

**FACTORS INFLUENCING IMPLEMENTATION OF ENTERPRISE  
RESOURCE PLANNING IN THE TELECOMMUNICATION INDUSTRY IN  
KENYA: A CASE OF GEONET TECHNOLOGIES LIMITED**

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## **DECLARATION**

### **Student Declaration**

This research project report is my original work and has not been presented for examination in any other University or academic institution.

Sign..... Date.....

**Abraham Kiptalam Bureti**

**L50/7706/2017**

### **Supervisor's Declaration**

This research report has been submitted for examination with my approval as the University Supervisor to the student

Sign..... Date.....

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## **DEDICATION**

This research thesis report is dedicated to my family. They have been a reliable source of Love, encouragement, and undying support in the course of this endeavor and beyond. I am and forever will be very grateful to them. This work is also dedicated to my friends who taught me how to embrace impactful life virtues, values and the power of hard work. They encouraged me to follow my dreams tirelessly and relentlessly.

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## **LIST OF ABBREVIATIONS AND ACRONYMS**

<b>BPR</b>	Business Process Re-engineering
<b>CEO</b>	Chief Executive Officer
<b>CF</b>	Critical Success Factors
<b>CFO</b>	Chief Finance Officer
<b>ERP</b>	Enterprise Resource Planning
<b>IT</b>	Information Technology
<b>ICT</b>	Information Communication Technology
<b>IS</b>	Information System
<b>LTD</b>	Limited
<b>MRP</b>	Materials Resource Planning
<b>NACOTSI</b>	National Commission for Science, Technology and Innovation
<b>SPSS</b>	Statistical Package for Social Sciences

## ABSTRACT

Telecommunication firms all over the world continue to upgrade their capabilities, to remain competitive by continuously striving to improve their own business practices and procedures. Despite the attributes and major advantages provided by ERP systems, the implementation of such systems is not always effective. The purpose of this study was to assess the perceived factors influencing ERP implementation in the Telecommunication Industry in Kenya; in the case of Geonet Technologies Ltd. The objectives of the study were: to establish the influence of top management support on ERP implementation at Geonet Technologies Ltd, to investigate the influence of communication on ERP implementation at Geonet Technologies Ltd, to evaluate the influence of capacity training on ERP implementation and; to find out the influence of culture on ERP implementation at Geonet Technologies Ltd. This study was guided by the Technology Acceptance model (TAM), Technology Organization environment (TOE) and Diffusion of innovation (DOI) Theory. The target population was the entire 531 staffs comprising of the top, middle and lower level cadre of Geonet Company ltd. The study retained a sample size 106 respondents selected through stratified random sampling technique approach. This study used a questionnaire as the only data collection tool for primary data. Data gathered quantitatively from various close-ended questions were classified into various categories and analyzed. The SPSS program was used as the main statistical tool of calculating the expected parameters. Descriptive statistics revolving around charts, graphs as well as the frequency percentages was utilized in measuring the central tendencies such as mean and standard deviation and reporting the data assembled from the findings extracted from the close-ended items. Qualitative primary data was analyzed via thematic analysis. Above the inferential statistics like regression analysis other forms of analysis such as ANOVA and correlation was applied to establish the association between the dependent and the independent variables. The study concludes that that; the top management in the organization is well structured and stipulates well on matters to do with ERP, the management of this firm always have more interest in ERP issues and that the top management in this firm is proactive in letting the staff understand more of the aspects in sustainable ERP strategy as was shown by a mean score of 4.057 and standard deviation of 0.028. The study concludes that; large amount of resources has been appropriated for communication tools, the management of the organization have been keen on optimization of best human capital, knowledge, and expertise towards communication strategy used for ERP related activities as was shown by a mean score of 4.008 and standard deviation of 0.0326. The study found out that majority of the respondents were in agreement that; trainers characteristics are well harmonized with the ERP initiatives that counteract those of other similar competitors, the strategic plan of this organization is well articulated based on the organization's mission, vision and goals that regard ERP implementation, the primary stakeholders have interests that are directly linked to the fortunes of a company and insist of sound training and equipping employees with ERP skills as was shown by a mean score of . 3.898 and standard deviation of 0.019. It was concluded from the study that the staff at Geonet Telecommunications limited were in agreement that; they were happy that the organization management has always played the role of safeguarding its people unwanted cultures, the organizations policy is clear on how to adopt a harmonized culture relative to ERP Initiatives as was shown by a mean score of 3.135 and standard deviation of 0.1047.

# **CHAPTER ONE**

## **INTRODUCTION**

### **1.1 Background of the Study**

Historically telecommunication firms all over the world continue to upgrade their capabilities, to remain competitive by continuously striving to improve their own business practices and procedures. Companies must also increasingly share with their suppliers, distributors, and customers the critical in-house information they once aggressively protected. Functions within the company must upgrade their capability to generate and communicate timely and accurate information. To accomplish these objectives, companies are increasingly turning to information systems (Loizos, 1998).

An in-depth analysis of the evolving adoption of information systems (IS) showed that they have gradually spread to all organizational levels (Raymond & Sylvestre, 2007). All forms of business management practices cut across a large number of users in different managerial levels in the organization. The global development of IS had been necessitated by the different operational units or functions of the enterprise. Every function developed its own applications making various systems coexist in the same organization without any communication between them. This led to the birth of informational fragmentation” (Muscatello, 2003). Similarly, Beretta (2002) termed the phenomena as “functional silos” being a summation of dysfunction, redundancy and waste in utilization of information systems. There was great importance for IS integration in the modern organization which led to the need to manage data on competition, products, markets, customers and technological developments (Al-Mashari et al., 2003). An ERP system, is a form of Information System, is an integrated software package that manages an organization’s operations and resources.

Globally, ERP systems has increasingly being adopted by organizations of any kind and size, in order to avoid technical, obsolete and create sustainable competitive advantages (Al-Mashari et al., 2003; Willis and Willis-Brown, 2002). Nowadays, Enterprise Resource Planning (ERP) systems have been perceived by organizations as a solution to this problem (Davenport, 1998). ERP systems provided organizations with various benefits, such as; substantial tangible benefits, such as inventory reduction, data integration, fewer personnel needed and reduced information technology (IT) costs.

The philosophical view is on the positivity's regarding use of ERP. There are also intangible benefits, such as improved internal processes, better customer service and strategic enhancements (Davenport, 2000; Umble et al., 2003; Al-Mashari et al., 2003). Most prominent firms are using ERP software packages and even more small and midsize companies are on the route of adopting them. For example, there is wide adoption of ERP systems in Europe and North America and a slow adoption by firms in the developing countries (Huang et al., 2004). The extent of adoption of majority of the leading ERP vendors (SAP, Oracle, PeopleSoft, JD Edwards, and Baan) and mainly targeting the big corporate firms with more than 1,000 employees is a true reflection that if well implemented it can be of value to growth and profitability (van Everdingen et al., 2000, Kremers and Dissel, 2000).

In the African continent, however, due to economic growth, famous and infamous small firms in most countries are becoming more popular due to their effectiveness in the implementation of ERP systems (O'Kane, 2002; Davison, 2002; Huang et al., 2004). Most have already adopted ERP systems, and are now enjoying the benefits. Small and medium-sized firms have also discovered and started adopting ERP systems although they point out high implementation costs in comparison to their scarce resources as some of the leading factors affecting adoption. Other factors include lack of the necessary experience for adopting ERP systems effectively (Rao, 2000).

In Kenya, a number of large and mid-sized organizations have implemented ERP solutions and more are expected to follow suit. The majority of adopting organizations that joined the 'ERP bandwagon' presumed that with relative ease they can benefit from the alleged 'best business practices' that are embedded within ERP systems (Kraemers & Dissel, 2000). By integrating all departments and functions of the organizations into a single computer system, it serves the different departmental needs (Botta-Genoulaz and Millet, 2005). Successful firms claim that enterprise resource planning (ERP) systems enhance productivity and working quality by offering integration, standardization and simplification of multiple business transactions. Marnewick and Labuschagne (2005) argue that an ERP system, regarded as an information system (IS) such as ERP to be effectively implemented should be regarded as an integrated business system that surrounds all business functions.

The contextual understanding is that the telecommunication industry suffers adequate challenges on the ERP implementation (Al-Mashari, Al-Mudimigh & Zairi, 2003). Main challenges presented by most scholars revolve around management support, communication, capacity building and perceived culture which will be the interest of this study. Most authors are of the view that if the challenges are well counteracted, then performance would be greatly enhanced in most of similar organizations in Kenya.

The technology acceptance theory states that the attitude of a user toward a system was a major determinant of whether the user will actually use or reject the system. The diffusion innovation theory has been widely used to predict innovation adoption behavior at organization level and individual level (Masrom & Hussein, 2008). According to Rogers (1995) there are five innovation characteristics that influence the adoption rate of innovation namely: relative advantage, compatibility, complexity, tri-ability, and observability.

### **1.1.1 Geonet Technologies Ltd**

Geonet Technologies Ltd was registered and incorporated in Kenya on 21st December, 2007 its Core business being a Telecommunications Solution Provider. Geonet Technologies Ltd aims at providing a wide range of advanced telecommunications solutions to leading operators and vendors in East and Central Africa. Currently it provides turnkey solutions to major service providers in Kenya. The philosophies driving the company are based on: Simplicity, Efficiency, Speed, Flexibility and Quality. Geonet claims to have professional and experienced staff in the Telkom, Electrical & Construction industries as well as being fully equipped with Machinery, tools, equipment and instruments to successfully execute customer works (Financial Report, 2019).

### **1.2 Statement of the Problem**

Implementation of the ERP systems within organizations plays critical role in finance functions, human resource functions, supply chain management functions and project management functions of organization because it provides a platform for enhance deficiency and effectiveness in organization's productivity. ERP systems mainly indicated as integrated software applications govern different departmental functions such as finance and human resource. Despite the attributes and major advantages

provided by ERP systems, the implementation of such systems is not always effective. Most enterprises are not able to fully justify their investments in ERP software, since the bulk of ERP benefits remain hidden.

In their survey Marnewick and Labuschagne (2005) reported that 25 percent of ERP installations exceed the initial cost and about 20-percent cannot be completed. Moreover, ERP systems often fail to meet organizational goals soon after their implementation. The cause of the general disappointment regarding ERP system effectiveness lies in a number of reasons, including a misconception about the system's potential. This has continued to make individuals; companies and managers face difficulties in comprehending the full spectrum of capabilities and attributes of ERP systems, due to the system's complicated nature. In Kenya, for instance in June 2006 Uchumi supermarket chain closed down admitting it was insolvent. The over ambitious expansion strategy and the poor installation of the ERP system were cited by expert as some of the reasons which contributed to the insolvency. The Uchumi supermarket experience was an example that there was an urgent need for understanding ERP implementation in less Developed countries, and in Kenya in particular because this system was still in their early stages of development.

Only a few studies have been done locally. For example, a local research conducted by Nyagah (2006) asserted that teamwork and composition in the ERP implementer-vendor consultant partnership is a key factor influencing ERP implementation success. The researcher also found out that good communication and coordination between implementation partners is essential. However, the researcher did not focus on a particular industry but based his study on the views of ERP consultants in Kenya. Mbogori (2010) argues that financial support is a major factor affecting implementation of ERP. The intent of this study was to assess the critical factors influencing ERP implementation in the Telecommunication Industry in Kenya; in the case of Geonet Technologies Ltd.

### **1.3 Purpose of the Study**

The purpose of this study was to assess the factors influencing implementation of ERP in the Telecommunication Industry in Kenya; in the case of Geonet Technologies Ltd.

