highly agreed with most statements regarding change of organizational structure.

The multiple linear regression model indicated change of organizational structure as a variable had a positive impact on adoption of ICT systems in parastatals in Kenya. It was revealed that for a unit increase in organizational structure change, adoption of ICT systems in parastatals in Kenya increased by a corresponding positive value. A change in organizational structure is essential to ensure successful adoption of ICT systems. The effect of this change was however not statistically significant. This is as a fact that the p value obtained was more than 0.05 level of significance. The

findings differed with study by results of Ghobakhloo et al., (2012) who argued that organizational structure directly affects how an organization operates. Their findings revealed that the change in processes that are brought about by the adoption of ICT are significantly related to establishment of new positions. They concluded that the adoption of ICT requires a transformation of the organizational structure. The results on the other hand revealed that change of organizational structure had insignificant effect.

5.3 Summary of Major Findings

The purpose of this study was to determine the effect of change management on the adoption of ICT at NHIF. The following were determined; the effect of employee training on the adoption of ICT systems in parastatals in Kenya, effect of communication on the adoption of ICT systems in parastatals in Kenya and how change of organizational structure affects the adoption of ICT systems in parastatals in Kenya. The study was guided by models of change management (Kurt Lewin's change management approach and Kotter's model of eight steps). A descriptive design was used to examine the relationships between variables.

In the first objective, the study explored the link between employee training and adoption of ICT systems in parastatals in Kenya. From the descriptive analysis, having the necessary skills for new ICT systems was rated highly compared to other statements as having enabled adoption of ICT system at NHIF. The model shows that employee training variable positively impacts the growth of capital markets where the model revealed that for a unit increase in employee training increase adoption of ICT system significantly by 0.274units holding other factors constant.

In the second objective, the study was focused at establishing how communication on the adoption of ICT systems in parastatals in Kenya. From the descriptive statistics, respondents rated

highly the fact that they had received some form of communication regarding changes required in adoption of ICT systems compared to other statements. From the regression analysis, communication variable was shown to have a positive impact on adoption of ICT system. The effect was significant where a unit increase in communication increase adoption of ICT system by 0.281 units holding other factors constant.

In the third objective, the study explored the link between change of organizational structure and adoption of ICT systems in parastatals in Kenya. From the descriptive analysis, changing the organizational structure to help to make the implementation of ICT more effective was rated highly as leading to use of ICT systems compared to other statements. On the other hand, change of organizational structure as a variable positively influenced the adoption of ICT system at NHIF. However, effect was statistically not significant. From estimation, for unit increase in organizational structure change, adoption of ICT increased by a positive value of 0.01 units holding other factors constant.

5.4 Conclusion

Employee training, communication, and change of organizational structure are critical elements in facilitating the adoption of ICT at the NHIF. A review of literature reveals that the three elements are significant factors in the adoption of change in organizations. However, based on the study findings, employee training and communication had a significant and positive effect on adoption of ICT system at NHIF whereas change in organizational structure had a non-significant effect.

Organizational have the responsibility of providing training or facilitate the acquisition of training. Training does not have to be for all staff members, but every affected employee should be adequately trained. Secondly, it is concluded that communication is crucial in adopting change.

Leaders play a vital role in communicating change. Open communication between leaders and employees is essential. Excellent communication skills need to be employed to ensure that the communication is clear, and with adequate details. Communication that openly states the nature and impact of the change is more effective in preparing employees for the adoption of ICT.

From the finding, the study concluded that change of organizational structure plays a non-significant role in the adoption of ICT system in NHIF. Organizational structure includes roles and responsibilities, and positions of leadership. The study observes that new positions created or new realignments of NHIFs structure could not be commiserating to the adoption levels of ICT system. Therefore, there is need for policies suggestions leading to change in management practices with significant impact on adoption of ICT system at NHIF.

5.5 Recommendations

The NHIF has put significant effort in preparing the staff for the adoption of new ICT systems. The study recommendations are based on significant change management practices as empirically established. Based on the findings, the study recommends for increased and continuous training of employees, the NHIF should ensure that the training provided is enough. Training can be provided internally or externally. If the organization does not have the necessary resources to provide internal training, it is recommendable to either plan for external training or sponsor employees to get training. The training provided is essential in developing skills that are necessary to facilitate the adoption of ICT systems. Training is critical for successful adoption of ICT. Therefore, NHIF should ensure that the trained staff receive enough training.

The findings indicate that organizational communicates was shown to have a significant impact on adoption of ICT system at NHIF. Communication in change management should be tailored to the different organizational levels and done through all available means. Excellent communication

skills are vital in preparing employees for change. The study suggests for effective communication which should involve defining the nature and impact of the change at NHIF. NHIF should ensure that communication is open while being practical as much as possible. Specifically, while communicating, NHIF should ensure that the communication provides sufficient information with regard to ICT systems.