### **1.3.1 Objectives of the Study**

This study was guided by the following specific objectives;

- i. To establish the influence of top management support on implementation of ERP at Geonet Technologies Ltd
- ii. To investigate the influence of communication on implementation of ERP at Geonet Technologies Ltd
- iii. To evaluate the influence of capacity training on implementation of ERP at Geonet Technologies Ltd
- iv. To find out the influence of culture on implementation of ERP at Geonet Technologies Ltd

### **1.4 Research Questions**

This study was guided by the following research questions;

- i. What is the influence of top management support on implementation of ERP at Geonet Technologies Ltd?
- ii. To what extent does communication influence the effectiveness on implementation of ERP at Geonet Technologies Ltd?
- iii. What is the influence of capacity training on implementation of ERP at Geonet Technologies Ltd?
- iv. To what extent is the influence of culture on implementation of ERP at Geonet Technologies Ltd?

### **1.5 Research Hypothesis (null)**

This study was based on the research hypothesis below;

**H<sub>01</sub>:** There is no positive significant relationship between top management support and implementation of ERP at Geonet Technologies Ltd

**H<sub>02</sub>:** There is no positive significant relationship between communication and implementation of ERP at Geonet Technologies Ltd

**H<sub>03</sub>:** There is no positive significant relationship between capacity training and implementation of ERP at Geonet Technologies Ltd

**H<sub>04</sub>:** There is no positive significant relationship between perceived culture and implementation of ERP at Geonet Technologies Ltd

## **1.6 Significance of the Study**

This study may be significant to the following:

This research will help the Geonet Technologies Ltd managers or even other telecommunication managers from other similar firms in the process of determining a choice to own a decent home. In understanding the critical factors influencing ERP implementation in they will to act accordingly to such matters in an effort to counteract related challenges.

This study will be significant to the Government of Kenya and the Vision 2030. The government has a major role in ensuring the operations of the telecommunication firms in Kenya. This research will add insight by outlining the government's critical role in developing policies that regulate and promote telecommunication companies and their allies.

The findings to be obtained from this study will play a significant role to researchers and scholars as they will be added to the existing set of knowledge and information related to the uptake of low cost housing. They will also necessitate further research in the same field as well as in the related research fields especially in the finance sector among others. These findings will set the reference point on the literature related to implementation of ERP in the telecommunication industry in Kenya and beyond.

## **1.7 Limitations of the Study**

This study may face the following challenges towards the realization of its results. The study is likely to encounter some hesitation from some respondents hence making them not disclose all information concerning the raising issues. The researcher in this case informed the respondents that the information and other related responses they offered treated with utmost confidentiality and that the study is meant for academic purposes only. Also, through ethical means for example the use of an authorized letter from National Commission for Science, Technology and Innovation (NACOSTI) and an introduction letter from the Department of Extramural Studies, University of Nairobi. With these, the researcher explained to the participants on the reason of



undertaking the research mainly for academic purposes only and not for any official use.

### **1.8 Delimitations of the Study**

The scope of this study was to assess the critical factors influencing ERP implementation in the Telecommunication Industry in Kenya; in the case of Geonet Technologies Ltd. The target population was the entire 531 staffs comprising of the top, middle and lower level cadre of Geonet Company Ltd. This is based on the fact that these are the ones who understand well on the issues regarding ERP Adoption and implementation in the organization especially given that they are recruited and well spread to ensure the IS systems are in control. These are the ones who were supplied with research tools.

### **1.8 Basic Assumptions of the Study**

This study was based on the following assumptions that the target population would not change at the time of data collection, that the participants targeted by the study are well aware of the issues related to ERP implementation at Geonet Technologies Ltd and that; the participants were willing and honest enough to give sincere information about issues about ERP implementation at Geonet Technologies Ltd.

### **1.9 Definition of Significant Terms used in the Study**

**Capacity Building:** This refer to the training of the employees using Enterprise Resource Planning System.

**Communication:** This refers to the passing of information across the various functions and levels of an organization

**Enterprise Resource Planning (ERP):** This refer to the Enterprise-wide information system that supports all of an institution's processes and operations including finance, human resources, procurement, projects management, and so on. In other words, the goal of ERP is to have one integrated system for the entire organization.

**Government Policies:** This refers to the rules and regulations passed by the government

**Implementation of ERP** - This refer to the Act of carrying out or physical realization of some aspects set by the management concerning the enterprise resource planning tool.

**Organization culture:** Refers to a pattern of shared basic assumptions that a group learns as it solves its problems of external adaptation and internal integration that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems.

**Software:** Refers to computer instructions or data

**Top Management Support:** Refers to the dedication illustrated by the leaders in an organization.

### **1.10 Organization of the study**

This study investigated the perceived factors influencing ERP implementation in the Telecommunication Industry in Kenya; in the case of GEONET Technologies Ltd. Chapter one provides the background and motivations towards the undertaking of the study. Chapter two presented the literature review organized as per the proposed research objectives themes, theoretical framework for the study, conceptual framework that explained the relationships of variables. Chapter three presented the research methodology that was adopted in the proposed study. This covered the research design, target population, sampling size and sampling procedures, data collection instruments, data analysis techniques, ethical consideration and operationalization of variables. Chapter four presents data analysis, presentation and interpretation while chapter five provided the summary of findings, conclusions and recommendations.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter presented the literature related to Enterprise Resource Planning Systems implementation and related issues as reviewed and reported, or argued by other authors and academicians. The main sections provided were; the concept of ERP systems, theoretical review, empirical review and the conceptual framework of the study.

#### **2.2 Implementation of Enterprise Resource Planning System (ERP) in the Telecommunication Industry in Kenya**

Mottaghi and Akhtardanesh (2010) refers to Enterprise Resource Planning (ERP) as a software system for business management encompassing modules supporting functional areas such as planning, manufacturing, sales, marketing, distribution, accounting, financial, human resource, management, project management, inventory management, service and maintenance, transportation and e-business. ERP systems in many organizations are described as a pillar of business intelligence as it offers seamless integration of processes across functional areas with better-quality workflow, standardization of several business practices and access to real-time upto-date data. As a result, companies invest large sums of money on ERP packages and their implementation process.

Beheshti (2006) indicates that Enterprise Resource Planning (ERP) is “a set of business applications or modules, which links various business units of an organization such as financial, accounting, manufacturing, and human resources into a tightly integrated single system with a common platform for flow of information across the entire business.” Enterprise Resource Planning systems are very large software programs that control every aspect of a company from sales to accounting to supply chain to human resources. Historically, companies have been divided by functional areas, such as marketing and sales or accounting and finance. However, in order to react to the demands of customers in a rapidly changing marketplace, work from must flow quickly and accurately between functional areas (Monk & Wagner 2006).

Functional area legacy systems “represent one of the heaviest drags on business productivity” (Davenport, 1998) and have been increasingly replaced by a single ERP system, via a single central database and common reporting tools. Each functional area within an organization is integrated by the software. This cross-functionality promotes business integration with the ability to view real-time results (Ranganathan & Brown 2006). ERP systems affect a company’s business processes, make them more efficient, and in effect, automate those (Themistocleous, 2006). These large systems change the employees’ jobs and their way of thinking from a functional approach to one of a business process approach (Wieder, Booth et al., 2006). A classic example of a business process is order-to-cash, where a product is ordered, the product is either manufactured (or located in inventory), then shipped, an invoice sent and a bill paid. In a case study surveying 49 senior managers involved in ERP, more efficient business processes were claimed as a benefit (Chang, 2006).

There are numerous other benefits to using ERP systems that are widely touted throughout the literature, such as integrating all of a company’s systems on one network, with one software package giving the benefit of reduced duplication of systems and eliminating costly middleware (Chang & Ranganathan, 2006). Many companies have duplicate systems not only from functional area departmental systems but also from mergers and acquisitions. By using a common database with a cross-functional approach, managers have a single view of the data departments no longer own information and become more successful (McCombs, 2007). Different departments are linked; data is keyed in only once, avoiding typing errors, thus integrating the entire organization (Chang, 2006). In reality, few large companies have only one enormous ERP system. In addition, the holistic view of an entire organization provided through an ERP system can give upper management much needed control (Monk, 2006).

### **2.3 Top Management Support and Enterprise Resource Planning (ERP) Implementation**

Top management support describes the extent to which executive managers of the adopting firm provide the attention, resources, and authority required for ERP implementation (Wang and Chen, 2006). However competent a consultant may be, ERP implementation will not run smoothly unless the members of the client

organization (top management and users) are committed to the adoption and the use of the ERP system (Wang and Chen, 2006).

Top management support is a prerequisite for the successful ERP system implementation. Top managers supervise the whole implementation procedure, enable resource distribution, and support conflict management (Wang and Chen, 2006). Moreover, top management has the responsibility to align the new ERP system with the current business practices and prepare the employees for the change brought by the new technology. When top management works closely with various ERP users in the direction of the successful implementation of the ERP system, the communication between business groups is being enhanced and conflict resolution becomes attainable (Thong et al., 2016).

Top management support was supposed by many articles to be one of the top critical factors in a successful ERP implementation, in other words, obtaining support from top management in the organization is extremely critical (Finney & Corbett, 2007; Zhang et al., 2005). Top management support, has been emphasized, as a crucial factor in successful ERP implementation by many (Zhang et al., 2005, Ngai et al. 2008) claimed that top management support, plays a significant role in the ERP implementation success because ERP are normally large-scale and require extensive resources. Al-Mashari et al., (2003) suggested that top management support should not stop at the initiation and facilitation stage, but it should continue throughout the entire ERP implementation process.

According to Zhang et al. (2005), top management support has two major aspects in ERP implementation projects: providing the necessary resources and providing leadership. The responsibilities of top management in ERP implementation include communicating the company strategy to all members of the organization, developing an understanding of the restrictions and abilities, demonstrating commitment, and establishing rational objectives for the ERP implementation (Umble et al., 2003). Many studies provided evidences that display how top management support is essential during the entire ERP implementation process and how it remained critical in order to reap the benefits (Bradford and Florin, 2003). Willcocks and Sykes (2000) noted that senior-level sponsorship, championship, support, and participation are one aspect of organizational factor that influences ERP success.

Implementing ERP does not only involve changes in software systems usage rather it involves the repositioning of a company and transformation of all business practices. Therefore, top management should publicly, explicitly, and sincerely show their support (financial and non-financial) to emphasize the precedence of the ERP implementation (Somers and Nelson, 2004). The support, commitment, authority and leadership from top management are important to secure the employee acceptance of the changes brought by the project (Aladwani, 2001) and is related closely to the success of the whole project (Ifinedo, 2008). The support and commitment from top management are part of the social factors that can improve the ERP system usage of employees in the company, then achieve a more successful implementation (Chang, Cheung, Cheng, & Yeung, 2008), because the top management influences can facilitate the user acceptance of new system by broadcasting the system benefits to the employees (Aladwani, 2001).

Another explanation is that the commitment from top management will percolate down to the whole organization and ultimately result in an overall organizational commitment (Bingi et al., 1999). Besides, Nah et al. (2001) suggested the top management should set policies on new systems usage to guarantee its spread throughout the organization. The top management should actively move the project forward. In the beginning, top managers need to make the whole strategic business plan and goals, and initiate the project (Nah et al., 2001; Shanks et al., 2000). The support and commitment from top management should cover the implementation phase, to monitor and control the project progress (Bingi et al., 1999), and guarantee the sufficiency of ongoing human, time and other resources (Shanks et al., 2000). The top leaderships should also continuously support and pay attention to the project in post-implementation phases (Ifinedo, 2008). The support of the top management also includes their involvement in the project, which is essential in the implementation as asserted by Akkermans and van Helden (2002). In their case study, the project met crisis because of the lack of collaboration between different parties and different departments. Later, they solved this crisis successfully.

One of the critical solutions they applied was the active involvement of senior management: in the workshop that employees from multi-department sorted out the BPs, if there was still no result after 5 to 10 minutes of discussion, the issue would be

flagged and handed over to the senior management to make decision. Nevertheless, it still took much more time for the management to solve these issues than they expected. Having experienced these activities, the management became more aware of the project (Akkermans & van Helden, 2002). However, in terms of authority control, it should be noticed that a centralized authority should be built for the project instead of multi-authorities' condition, which may cause complex issues and conflicts among commands requirements by different positions of leaders (Sumner, 1999). Successful ERP implementation depends on management to prepare for challenges that might be faced (Motwani, Mirchandani, Madan & Gunasekaran, 2002), as well as senior management who are involved in overall strategy of the company and are not familiar with technical aspects (Yusuf, Gunasekaran & Abthorpe, 2004). Also, top management commitment and support leads to overall organizational commitment across an organization. It results in the successful ERP implementation (Umble & Umble, 2002).

Top management support is vital for the success of IT projects in organizations because of its influence and role in providing financial resources and relevant guidelines (Dong, 2001), and researchers have found a positive relationship between top management support and IS effectiveness or success (Thong et al., 1996). Many organizations purportedly adopt ERP to meet their organizational objectives: goals and mission (Bingi et al., 1999). However, Deloitte Consulting (2000) and Davenport (2000) note that the high failure rates of ERP project in organizations can be attributed to poorly defined goals and mission with regard to their ERP acquisitions. Researchers (Willcocks & Sykes, 2000) have stressed that an ERP is more than just another IT system for the adopting firm, and there is a need to have strategic clarity before embarking on its adoption. With respect to organizational size, Mabert et al., (2003) note that ERP benefits differ according to firm size. Sedera et al., (2003c), investigating ERP systems success in public organizations found support for the claims in Mabert et al. study, larger firms experience more ERP benefits than smaller-sized organizations.

Top management support and commitment is needed throughout the ERP adoption process because the project must receive approval and align with strategic business goals. Top managers must commit themselves to involve in the project for allocating

the required personnel resource for implementation and giving appropriate time to finish the job. A share vision of the company and the role of the new system and structures should be communicated between managers and employees. Moreover, top managers should be the persons to harmonize any conflicts between internal and external parties (Nah et al., 2001).

Top management should not entrust their duties of ERP implementation to their technological departments because it is more than a technological challenge. Project planning, forming the project team, choosing the ERP package and the ERP implementer, the project sponsor and supervisor are among the duties that can only be done by top managers. The following characteristics for this factor can be summarized: Highly support and approval from top management is required during the adoption process. Top management should not entrust the tasks in the ERP implementation. Top managers must commit to involve in the project and allocate the required personnel resources. Top managers should be the persons to harmonize any 19 conflicts between internal and external team members. The new company's structure and roles should be communicated to employees (Nah et al., 2001).

#### **2.4 Communication and Enterprise Resource Planning (ERP) Implementation**

Effective communication is a strong foundation of a trustworthy relationship between external consultants and organizational members (Hong & Kim, 2012). The more consultants and users understand each other, the more effective the communication becomes during the consulting process. Insufficient communication of users' needs, goals and aspirations to the consultants may undermine the implementation of the ERP system.

Strong communication within the entire organization during the implementation process increases success for ERP implementation. It allows the organization's stakeholders to understand the goal and the expected benefits of the project as well as to share the progress of the project. An "open information policy" protects the various communication failures for the project (Al-Mashari, Al-Mudimigh & Zairi, 2003).

For successful implementation of ERP systems, communication across the various functions and levels of a company is needed. Since the communication assists the ERP adopting company to minimize user resistance, it is critical from the initiation to



the system acceptance phases (Somers and Nelson, 2004). Esteves-Sousa and Pastor-Collado (2000) stated that both internal communication among ERP project team members and outward communication to the entire company are very essential. Communication among different levels and functions of ERP implementation projects needs a communication plan to guarantee that open communication happens in the whole organization and with customers and suppliers (Kumar et al., 2003).

Muscatello and Chen (2008) argued that suitable communication plans should be set up to keep senior management informed on the subject of ERP project impact, challenges, risks, and progress. The communication should be conducted during ERP steering committee meetings and usual status reporting. Holland and Light (1999) suggested employing communication tools such as newsletters, monthly bulletins or weekly meetings to keep users informed about Enterprise Resource Planning implementation project progress.

Communication is one of most challenging and difficult tasks in any ERP implementation project. Nah et al., (2007) argued that it is important that employees are informed about the scope, objectives, activities and updates in advance to make ERP implementation more efficient. In enterprise system implementations, communication among stakeholders to report project progress and user input and communicating project expectations to all stakeholders are important (Sedera and Dey, 2006). According to Nah and Delgado (2006), communication should start early, be consistent and continuous, and include an overview of the system, the reasons for implementing it, and a vision on how the business will change and how the system will support these. The effective communication CSF in an ERP implementation includes the communication between departments in the organization (Al-Mashari, Al-Mudimigh, & Zairi, 2003) and between the implementation parties.

Chang et al. (2008) also suggested, close cooperation between different parties among the project and different departments within the company can effectively increase employees' system using, as the employees can receive expectations and pressures from those parties whom they are interacting with in daily work. For the interdepartmental communication, Stefanou (1999) argued that creating collaborations among the departments and a close work relationship between them can be effective for some technical issue resolutions, and can further facilitate the overall project

success. For the way to achieve such communication, the researcher considered the trust and willingness about information sharing is a matter of the organizational culture that cannot be resolved by any form of technologically support (Stefanou, 1999).

On the other hand, among the communication between implementation parties in the project, a case study by Sumner (1999) indicated the project team should let everyone in the enterprise be aware of the meaning of the project, as well as the scope and schedule of it (Sumner, 1999). For the difficult and tough issues that existed in one party or between a few parties in the preparation phase of the project, they should be addressed directly and in time, to prevent more issues emerged and even harder to resolved in later phases (Sumner, 1999).

Despite the meaning of communicating among social groups, the effective communication can also represent broadcasting the meanings and benefits of ERP adoption to employees, as suggested by Aladwani (2001). The researcher proposed that communication is an effective strategy to affect users' attitudes toward the new system and further improve the situation of user resistance. The researcher also believed the awareness of knowledge about ERP and how it operates can build anticipation and virtuous expectation for employees. To achieve this, management can play the role of explaining how ERP system will work, whereas reputable individuals and opinion leaders are also effective for spreading the spirit of supporting the project activities (Aladwani, 2001). Under the setting of the project team members are representatives from business functional departments, Akkermans and van Helden (2002) concluded that the interdepartmental communication and collaboration is the core process for ERP project progress, while the key stakeholders (top management, project champion, and ERP vendor) were identified to be the root causes for the performance of this core process.

## **2.5 Capacity Building and Enterprise Resource Planning (ERP) Implementation**

Capacity building has been recognized an important requirement for ERP implementation (Bajwa et al., 2004). Due to the complexity of the integrated ERP system, end user training is essential for a robust understanding of how the system works and how to use it. Consequently, appropriate end user education and training will maximize ERP benefits and increase user satisfaction. According to the research

that was made by Bradley & Lee (2007) training is very important for any enterprise wishing to implement an ERP system. Training is not given enough attention and importance within companies, and frequently companies training practices and even their training budgets are frequently lower than what they should be (Bradley & Lee, 2007). In addition, to understand the new business process, and how the system is changing the whole work procedures, training is required alongside onsite support for the managers and the employees during the implementation phase (nah et al., 2001).

Bingi et al. (1999) points to the importance and the massive challenge that training plays in the implementation phase. The authors added that the employees nowadays have more responsibilities and more decision making power due to their use of ERP systems, a failure to correctly train them to use the tool is a critical mistake (Bingi et al., 1999). Moreover, the studies have shown that a lack of training make 30 to 40% of the workers unable to correctly handle demands on the new ERP system (Bingi et al., 1999). The training difficulty especially to employees who are reluctant, afraid or inexperienced in computers is a challenge, and knowledge transfer need to be performed in an efficient and continuous way due to the high complexity of the ERP systems (Bingi et al., 1999).

Training satisfaction play a major role in determining whether an ERP system will be popular or not, and then whether the employees are comfortable working with it (Bradley & Lee, 2007). Bradley & Lee (2007) proved that a good training is essential for any ERP implementation whether it's in a company or even in a school or a university, they also added that the more employees are satisfied from the training they had, the more usefulness they will display (usefulness is defined by the authors as the perception that an employee has on the effectiveness, efficiently and ease of use of the ERP system). As mentioned earlier ERP is a complex system thus adequate training and education must be provided to enable the users to use them effectively and efficiently (Bradley, 2008).

Training and education would further enhance the users' level of knowledge and proficiency, thus increasing individual performance and subsequently organizational performance. Nah et al. (2003) stated that sufficient training can increase the probability of ERP system implementation success, while the lack of appropriate training can hinder the implementation. Adequate training and education may also

assist the organization to build positive feelings towards the system. More important it may help ERP users to adjust to the organizational change-taking place with the implementation of the system. In addition, training increases ease of use and reduces user resistance, which, in turn, enhances the likelihood of ERP systems use and success (Bradley, 2008). Implementing an ERP system without adequate training may possibly have drastic consequences (Somers and Nelson, 2004).

The full benefits of ERP cannot be realized until end users are using the new system properly. To make end user training successful, the training should start early, preferably well before the implementation begins. Executives often dramatically underestimate the level of education and training necessary to implement an ERP system as well as the associated costs. Top management must be fully committed to spend adequate money on education and end user training and incorporate it as part of the ERP budget. It has been suggested that reserving 10–15% of the total ERP implementation budget for training will give an organization an 80% chance of implementation success (McCaskey & Okrent, 1999). All too often, employees are expected to be able to effectively use the new system based only on education and training. Yet, much of the learning process comes from hands-on use under normal operating conditions. Thus, a designated individual (preferably the project leader) should maintain ongoing contact with all system users and monitor the use of, and problems with, the new system.

There is also a need for post-implementation training. Periodic meetings of system users can help identify problems with the system and encourage the exchange of information gained through experience and increasing familiarity with the system (Krupp, 1998). User training is aimed to achieve a solid understanding of the system to apply their own knowledge of BP into using of the system (Umble et al., 2003). The ERP cannot play full power if the users are using it improperly (Umble et al., 2003). Also, the system knowledge is obtained through the practical use of it, therefore Umble et al. (2003) suggested the post-implementation training is needed.

User training should be conducted in order to reduce the degree of user resistance from ERP using (Sumner, 1999), in such an involuntary situation of using (Chang et al., 2008; Zhang et al., 2005) that in the organization implemented ERP system, the users would have no choice but only use the system, except quit the job. The project

team should make a suitable training plan for users in order to let them understand BPs behind the ERP system (Al-Mashari et al., 2003; Gupta, 2000). The employee work content changes due to the implementation should also be noticed during user training (Finney & Corbett, 2007). Additionally, Sumner (1999) suggested reporting function should be emphasized during user training. Some organizations found that efforts put in user training can have a higher payback than expected, as the internal staff immersed in system environment can efficiently enhance their system-related knowledge accumulation (Sumner, 2000).

## **2.6 Culture and Enterprise Resource Planning (ERP) Implementation**

The environment in which an ERP system is developed, selected, implemented and used constitutes a “social context”. This ecosystem includes several stakeholders, from the developers of the system, to vendors, the consultants, the project team, and the eventual users. Each one of these holds a certain cultural assumption towards the ERP implementation and use process (Rasmy et al., 2005). Particularly, the developers’ and consultants’ cultural assumptions are embedded in the very roots of the software itself. If cultures of producers and users are different it results in a cultural clash (Otieno, 2010). The culture of an organization is defined as “a pattern of shared basic assumptions that a group learns as it solves its problems of external adaptation and internal integration, that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems” (Schein, 2000).

The implementation of ERP systems always mandate change in business process and culture. Culture plays an important role during implementation of ERP systems and consequently its success (Shah et al., 2011). It enforces rules, values and practices at the organizational and individual levels (Rasmy et al., 2005). In China case, Rabaai (2009) revealed that an ERP implementation was unsuccessful due to national cultural factors. Also, a study conducted by Allen and Kern (2001) on ERP implementation in Singapore showed a significant misfit in terms of data format, procedures, and legal requirements.