5.6 Areas for Further Research

The NHIF is a public parastatal offering insurance services. This study focused on the NHIF headquarters only and was limited to investigating three elements of change: employee training, communication, and change of organizational structure. Further studies should be carried out in different industries, such as private institutions or the manufacturing industry, to provide a comprehensive understanding of the three elements of change. Research is also required to study other elements of change, such as the change management processes.

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APPENDICES

Appendix I: Questionnaire

Thank you for participating in the Change Management and the Adoption of ICT Systems in Parastatals in Kenya: A case of the National Hospital Insurance Fund (NHIF) research.

The data you provide through this questionnaire will be kept confidential and will anonymously be used ONLY for the purposes of this study. Please take a few minutes of your time to fill this questionnaire and submit the completed form to the researcher.

SECTION ONE: DEMOGRAPHIC INFORMATION

Please tick as applicable

1. Gender

- a. Male []
- b. Female []

2. Please indicate your level of education

- a. Diploma []
- b. Bachelor []
- c. Masters []
- d. Doctorate []
- e. Other (Please specify) _____

3. How long have you been working at the NHIF?

- a. Less than 2 year []
- b. 3 – 5 years []
- c. 6 – 10 years []
- d. 11 years and above []

4. What is your position at NHIF?

- a. Top Level Management []
- b. Middle level Management []

c. Operations and administration []

5. Level of computer skills

a. Beginner []

(Basic MS Packages and internet skills- open document, type and save, email)

b. Intermediate []

(Prepare documents, edit, email, research)

c. Advanced []

(Prepare documents, edit, use tools and formulas, email, research)

d. Proficient []

(Computing and programming)

SECTION TWO:

I. Training

No.	Statement	SD	D	N	A	SA
1	The organization has provided training to help employees adopt the new ICT systems					
2	I have the necessary skills for new ICT systems					
3	The training provided was adequate to developed skills for more efficiency					

II. Communication

No.	Statement	SD	D	N	A	SA
1	We have received some form of communication regarding changes required in adoption of ICT systems					
2	The information was adequate to prepare staff for change					
3	The organization provided adequate information regarding the adoption of ICT. For instance, communicating the impact of implementing ICT					

III. Change of Organizational Structure




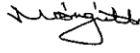

No.	Statement	SD	D	N	A	SA
1	Have new positions been created because of ICT adoption					
2	Is there need for change of roles and responsibilities before ICT can be integrated					
3	Changing the organizational structure help to make the implementation of ICT more effective?					

SECTION THREE:

1. Adoption of ICT System

No.	Statement	SD	D	N	A	SA
1	NHIF has intensified a number of activities through online platform in the recent past					
2	There is increased use of computers at NHIF offices across the country					
3	NHIF has hired more ICT specialists across all branches in the country					

Appendix II: Research Permits

 REPUBLIC OF KENYA	 NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION
Ref No: 964649	Date of Issue: 13/August/2019
RESEARCH LICENSE	
	
<p>This is to Certify that Mr.. Calvin Nyambweke of Africa Nazarene University, has been licensed to conduct research in Nairobi on the topic: EFFECTS OF CHANGE MANAGEMENT ON THE ADOPTION OF ICT SYSTEMS IN PARASTATALS IN KENYA. A CASE STUDY OF THE NATIONAL HOSPITAL INSURANCE FUND.(NHIF) for the period ending : 13/August/2020.</p>	
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Appendix III: Research Approvals and Letters



AFRICA NAZARENE
UNIVERSITY

22nd, July 2019

E-mail: researchwriting.mba.anu@gmail.com

Tel. 0202711213

Our Ref: 16S03EMBA008

The Director,
National Commission for Science,
Technology and Innovation (NACOSTI),
P. O. Box 30623, 00100
Nairobi. Kenya

Dear Sir/Madam:

**RE: RESEARCH AUTHORIZATION FOR: MR. CALVIN NYAMWEMBE
NYAMBWEKE**

Mr. Nyambweke is a postgraduate student of Africa Nazarene University in the Master of Business Administration (MBA) program.

In order to complete his program, Mr. Nyambweke is conducting a research entitled: **“The Effect of Change Management on the Adoption of ICT Systems in Parastatals in Kenya: A Case of the National Hospital Insurance Fund”**

Any assistance offered to him will be highly appreciated.

Yours Faithfully,

<p>AFRICA NAZARENE UNIVERSITY PRINCIPAL NAIROBI CBD CAMPUS</p> <p>22 JUL 2019</p> <p>Sign: <i>Isaac Mwangi</i></p> <p>P. O. Box 53067 - 00200, NAIROBI MR. ISAAC MWANGI</p> <p><u>AG. PRINCIPAL: NAIROBI CBD CAMPUS.</u></p>