The cultural assumptions within ERP systems and the whole notion of cultural universalism are challenged. ERP implementation adopted successfully in one culture, nation, or region, may be a disastrous failure in another. Thus, adopting an ERP that

has been invented and developed in one culture, country, or region to another diverse culture involves more than simply providing information on the technical features of adopting the software. Several culture factors could affect the implementation of ERP systems and below are some of the factors that have been identified. The occurrence of globalization means that globally used technologies are not only to be approved but also adapted into local cultures and to their prevailing norms. There is clear potential for a cultural clash when these do not fit the adopting culture's norms. Clash level of the culture embedded in the ERP package with the company's organizational culture has been identified by Zhou-Sivunen (2006). According to Molla and Loukis (2005), ERP success depends on congruence between the host culture and the ERP system culture.

Implementation of an ERP system in a global environment can be fragmented due to the internal enterprise culture, which is representative of societal culture. The way ERP systems are perceived, treated, and integrated within the business plays a critical role in the success or failure of the implementation. When a Western developed ERP system is implemented in a country where the culture differs greatly from that of the developer, implementation may require localization in order to be successful. In doing so, strategic benefits of ERP systems may be reduced (Srivastava & Gips, 2009). Also Gips (2009) particularly pointed out culture mismatch was the case in China due to the nationalistic culture of business.

Rasmy et al., (2005) also confirm that ERP implementation becomes more challenging in Egyptian context where national and organizational culture was mismatched. These factors can result in undesirable design reality gaps, which tend to lead to underperforming systems. Tools transferred from one country to a specific enterprise abroad suffer a double-layered acculturation: the technology is confronted with a foreign national and alien corporate culture (Motwani et al., 2007). Unlike traditional software development approach, which promotes building systems from scratch, ERP encapsulates reusable best business practices unlike traditional software development approach, which promotes building systems from scratch; ERP captures reusable best business practices. All business units at different countries had their own way of doing 22 things because of different business processes and local requirements generated by national and local differences (Otieno, 2010). Thus, the initial plan had

to be transformed by allowing localized solutions and decentralized ERP implementations, in order to escape the conflicts (Zhou-Sivunen, 2006). ERP viewpoint is process-based, rather than function-based therefore instigating disruptive organizational changes (Nordheim, 2009).

ERP technology is also known for imposing rigid norms of workflows and particular practices upon workplaces and it is well noted that ERP demands on changes to organizational culture (Rabaa'i, 2009). When national or cultural borders are crossed, implementation in a global environment takes on a new dimension. Countries with long histories of highly traditional culture tend to have societal culture embedded in the modern organizational culture, which impacts business decision-making (Srivastava & Gips, 2009). Chinese business culture views change differently than Western culture, placing great value on the past and are reluctant to change, which limits process innovation. Most Chinese users have a preference to use the system to automate current processes rather than change processes to fit in the ERP system.

According to Deng's report cited in (Liu et al., 2011) cultural barriers to change in the Chinese business take place where even with ERP in place, most companies still prefer manual processes or old systems. He noted restructuring a company for ERP implementation was painful because of inflexible change management and top management preferred to keep old control methods (Liu et al., 2011; Arunthari, 2005). This often required major customization for the Western ERP vendor if the system was to fit into the business culture (Srivastava and Gips, 2009; ZhouSivunen, 2006). ERPs have also proved challenging to implement even in Western organizations, often due to an underestimated requirement for change management and the repositioning of roles and their meaning for actors (Boersma and Kingma, 2005). Countries in Sub-Saharan Africa for instance that has diverse value and belief system inevitably need substantially longer time for the adaptation and acceptance of such a major organizational change.

## **2.7 Theoretical Review**

This study was guided by the Technology Acceptance model (TAM), Technology Organization environment (TOE) and Diffusion of innovation (DOI) Theory.

### **2.7.1 Technology Acceptance Model**

In 1985 Fred Davis proposed the Technology Acceptance Model (Davis, 1985). He proposed that system use is a response that can be explained or predicted by user motivation, which in turn is directly influenced by an external stimulus consisting of the actual system's features and capabilities. Davis further refined his conceptual model and suggested that user motivation can be explained by three factors: Perceived Ease of Use, Perceived Usefulness, and Attitude towards Using the System. He hypothesized that the attitude of a user toward a system was a major determinant of whether the user will actually use or reject the system. The attitude of the user, in turn was considered to be influenced by two major beliefs: perceived usefulness and perceived ease of use, with perceived ease of use having a direct influence on perceived usefulness (Chuttur, 2009).

### **2.7.2 Diffusion of Innovation Theory (DOI)**

Diffusion of Innovation Theory (DOI) which is also known as Innovation Diffusion Theory (IDT) has been widely used to predict innovation adoption behaviour at organization level and individual level (Masrom & Hussein, 2008). According to Rogers (1995), there are five innovation characteristics that influence the adoption rate of innovation namely: relative advantage, compatibility, complexity, triability, and observability. Relative advantage is the degree to which an innovation is perceived as better than the idea it supersedes by a particular group of users, measured in terms that matter to those users, like economic advantage, social prestige, convenience, or satisfaction.

The greater the perceived relative advantage of an innovation, the more rapid its rate of adoption is likely to be. Compatibility is the degree to which an innovation is perceived as being consistent with the values, past experiences, and needs of potential adopters. An idea that is incompatible with their values, norms or practices will not be adopted as rapidly as an innovation that is compatible. Complexity is the degree to which an innovation is perceived as difficult to understand and use. New ideas that are simpler to understand are adopted more rapidly than innovations that require the adopter to develop new skills and understandings. Triability is the degree to which an innovation can be experimented with on a limited basis. An innovation that is triable represents less uncertainty to the individual who is considering it. Observability is the

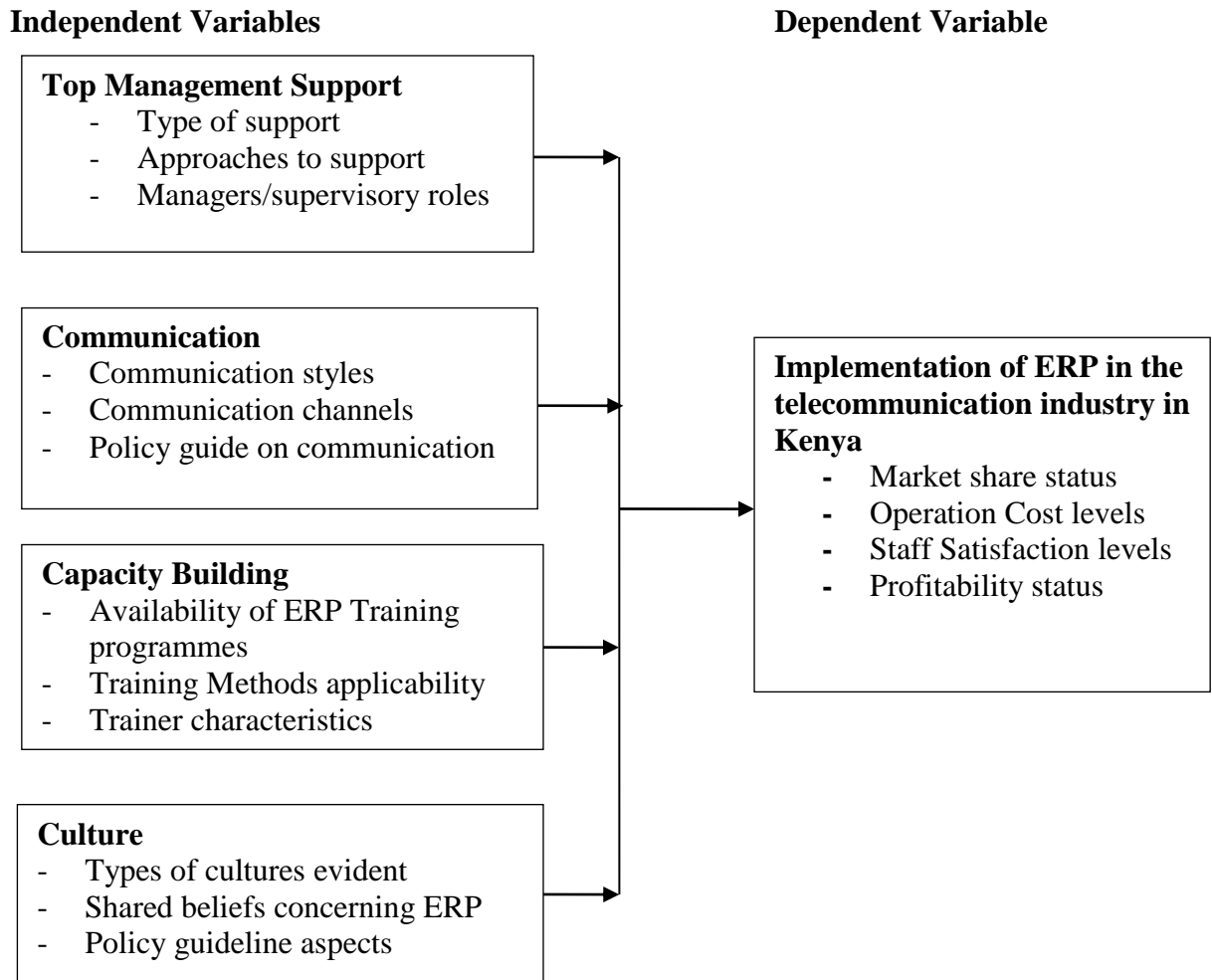


ease with which individuals see the results of an innovation. The easier it is for individuals and also stimulates peer discussion of a new idea, as friends of an adopter often request information about it.

According to Rogers (1995), the decision on technology adoption is made through a process which decision maker (individual or group of top management) involves from the knowledge that they have about a technology, to establishing the attitude behavior toward the technology. The process then helps the decision maker to decide whether to adopt, implement or reject or the new idea, and finally to approve this decision.

## **2.8 Conceptual Framework**

The conceptual framework below was based on the researchers understanding which speculates that there is a relationship between the dependent variable (Implementation of ERP in the telecommunication industry in Kenya) and the independent variables (top management support, communication effectiveness, capacity building and culture). According to the study expectations, an efficient top management support will lead to a positive implementation of ERP. A situation where best communication strategies are used as well as the best platforms and use of right personnel in communication, the implementation of ERP will be guaranteed and vice-versa. If an organization has the best programmes on ERP and continuously trains its employees, then there will be an effective ERP implementation. Finally, there must be a harmonized culture and not a conflicting one to ensure effective and efficient ERP implementation.



**Figure 1: Conceptual Framework**  
**Source: Researcher, 2019**

## 2.9 Research Knowledge Gap

The research established that there is a link between ERP implementation and some notable factors not necessarily studied by most of the past authors. There is little approach towards defining ERP for it seems to vary to different organizations. For example, Mottaghi and Akhtardanesh (2010) refers to Enterprise Resource Planning (ERP) as a software system for business management encompassing modules supporting functional areas such as planning, manufacturing, sales, marketing, distribution, accounting, financial, human resource, management, project management, inventory management, service and maintenance, transportation and e-business which this study has adopted. Therefore, to address the knowledge gap, this study will harmoniously consider Enterprise Resource Planning (ERP) as “a set of business applications or modules which must be adopted to improve the performance of Geonet Ltd.

## **2.10 Summary of the Literature Reviewed**

In summary, most of the authors agree that the implementation of ERP is normally hampered by challenges that are both external and internal relative to management, communication approaches, capacity building and perceived culture/cultures. In fact, Bingi et al. (1999) points to the importance and the massive challenge that training plays in the implementation phase. The authors added that the employees nowadays have more responsibilities and more decision making power due to their use of ERP systems. Rabaai (2009) revealed that an ERP implementation was unsuccessful due to national cultural factors. And lastly, Allen and Kern (2001) on ERP implementation in Singapore showed a significant misfit in terms of data format, procedures, and legal requirements. Hence this study only considered the critical factors in Kenya influencing implementation of ERP.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter presented the methodology that was used for the study. The main sections in the chapter are; the research design, target population, the sample size and sampling procedures used in the study. Pilot testing of the research instruments, data collection procedures and data analysis techniques are also outlined in the study ethical considerations observed in the study were also outlined.

#### **3.2 Research Design**

This study used descriptive research design approach. Burns and Grove (2003:195) define a research design as “a blueprint for conducting a study with maximum control over factors that may interfere with the validity of the findings”. Parahoo (1997:142) describes a research design as “a plan that describes how, when and where data are to be collected and analyzed”. Polit et al (2001:167) define a research design as “the researcher’s overall for answering the research question or testing the research hypothesis”. The design helped the researcher to get different but complementary data on the same topic (Morse 1991) to best understand the research problem. It helped make findings rich and comprehensive on assessment of the factors influencing implementation of ERP in the Telecommunication Industry in Kenya; in the case of Geonet Technologies Ltd. The data was integrated at various stages of the inquiry. It helped the researcher best understand the research problem and relate quantitative results to the raised research questions (Creswell, 2003).

#### **3.3 Target Population**

According to Mugenda and Mugenda (1999) the target population is the entire group researcher is interested in or the group about which the researcher wishes in drawing conclusions. The target population comprised of all the staff working for the Geonet Company Limited. Specifically, the study targeted the 531 (top, middle and lower level staff) respectively, responsible for the today to day operations in the departments responsible for the implementation of ERP systems. These are the ones who were supplied with the research instruments. The distribution was as follows:

**Table 3.1: Target Population**

<b>Category</b>	<b>Target population</b>
Top (CEO, CFO)	23
Middle level	87
Lower level staff	421
<b>Total</b>	<b>531</b>

**Source: HRM Records, Geonet Technologies Ltd (2019)**

### 3.4 Sample Size and Sampling Procedures

A sample is a set of respondents obtained from a targeted population with an aim of establishing the features of the population Siegel (2013). It refers to a section of the population chosen in order to have a clear representation of the whole population. Sampling is a procedure or technique applied while selecting a sample of the population that is to participate in the research study (Ogula, 2008). Stratified random sampling is a technique wherein the assembled sample has the same proportions of individuals as the entire population with respect to known characteristics, traits or focused phenomenon (Cooper & Schindler, 2014). This study used simple random sampling technique to select 20% of the respondents in each of the categories as stated in the target population section. The sample size was 106 possible respondents as shown in the distribution below;

**Table 3.2: Sample Size**

<b>Category</b>	<b>Target population</b>	<b>Sample Size (20%)</b>
Top	23	5
Middle level	87	17
Lower level staff	421	84
<b>Total</b>	<b>531</b>	<b>106</b>

**Source: Author, 2019**

### 3.5 Research Instruments

This study used a questionnaire for the middle and lower level staff and an interview guide for the top managers comprising of CEOs, directors and so on.

#### 3.5.1 Questionnaire

A questionnaire was used as the tool for data collection. As noted by Kombo & Delno, (2011) a questionnaire is a preferred research tool since it allows a research to collect a lot of data within a limited time frame; it also gives the participants to provide true and anonymous data. It was made up of close ended questions. The

questions to be asked were clear and written in such a way that the top, middle and lower level staff understood easily. The questionnaire comprised of various sections. Section A contained questions on demographic information of the respondents, section B contained questions based on each of the factors influencing ERP implementation where respondents were to indicate their opinion on statements associated to a 5 point Likert scale. The questionnaire was self-administered through pick and drop approach, this was important for collection of primary data.

### **3.5.2 Interview Guide**

Primary data was also collected through an interview guide, which contains all open ended questions as per the study objectives. The interview guide is structured in a manner which captures all the variables in the study. The interview guide was important for this study so that the researcher can interact with the respondents one-on-one, a method which allows the respondents approached to provide information to express their ideas and feelings in a broad manner and the researcher picks out the most important information for the study.

The interviews in this study was carried out with the CEO, directors who are also head of departments at Geonet Ltd. In the absence of the above, their deputies or appointed senior officers in those offices were requested to give audience. In order to offer enough time for the interviews so as to gather enough information, and to avoid a lot unnecessary data, the researcher was select the three listed respondents. These people are selected on the criteria that; they are the people that determine what projects are to be undertaken in the firm in a given time period, they lead in the planning of funds to be used in construction of road projects and advise the project officials on how the projects were carried out. Hence, the researcher considered them to be well versed with the information required in this study.

### **3.5.3 Pilot Study**

A piloting of the instruments was done prior to the actual data collection. According to Donald (2006) a pilot study, is a pre-test research carried out in small scale to assess time, feasibility, cost, and difficult scenarios and also to allow improvement on the validity and reliability of the research before the main study can be conducted. One of the advantages of conducting a pilot study is that it might give advance warning about where the main research project could fail, where research protocols

may not be followed, or whether methods or instruments were inappropriate or too complicated. For the case of this study, 10 staff from Telkom Kenya Limited, sounding telecommunication firm were requested to participate in the pilot study given that they share similar characteristics with those at Geonet ltd, the target firm.

### **3.5.3.1 Validity of the Instruments**

To ensure validity of the instruments, the researcher discussed the questionnaire with the supervisor who guided in developing valid instruments with regard to the face validity, construct validity and content validity. Construct validity shows the viability of the test how it measures up to its targets. Face validity pertaining to the attractiveness and appeal to the eyes of the tools.

### **3.5.3.1 Reliability of the Instruments**

This research study used a test-retest method which involves administering the same scale or measure to the same group of respondents at two separate times. For the case of this study, 10 staff from Telkom Kenya Limited, sounding telecommunication firm were requested to participate in the pilot study given that they share similar characteristics with those at Geonet ltd, the target firm. This was after a time lapse of one or more weeks. These were randomly selected and requested to participate in the study from the target company, Geonet ltd. Reliability test was explained by the Cronbach's values of the test items in each of the variables that were obtained which were above 0.7 that proved the tools reliable (Locharoenrat, 2017).

## **3.6 Data Analysis**

Data collected in this study was analysed via quantitative approach and assembled to form the final findings and interpretations. Data gathered quantitatively from various close-ended questions were classified into various categories and analysed. The responses were further coded by allocating identifiable symbols, figures numerical or other signs (Creswell, 2009). The SPSS program (Version. 22.0) was used as the main statistical tool of calculating the expected parameters. Descriptive statistics revolve revolved around charts, graphs as well as the frequency percentages which was utilized in measuring the central tendencies and reporting the data assembled from the findings extracted from the close-ended items. Frequency tables, were used to present

the study findings. Besides, inferential statistics like such as multivariate regression, ANOVA and correlation was also used.

Correlation analysis is a statistical tool that is applied while determining the degree of linkage between two variables (Cooper & Schindler, 2008). This analysis has been regarded as the initial step while developing statistical models that are aimed at establishing the associations or relationships among various independent variables. Upon developing the correlation matrix that is used to analyze the association among the independent variables and helping in developing a predictable multiple models, the researcher carried out a multiple regression analysis. Correlation analysis helps to identify any possibility of Multi-Collinearity. A correlation value of 0 illustrates that there is no possibility of any association between any two independent variables. Further, if the correlation index is  $\pm 1.0$  it shows that there is a negative or a positive association among the variables (Hair *et al*, 2010). The values were interpreted between negative 1 and positive 1, where  $-ve$  1 represents a negative perfect relationship, 0 represents lack of relationship among the variables while +1 illustrated a perfect positive relationship. The association was regarded as weak when  $r$  ranges between  $\pm 0.1$  to  $\pm 0.29$ , medium when  $r$  ranges between  $\pm 0.3$  to  $\pm 0.49$ , and strong when  $r$  is  $\pm 0.5$  and above.

To test if there exists a significant association between the variables informed the researcher to conduct multiple regression analysis which helps to deduce the existing association between the study's dependent variable and one or more independent variables (Hair *et al.*, 2010). This study used a multiple linear regression analysis using administration factors, resources availability, stakeholder relations, government policy and regulations as the independent variables and implementation of ERP in the telecommunication sector in Kenya as the dependent variable respectively. Where;

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \epsilon, \text{ where,}$$

$Y$  = ERP implementation at Geonet Company Ltd, Kenya

$\beta_0$  = Intercept

$X_1$  = Top Management Support

$X_2$  = communication effectiveness

$X_3$  = Capacity Building

$X_4$  = Perceived Culture



$\beta_1$ ,  $\beta_2$  and  $\beta_3$  are the coefficients of the regression

$\epsilon$ = the error Term

### **3.8 Ethical Considerations**

The researcher made use of all research ethics that aid in achieving the set study objectives. The researcher sought a data collection letter from department of Extra Mural Studies, University of Nairobi and apply for a research permit from the National Commission for Science, Technology and Innovation (NACOSTI) all of which aided in data collection from the target field.

In addition to that, the researcher gave assurance of the privacy and confidentiality of the study. The participants will not be required to indicate their names on the question papers for purposes of anonymity. This will motivate the respondents towards giving valid information. Privacy for research participants is a concept in research ethics which states that a person in human subject research has a right to privacy when participating in research. For the case of this study, privacy of the participants will be considered as a fundamental right. Individuals had a privacy interests in relation to their bodies, personal information, expressed thoughts and opinions.

Finally, the research assistants who were involved in data collection will be educated on the requirements of the study, as well as, how they were approached the participants in an effort to securing their time and valid opinions. They were also tasked to assure the participants on the importance of the study that it was purely academic and then protect all information gathered.

## CHAPTER FOUR

### DATA ANALYSIS, INTERPRETATION AND PRESENTATION

#### 4.1 Introduction

The chapter below presents analysis of the collected data, interpretation and presentation on the assessment of the factors influencing implementation of ERP at Geonet Technologies limited. The analysis was presented in the order of the studied objectives; to establish the influence of top management support on implementation of ERP at Geonet Technologies Ltd, to investigate the influence of communication on implementation of ERP at Geonet Technologies Ltd, to evaluate the influence of capacity training on implementation of ERP at Geonet Technologies Ltd and to find out the influence of culture on implementation of ERP at Geonet Technologies Ltd. The SPSS programme was used to compute the measures of central tendency.

#### 4.2 Response Rate

**Table 3.3: Response Rate**

Status	Frequency	Response Rate
Responded	86	81
Not Responded	20	19
Total	106	100

**Source: Researcher (2019)**

The study targeted a total of 106 possible respondents who constituted the Top (CEO, CFO), Middle level and Lower level staff. Out of the total, 86 questionnaires were returned fully filled up with responses whereas 20 questionnaires were returned in a faulty mode or never got responses for one reason or another thereby giving the study a response rate of 81%. This was adequate according to Mugenda and Mugenda (2010) who advocates that a response rate of 75% or higher is adequate for an academic research.

#### 4.3 Background Information of the Respondents

**Table 4.4: Gender of Respondents**

Gender	Frequency	Percentage
Male	59	69
Female	27	31
Total	86	100

**Source: Researcher (2019)**

The researcher wanted to establish the gender of the respondents; According to the findings displayed in the Table 4.4 above, 69% of the respondents were male whereas the rest 31% were female. This implied that the respondent tried as much as possible to embrace both gender opinions on the raised research questions.

**Table 4.5: Highest Level of Education of Respondents**

<b>Education Level</b>	<b>Frequency</b>	<b>Percentage</b>
Secondary level	6	7
College level	39	45
University level	41	48
Total	86	100

**Source: Researcher (2019)**

The researcher asked the respondents their highest level of education. According to their responses displayed in the Table 4.5 above, 48% of the participants said that they had reached university level, 45% said that they had college level education whereas 7% said that they had secondary level education. The fact that majority of the staff had university and college level education is a clear implication that most had adequate understanding to adequately respond to the raised research questions concerning implementation of ERP.

**Table 4.6: Age Bracket of the Respondents**

<b>Age Bracket</b>	<b>Frequency</b>	<b>Percentage</b>
21 to 30 years	15	17
31 to 40 years	44	51
41 - 50 years	18	21
over 50 years	9	11
Total	86	100

The Table 4.6 depicts findings on age brackets of the respondents. According to the questions, majority of the respondents as shown by 51% indicated that they were aged between 31-40 years, 21% said 41-50 years, 17% said 21-30 years whereas only 11% who were over 50 years respectively. duration respondents had worked for their specific banks. This was an implication that most staffs had a sounding age that might have reflected on valid and mature responses towards the raised research questions.

**Table 4.7: Duration respondents have been working at Geonet technologies limited Ltd**

<b>Duration</b>	<b>Frequency</b>	<b>Percentage</b>
1 - 2 years	12	14
2 – 3 years	33	38
3 – 4 years	29	34
5 years and above	12	14
Total	86	100

**Source: Author (2019)**

The Table 4.7 above present findings on duration respondents who participated in the study had worked at Geonet Technologies limited. According to the findings, majority of respondents as shown by 38% said that they had worked for a duration of 2-3 years, 34% said 3-4 years, 14% said 1-2 years whereas the rest a similar 14% said 5 years and above respectively. This was an implication that most of the respondents had adequate duration of working and in position to understand well on the issues of ERP, as well as its implementation at Geonet Technologies Limited.

#### **4.4 Top Management Support and Implementation of ERP at Geonet Technologies Limited**

The section below presents findings based on the first objective which was to establish the influence of top management support and implementation of ERP at Geonet Technologies Limited. The data was captured on a 5-point Likert scale.

**Table 4.8: Extent to which respondents are satisfied with the top management support present in their organization towards implementation of ERP at Geonet Telecommunications Ltd**

<b>Extent</b>	<b>Frequency</b>	<b>Percentage</b>
Very satisfied	11	13
Satisfied	46	53
Undecided	15	17
Dissatisfied	12	14
Very dissatisfied	2	2
Total	86	100

**Source: Author (2019)**

Respondents were required to indicate their level of satisfaction with the top management support present in their organization towards implementation of ERP at Geonet Ltd as reflected in the table 4.8 above. According to the question, majority as shown by 53% were very satisfied about the perceived communication aspects and

approaches adopted at and Implementation of ERP at Geonet Technologies Ltd, 14% were undecided, 14% were dissatisfied, 11% were undecided whereas 3% were very dissatisfied. This was an implication that the staffs understanding the relationship between perceived communication aspects and approaches adopted at and Implementation of ERP at Geonet Technologies Ltd, as well as, associated aspects were being done in the right way.

**Table 4.9: Respondents level of agreement on statements regarding the influence of top management support on Implementation of ERP at Geonet Technologies limited**

Statements N=86		F	%	Mean score	Std dev.
The top management in the organization is well structured and stipulates well on matters to do with ERP	Strongly Agree	25	29	4.27	0.0347
	Agree	60	70		
	Moderately Agree	0	0		
	Disagree	1	1		
	Strongly Disagree	0	0		
	<b>Total</b>	<b>86</b>	<b>100</b>		
The management of this firm always have more interest in ERP issues	Strongly Agree	9	10	4.07	0.0331
	Agree	76	88		
	Moderately Agree	1	1		
	Disagree	1	1		
	Strongly Disagree	0	0		
	<b>Total</b>	<b>86</b>	<b>100</b>		
The top management in this firm is proactive in letting the staff understand more of the aspects in sustainable ERP strategy	Strongly Agree	7	8	4.05	0.0329
	Agree	77	90		
	Moderately Agree	1	1		
	Disagree	1	1		
	Strongly Disagree	0	0		
	<b>Total</b>	<b>86</b>	<b>100</b>		
Implementation of ERP is initiated by top managers who possess specific values on Company objectives and missions	Strongly Agree	9	11	4.05	0.0222
	Agree	74	86		
	Moderately Agree	1	1		
	Disagree	1	1		
	Strongly Disagree	1	1		
	<b>Total</b>	<b>86</b>	<b>100</b>		
I understand that there are hidden potentials for increased efforts concerning ERP and top management need to be more vibrant	Strongly Agree	21	24	4.05	0.0109
	Agree	57	66		
	Moderately Agree	3	4		
	Disagree	3	3		
	Strongly Disagree	3	3		
	<b>Total</b>	<b>86</b>	<b>100</b>		
The management has an awareness of key organizational issues that they think ERP will counteract	Strongly Agree	14	16	4.01	0.0326
	Agree	59	69		
	Moderately Agree	13	15		
	Disagree	0	0		
	Strongly Disagree	0	0		
	<b>Total</b>	<b>86</b>	<b>100</b>		
The management in this organization always organize an open, face-to-face dialogue with stakeholders	Strongly Agree	9	10	3.9	0.0317
	Agree	65	76		
	Moderately Agree	9	10		
	Disagree	2	2		
	Strongly Disagree	0	0		
	<b>Total</b>	<b>86</b>	<b>100</b>		
<b>Composite Mean and Standard Deviations</b>				<b>4.057</b>	<b>0.028</b>

Source: Author (2019)

The Table 4.9 above depicts findings on respondents' level of agreement on statements regarding the influence of top management support on implementation of ERP at Geonet Technologies Limited. According to the findings, majority of the respondents were in agreement that; the top management in the organization is well structured and stipulates well on matters to do with ERP as shown by a mean score of 4.27 and a standard deviation of 0.0347 and the management of this firm always have more interest in ERP issues as shown by a mean score of 4.07 and a standard deviation of 0.0331, the top management in this firm is proactive in letting the staff understand more of the aspects in sustainable ERP strategy as shown by a mean score of 4.05 and standard deviation of 0.0329, implementation of ERP is initiated by top managers who possess specific values on Company objectives and missions as shown by a mean score of 4.05 and a standard deviation of 0.0222, the staff understand that there are hidden potentials for increased efforts concerning ERP and top management need to be more vibrant as shown by a mean score of 4.05 and a standard deviation of 0.0019, the management has an awareness of key organizational issues that they think ERP will counteract as shown by a mean score of 4.01 and standard deviation of 0.0326, the management in this organization always organize an open, face-to-face dialogue with stakeholders as shown by a mean score of 3.9 and standard deviation of 0.0317.

#### **4.5 Communications and Implementation of ERP at Geonet Telecommunications Ltd**

The section below presents the analysis of the influence of communications on Implementation of ERP at Geonet Telecommunications Ltd. The data was captured on a 5-point Likert scale.

**Table 4.10: Respondents level of satisfaction the perceived communication aspects and approaches adopted at and Implementation of ERP at Geonet Technologies Ltd**

<b>Level</b>	<b>Frequency</b>	<b>Percentage</b>
Very satisfied	12	14
Satisfied	50	58
Undecided	12	14
Dissatisfied	12	14
Very dissatisfied	12	14
Total	86	100

**Source: Researcher (2019)**

Respondents were required to indicate their level of agreement with the perceived communication aspects and approaches adopted in the implementation of ERP at Geonet Technologies Ltd. According to the results displayed in Table 4.10 above, majority as shown by 58% were very satisfied about the perceived communication aspects and approaches adopted at and Implementation of ERP at Geonet Technologies Ltd, 14% were undecided, 14% were dissatisfied, 11% were undecided whereas 3% were very dissatisfied. This was an implication that the staffs understanding the relationship between perceived communication aspects and approaches adopted at and Implementation of ERP at Geonet Technologies Ltd, as well as, associated aspects were being done in the right way.

**Table 4.11: Agreement levels with the statements that relate to influence of perceived communication approaches on ERP implementation at GEONET Technologies Ltd**

Statements N=86		F	(%)	Mean score	Std dev.
Large amount of resources have been appropriated for communication tools	Strongly Agree	13	15		
	Agree	73	85		
	Moderately Agree	0	0		
	Disagree	0	0		
	Strongly Disagree	0	0		
	<b>Total</b>	<b>86</b>	<b>100</b>	<b>4.14</b>	<b>0.0337</b>
The management of this organization have been keen on optimization of best human capital, knowledge, and expertise towards communication strategy used for ERP related activities	Strongly Agree	13	15		
	Agree	72	84		
	Moderately Agree	1	1		
	Disagree	0	0		
	Strongly Disagree	0	0		
	<b>Total</b>	<b>86</b>	<b>100</b>	<b>4.14</b>	<b>0.0317</b>
I believe that this organization has a shortage of qualified candidates with the relevant knowledge and communication skills	Strongly Agree	21	24		
	Agree	57	66		
	Moderately Agree	3	3		
	Disagree	5	6		
	Strongly Disagree	0	0		
	<b>Total</b>	<b>86</b>	<b>100</b>	<b>4.08</b>	<b>0.0332</b>
The communication approaches used in are very expensive	Strongly Agree	6	7		
	Agree	66	77		
	Moderately Agree	10	12		
	Disagree	2	2		
	Strongly Disagree	2	2		
	<b>Total</b>	<b>86</b>	<b>100</b>	<b>3.85</b>	<b>0.0313</b>
It is good that , the responsibility to manage ERP activities is assigned to the Strategic department whose communication approaches are appraised based on their original scope of duties	Strongly Agree	11	13		
	Agree	52	60		
	Moderately Agree	22	26		
	Disagree	1	1		
	Strongly Disagree	0	0		
	<b>Total</b>	<b>86</b>	<b>100</b>	<b>3.83</b>	<b>0.0311</b>
<b>Composite Means and Standard Deviation</b>				<b>4.008</b>	<b>0.0326</b>

**Source: Researcher (2019)**

The Table 4.11 above depicts findings on respondents' level of agreement with statements that relate to influence of perceived communication approaches on ERP implementation at Geonet Technologies Ltd. According to the findings, majority of the respondents were in agreement that; large amount of resources have been



appropriated for communication tools as shown by a mean score of 4.14 and a standard deviation of 0.0337, the management of the organization have been keen on optimization of best human capital, knowledge, and expertise towards communication strategy used for ERP related activities as shown by a mean score of 4.14 and a standard deviation of 0.0337, the staff believe that Geonet technologies limited as an organization has a shortage of qualified candidates with the relevant knowledge and communication skills as shown by a mean score of 4.08 and a standard deviation of 0.0332, the communication approaches used in are very expensive as shown by a mean score of 3.85 and a standard deviation of 0.031, and that; it is good that the responsibility to manage ERP activities is assigned to the Strategic department whose communication approaches are appraised based on their original scope of duties as shown by a mean score of 3.83 and a standard deviation of 0.0311 respectively.

#### **4.6 Capacity Building and ERP implementation at Geonet Telecommunications limited**

The section below presents the analysis of the influence of capacity building on Implementation of ERP at Geonet Telecommunications Ltd. The data was captured on a 5-point Likert scale.

**Table 4.12: Respondent’s level of satisfaction with the capacity building approaches adopted the organization towards implementation of ERP**

<b>Level</b>	<b>Frequency</b>	<b>Percentage</b>
Very satisfied	3	14
Satisfied	14	58
Undecided	12	11
Dissatisfied	41	14
Very dissatisfied	16	3
Total	86	100

The researcher sought to find out the respondent’s level of satisfaction with the capacity building approaches adopted the organization towards implementation of ERP and the results are as displayed in Table 4.12 above. According to the findings, 58% of the respondents were satisfied with the capacity building approaches adopted the organization towards implementation of ERP, 14% were dissatisfied, 14% were very satisfied, 11% said they were undecided whereas 3% were very dissatisfied with the capacity building approaches adopted the organization towards implementation of

ERP. This was an implication that the staffs understanding, internet banking and associated aspects were being done in the right way.

**Table 4.13: Respondents level of agreement level with statements on the influence of capacity building on implementation of ERP at GEONET Technologies Ltd**

Statements N=86		F	(%)	Mean score	Std dev.
Trainers characteristics are well harmonized with the ERP initiatives that counteract those of other similar competitors	Strongly Agree	20	23	<b>4.1</b>	<b>0.0021</b>
	Agree	59	69		
	Moderately Agree	3	3		
	Disagree	3	3		
	Strongly Disagree	1	1		
<b>Total</b>	<b>86</b>	<b>100</b>			
The strategic plan of this organization is well articulated based on the organization's mission, vision and goals that regard ERP implementation	Strongly Agree	21	24	<b>4.1</b>	<b>0.0011</b>
	Agree	58	67		
	Moderately Agree	3	3		
	Disagree	3	3		
	Strongly Disagree	1	1		
<b>Total</b>	<b>86</b>	<b>100</b>			
The primary stakeholders have interests that are directly linked to the fortunes of a company and insist of sound training and equipping employees with ERP skills	Strongly Agree	13	15	<b>3.83</b>	<b>0.0311</b>
	Agree	47	55		
	Moderately Agree	25	29		
	Disagree	0	0		
	Strongly Disagree	1	1		
<b>Total</b>	<b>86</b>	<b>100</b>			
The external management involve auditors well in reporting the outcomes of trainings offered on ERP	Strongly Agree	11	13	<b>3.76</b>	<b>0.0306</b>
	Agree	40	47		
	Moderately Agree	34	40		
	Disagree	0	0		
	Strongly Disagree	1	1		
<b>Total</b>	<b>86</b>	<b>100</b>			
The staff of this organization are happy of the ERP training programmes available	Strongly Agree	11	13	<b>3.7</b>	<b>0.0301</b>
	Agree	52	60		
	Moderately Agree	22	26		
	Disagree	1	1		
	Strongly Disagree	0	0		
<b>Total</b>	<b>86</b>	<b>100</b>			
<b>Composite means and Standard deviation</b>				<b>3.898</b>	<b>0.019</b>

The Table 4.13 above depicts findings on respondent's level of agreement level with statements on the influence of capacity building on implementation of ERP at Geonet Technologies Ltd. According to the results, majority of the respondents were in agreement that; Trainers characteristics are well harmonized with the ERP initiatives that counteract those of other similar competitors as shown by a mean score of 4.1 and a standard deviation of 0.0021, the strategic plan of this organization is well articulated based on the organization's mission, vision and goals that regard ERP implementation as shown by a mean score of 4.1 and a standard deviation of 0.0011,

the primary stakeholders have interests that are directly linked to the fortunes of a company and insist of sound training and equipping employees with ERP skills as shown by a mean score of 3.83 and standard deviation of 0.0311, the external management involves auditors well in reporting the outcomes of trainings offered on ERP as shown by mean by a mean score of 3.76 and a mean score of 0.0306, and that; the staff of this organization are happy of the ERP training programmes available as shown by a mean score of 3.7 and a standard deviation of 0.0301 respectively.

#### **4.7 Perceived Culture and ERP implementation at Geonet Telecommunications limited**

The section below presents the analysis of the influence of culture on implementation of ERP at Geonet Telecommunications Ltd. The data was captured on a 5-point Likert scale.

**Table 4.14: Respondents level of satisfaction with the perceived culture adopted by Geonet Technologies Limited towards implementation of ERP**

<b>Level</b>	<b>Frequency</b>	<b>Percentage</b>
Very satisfied	12	14
Satisfied	45	52
Undecided	5	6
Dissatisfied	14	16
Very dissatisfied	10	12
Total	86	100

**Source: Researcher (2019)**

The Table 4.14 above depicts findings on respondent’s level of satisfaction with the perceived culture adopted by Geonet Technologies Limited towards implementation of ERP. According to the results, majority of the respondents 52% indicated that they were satisfied with the perceived culture adopted by Geonet Technologies Limited towards implementation of ERP, 14% said very satisfied, 16% were dissatisfied, 12% were very dissatisfied whereas only 65 of the respondents were undecided the perceived culture adopted by Geonet Technologies Limited towards implementation of ERP the perceived culture adopted by Geonet Technologies Limited towards implementation of ERP. This was an implication that the staffs understanding with relation to the perceived culture adopted by Geonet Technologies Limited towards implementation of ERP and associated aspects.

**Table 4.15: Respondents level of agreement on statements regarding the influence of perceived culture on ERP implementation at GEONET Technologies Ltd**

Statements N=86		F	(%)	Mean score	Std dev.
Am happy that the organization management has always played the role of safeguarding its people from unwanted cultures	Strongly Agree	9	10		
	Agree	42	49		
	Moderately Agree	33	38		
	Disagree	1	1		
	Strongly Disagree	1	1		
	<b>Total</b>	<b>86</b>	<b>100</b>	<b>3.27</b>	<b>.2033</b>
This organizations policy is clear on how to adopt a harmonized culture relative to ERP Initiatives	Strongly Agree	11	13		
	Agree	43	50		
	Moderately Agree	30	35		
	Disagree	1	1		
	Strongly Disagree	1	1		
	<b>Total</b>	<b>86</b>	<b>100</b>	<b>3.22</b>	<b>.1023</b>
Am happy that the staff in this organization have embraced the ERP initiatives as stipulated in the strategic plan	Strongly Agree	6	7		
	Agree	66	77		
	Moderately Agree	10	12		
	Disagree	2	2		
	Strongly Disagree	2	2		
	<b>Total</b>	<b>86</b>	<b>100</b>	<b>3.05</b>	<b>.1110</b>
Am happy about the support provided for by the management based on right culture on activities related to ERP implementation	Strongly Agree	9	10		
	Agree	65	76		
	Moderately Agree	9	10		
	Disagree	2	2		
	Strongly Disagree	1	1		
	<b>Total</b>	<b>86</b>	<b>100</b>	<b>3.00</b>	<b>.0022</b>
<b>Composite Mean and Standard Deviation</b>				<b>3.135</b>	<b>0.1047</b>

**Source: Researcher 2019**

The study sought to establish the respondents' level of agreement on statements regarding the influence of perceived culture on ERP implementation at Geonet Technologies Limited as shown in Table 4.15 above. According to the findings, majority of the respondents were in agreement that; they were happy that the organization management has always played the role of safeguarding its people from unwanted cultures as shown by a mean score of 3.27 and standard deviation of .2033, the organizations policy is clear on how to adopt a harmonized culture relative to ERP Initiatives as shown by a mean score of 3.22 and standard deviation of .1023, they were happy that the staff in this organization have embraced the ERP initiatives as stipulated in the strategic plan as shown by a mean score of 3.05 and a standard deviation of .1110 and that the staff were happy about the support provided for by the management based on right culture on activities related to ERP implementation as shown by a mean score of 3.00 and a standard deviation of .0022 respectively.

## 4.8 Inferential Statistics

### 4.8.1 Model Estimation

**Table 4.16: Model Estimation**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	F Change	Df	Sig. Change	F
1	.897 <sup>a</sup>	.805	.803	.08978	63.312	4	.000	

Adjusted R squared is coefficient of determination which indicates the variation in the dependent variable due to changes in the independent variables. From Table 4.16 above the value of adjusted R squared was 0.803, an indication that there was variation of 80.3% on dependent variable ERP implementation at Geonet Technologies Limited, Kenya. This means the model provided a good fit between top management support, communication, capacity building, perceived culture and ERP implementation at Geonet Technologies Limited. In addition, the adjusted multiple coefficient of determination of 0.803 indicates the high joint impact of the explanatory variables. It means that 80.3% of implementation of ERP at Geonet Technologies limited are explained by the changes in top management support, communication, capacity building, perceived culture whereas 19.7% of changes in ERP implementation at Geonet Technologies Limited are explained by other factors such as external organizational policies, location, and demographic factors among others not studied in this study. This can be confirmed by the high figure of F value of 63.312 which implies a high joint explanatory ability.

### 4.8.2 Regression Analysis

**Table 4.17: Regression Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.
	B	Std. Error			
(Constant)	3.752	.024		154.661	.010
Top management	.899	.009	1.226	99.883	.000
Communications	.002	.003	.006	.708	.040
Capacity building	.580	.032	3.489	81.314	.012
Perceived culture	.106	.032	4.688	7.736	.030

**a. Dependent Variable:** *Implementation of ERP at Geonet Limited*

The proposed regression equation model to be used was of the form;  $Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \epsilon$  where Y = Dependent variable (strategic decision making),  $\beta_0$

= Constant (The intercept of the model),  $\beta$ = Coefficient of the X variables (independent variables),  $X_1$ = top management support,  $X_2$ =communications,  $X_3$ = capacity building and  $X_4$  = perceived culture. The figures in the above Table 4.18 were generated through the use of SPSS data analysis and established the following regression equation;  $Y = 3.752 + 0.899X_1 + 0.002X_2 + 0.580X_3 + 0.106X_4$ . The study found that when independent variables (top management support, communications, capacity building, perceived culture) were kept constant at zero implementation of ERP at Geonet Technologies limited will be at 3.752. A unit increase in top management support will lead to an increase in implementation of ERP at Geonet Technologies limited by a factor of 0.899; a unit increase in communications will lead to an increase in implementation of ERP at Geonet Technologies limited by a factor of 0.002, while a unit increase in capacity building will lead to increase in implementation of ERP at Geonet Technologies limited by a factor of 0.580 and a unit increase in perceived culture will lead to an increase in implementation of ERP at Geonet Technologies limited. by a factor of 0.106. The table also shows that the X variables (independent variables),  $X_1$ = top management support,  $X_2$ =communications,  $X_3$ = capacity building and  $X_4$  = perceived culture with  $Y$ = implementation of ERP at Geonet Technologies limited are significant at 5% level of significance and 95% level of confidence at 0.010, 0.000, 0.040 and 0.030 respectively.

#### 4.8.3 Pearson Coefficient Correlations

**Table 4.18: Pearson Coefficient Correlations<sup>a</sup>**

		Top management support	Communications	Capacity building	Perceived culture
Top management support	Pearson Correlation	1	.241**	.386**	.359**
	Sig. (2-tailed)	.000	.004	.000	.000
	N	86	86	86	86
Communications	Pearson Correlation	.241**	1	.486**	.441**
	Sig. (2-tailed)	.004	.000	.000	.000
	N	86	86	86	86
Capacity building	Pearson Correlation	.386**	.486**	1	.927**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	86	86	86	86
Perceived culture	Pearson Correlation	.359**	.441**	.927**	1
	Sig. (2-tailed)	.000	.000	.000	.000
	N	86	86	86	86

The researcher used specifically Pearson's correlation coefficient test at alpha level 0.05 to determine the relationship. A presentation of these results is in Table 4.13. The

study findings in Table 4.19 shows that there was a significant relationship among the independent variables; top management support, communications, capacity building and perceived culture ( $r=0.750$ ,  $P=0.000$ ). Correlation analysis carried out further shows that there was a significant relationship at the 0.05 level (2-tailed) and at the 0.01 level (2-tailed).

## **CHAPTER FIVE**

### **SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS**

#### **5.1 Introduction**

The chapter below presents the summary of findings, conclusions and recommendations on the assessment of the factors influencing implementation of ERP at Geonet Technologies limited. The summary, conclusions of the study has been presented in the order of the studied objectives; to establish the influence of top management support on implementation of ERP at Geonet Technologies Ltd, to investigate the influence of communication on implementation of ERP at Geonet Technologies Ltd, to evaluate the influence of capacity training on implementation of ERP at Geonet Technologies Ltd and to find out the influence of culture on implementation of ERP at Geonet Technologies Ltd.

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

In summary, 69% of the respondents were male whereas the rest 31% were female. At the same time, 48% of the participants said that they had reached university level, 51% indicated that they were aged between 31-40 years, and that 38% said that they had worked for a duration of 2-3 years. The study found out that majority as shown by 53% was very satisfied about the top management approaches adopted at and Implementation of ERP at Geonet Technologies Ltd. On perceived communication aspects influence, it can be summarized from the study that 58% were very satisfied about the perceived communication aspects and approaches adopted at and Implementation of ERP at Geonet Technologies Ltd. On capacity building, it was found out from the study that 51% of the respondents were satisfied with the capacity building approaches adopted the organization towards implementation of ERP at Geonet Telecommunications limited. Finally, the study found out that majority of the respondents 54% indicated that they were satisfied with the perceived culture adopted by Geonet Technologies Limited towards implementation of ERP.

#### **5.3 Discussion of Findings**

The study established that majority of the respondents were in agreement that; the top management in the organization is well structured and stipulates well on matters to do with ERP as shown by a mean score of 4.27 and a standard deviation of 0.0347 and



the management of this firm always have more interest in ERP issues as shown by a mean score of 4.07 and a standard deviation of 0.0331, the top management in this firm is proactive in letting the staff understand more of the aspects in sustainable ERP strategy as shown by a mean score of 4.05 and standard deviation of 0.0329, implementation of ERP is initiated by top managers who possess specific values on Company objectives and missions as shown by a mean score of 4.05 and a standard deviation of 0.0222, the staff understand that there are hidden potentials for increased efforts concerning ERP and top management need to be more vibrant as shown by a mean score of 4.05 and a standard deviation of 0.0019, the management has an awareness of key organizational issues that they think ERP will counteract as shown by a mean score of 4.01 and standard deviation of 0.0326, the management in this organization always organize an open, face-to-face dialogue with stakeholders as shown by a mean score of 3.9 and standard deviation of 0.0317. The results concur with the literature by Wang and Chen (2006). Accordingly, the results agree with the literature reviewed from Thong et al. (2016) who asserted that top managers supervise the whole implementation procedure, enable resource distribution, and support conflict management. Moreover, literature by Zhang et al. (2005) also indicated that top management has the responsibility to align the new ERP system with the current business practices and prepare the employees for the change brought by the new technology. When top management works closely with various ERP users in the direction of the successful implementation of the ERP system, the communication between business groups is being enhanced and conflict resolution becomes attainable.

It was established that majority shown by 14% were undecided, 14% were dissatisfied, 11% were undecided whereas 3% were very dissatisfied. The study found out that majority of the respondents were in agreement that; large amount of resources have been appropriated for communication tools as shown by a mean score of 4.14 and a standard deviation of 0.0337, the management of the organization have been keen on optimization of best human capital, knowledge, and expertise towards communication strategy used for ERP related activities as shown by a mean score of 4.14 and a standard deviation of 0.0337, the staff believe that Geonet technologies limited as an organization has a shortage of qualified candidates with the relevant knowledge and communication skills as shown by a mean score of 4.08 and a

standard deviation of 0.0332, the communication approaches used in are very expensive as shown by a mean score of 3.85 and a standard deviation of 0.031, and that; it is good that the responsibility to manage ERP activities is assigned to the Strategic department whose communication approaches are appraised based on their original scope of duties as shown by a mean score of 3.83 and a standard deviation of 0.0311 respectively. The results agree with the findings by Hong and Kim (2012) that effective communication is a strong foundation of a trustworthy relationship between external consultants and organizational members the literature expressed that the more consultants and users understand each other, the more effective the communication becomes during the consulting process. Insufficient communication of users' needs, goals and aspirations to the consultants may undermine the implementation of the ERP system.

The study found out that majority of the respondents were in agreement that; Trainers characteristics are well harmonized with the ERP initiatives that counteract those of other similar competitors as shown by a mean score of 4.1 and a standard deviation of 0.0021, the strategic plan of this organization is well articulated based on the organization's mission, vision and goals that regard ERP implementation as shown by a mean score of 4.1 and a standard deviation of 0.0011, the primary stakeholders have interests that are directly linked to the fortunes of a company and insist of sound training and equipping employees with ERP skills as shown by a mean score of 3.83 and standard deviation of 0.0311, the external management involves auditors well in reporting the outcomes of trainings offered on ERP as shown by mean by a mean score of 3.76 and a mean score of 0.0306, and that; the staff of this organization are happy of the ERP training programmes available as shown by a mean score of 3.7 and a standard deviation of 0.0301 respectively. The results agree with the literature whereby Bajwa et al. (2004) asserted that capacity building has been recognized an important requirement for ERP implementation. According to the research that was made by Bradley & Lee (2007) training is very important for any enterprise wishing to implement an ERP system. Training is not given enough attention and importance within companies, and frequently companies training practices and even their training budgets are frequently lower than what they should be (Bradley & Lee, 2007). In addition, to understand the new business process, and how the system is changing the

whole work procedures, training is required alongside onsite support for the managers and the employees during the implementation phase (Nah et al., 2001).

The study found out that majority of the respondents were in agreement that; they were happy that the organization management has always played the role of safeguarding its people unwanted cultures as shown by a mean score of 3.27 and standard deviation of .2033, the organizations policy is clear on how to adopt a harmonized culture relative to ERP Initiatives as shown by a mean score of 3.22 and standard deviation of .1023, they were happy that the staff in this organization have embraced the ERP initiatives as stipulated in the strategic plan as shown by a mean score of 3.05 and a standard deviation of .1110 and that the staff were happy about the support provided for by the management based on right culture on activities related to ERP implementation as shown by a mean score of 3.00 and a standard deviation of .0022 respectively. The results agreed with the literature by Otieno (2010) who said that the developers' and consultants' cultural assumptions are embedded in the very roots of the software itself. If cultures of producers and users are different it results in a cultural clash. The same literature said that the culture of an organization is defined as "a pattern of shared basic assumptions that a group learns as it solves its problems of external adaptation and internal integration, that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems.

#### **5.4 Conclusions**

It was concluded from the study that perceived communication aspects and approaches influences implementation of ERP at Geonet Technologies Ltd. The study concludes that that; the top management in the organization is well structured and stipulates well on matters to do with ERP, the management of this firm always have more interest in ERP issues, the top management in this firm is proactive in letting the staff understand more of the aspects in sustainable ERP strategy, implementation of ERP is initiated by top managers who possess specific values on Company objectives and missions, the staff understand that there are hidden potentials for increased efforts concerning ERP and top management need to be more vibrant, the management has an awareness of key organizational issues that they think ERP will counteract, the

management in this organization always organize an open, face-to-face dialogue with stakeholders.

The study concluded that most of the staff were very satisfied about the perceived communication aspects and approaches towards and Implementation of ERP at Geonet Technologies Ltd. The study concludes that; large amount of resources have been appropriated for communication tools, the management of the organization have been keen on optimization of best human capital, knowledge, and expertise towards communication strategy used for ERP related activities, the staff believe that Geonet technologies limited as an organization has a shortage of qualified candidates with the relevant knowledge and communication skills, the communication approaches used in are very expensive and that; it is good that the responsibility to manage ERP activities is assigned to the Strategic department whose communication approaches are appraised based on their original scope of duties.

The study concluded that most staff satisfied with the capacity building approaches adopted the organization towards implementation of ERP at Geonet Telecommunications limited. The study found out that majority of the respondents were in agreement that; trainers characteristics are well harmonized with the ERP initiatives that counteract those of other similar competitors, the strategic plan of this organization is well articulated based on the organization's mission, vision and goals that regard ERP implementation, the primary stakeholders have interests that are directly linked to the fortunes of a company and insist of sound training and equipping employees with ERP skills, the external management involves auditors well in reporting the outcomes of trainings offered on ERP and that; the staff of this organization are happy of the ERP training programmes available.

The study concludes that the staff at Geonet Telecommunications limited were in agreement that; they were happy that the organization management has always played the role of safeguarding its people unwanted cultures, the organizations policy is clear on how to adopt a harmonized culture relative to ERP Initiatives, they were happy that the staff in this organization have embraced the ERP initiatives as stipulated in the strategic plan and that the staff were happy about the support provided for by the management based on right culture on activities related to ERP implementation.

## **5.5 Recommendations**

1. This study recommends that the top management at Geonet technologies limited continue with the motive of supporting issues to do with ERP especially on the implementation aspects for their support have been established as critical when it comes to this. In this case, the top management would need to come up with stronger strategies towards this so as their support can have a more impact towards ERP implementation.
2. The study recommends that the management and the staff fraternity continue enhancing communication for it was established to have an influence on the ERP implementation at Geonet telecommunications limited. In this case, the management must come up or adopt newest technologies so as to fully impact on the implementation processes among other inputs that are sound.
3. Capacity training was found to be significant towards ERP implementation. In this case, this study recommends that more training besides the current ones be adopted especially through hiring trainers or coming up with other relevant training programs that will enhance ERP implementation at Geonet Telecommunications limited.
4. This study recommends that the entire staff fraternity with the assistance of the organization stakeholders adopt a harmonized culture that will always not affect the positivity outcome of ERP at Geonet telecommunications limited. This should be done with a close consultation among the staff and the organization management.

## **5.6 Recommendations for Further Studies**

This study recommends that further studies be done to establish whether there are other factors influencing the implementation of ERP at Geonet Telecommunications Limited. This study also recommends that further studies be also done to include more telecommunication firms so as to get a greater view about the issues influencing ERP implementation.

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## **Appendix I: Letter of Introduction**

Dear Respondent,

### **RE: DATA COLLECTION**

I am a Masters student pursuing a course in project planning and management at the University of Nairobi. I am doing a thesis on the ‘**The Factors influencing implementation of ERP in the Telecommunication Industry in Kenya**’; in the case of GEONET Technologies Ltd. I am visiting your reputable organization with the attached questionnaire seeking to gather information as pertains to the study. You are assured that the information you will provide will be used for research reasons only and that the data will be treated with high confidentiality and integrity. I will be grateful for your cooperation and active participation to this academic effort.

Yours faithfully,

.....

Abraham Bureti

UoN

## **Appendix II: Research Questionnaire**

### **Section A: General**

1. Gender

a) Male [ ]

b) Female [ ]

2. Highest level of education

a) Secondary level [ ]

b) College level [ ]

c) University level [ ]

d) Others specify .....

3. Kindly indicate your age bracket

a) 21 to 30 years [ ]

b) 31 to 40 years [ ]

c) 41 - 50 years [ ]

d) over 50 years [ ]

4. Kindly indicate how long you have been working at Geonet technologies Limited?

1 - 2 years

2 – 3 years

3 – 4 years

5 years and above

### **Section B: Top Management Support**

5. How satisfied are you with the top management support present in this organization towards ERP Implementation?

Very satisfied [ ]

Satisfied [ ]

Undecided [ ]

Dissatisfied [ ]

Very dissatisfied [ ]

6. Kindly indicate your agreement level with the given statements that have to do with the influence of top management support on ERP implementation at GEONET Technologies Ltd. Rate where 1= Strongly Agree, 2 Agree, 3 Moderately Agree, 4 Disagree and 5 = Strongly Disagree

Statements	1	2	3	4	5
The top management in the organization is well structured and stipulates well on matters to do with ERP					
The management of this firm always have more interest in ERP issues					
The top management in this firm is proactive in letting the staff understand more of the aspects in sustainable ERP strategy					
Implementation of ERP is initiated by top managers who possess specific values on Company objectives and missions					
I understand that there are hidden potentials for increased efforts concerning ERP and top management need to be more vibrant					
The management has an awareness of key organizational issues that they think ERP will counteract					
The management in this organization always organize an open, face-to-face dialogue with stakeholders					
Any other					

### Section C: Communications

7. How satisfied are you with the perceived communication aspects and approaches adopted by this organization?

- Very satisfied
- Satisfied
- Undecided
- Dissatisfied
- Very dissatisfied

8. Kindly indicate your agreement level with the given statements that have to do with the influence of perceived communication approaches on ERP implementation at GEONET Technologies Ltd. Rate where 1= Strongly Agree, 2 Agree, 3 Moderately Agree, 4 Disagree and 5 = Strongly Disagree

Statements	1	2	3	4	5
Large amount of resources have been appropriated for communication tools					
The management of this organization have been keen on optimization of best human capital, knowledge, and expertise towards communication strategy used for ERP related activities					

I believe that this organization has a shortage of qualified candidates with the relevant knowledge and communication skills					
The communication approaches used in are very expensive					
It is good that , the responsibility to manage ERP activities is assigned to the Strategic department whose communication approaches are appraised based on their original scope of duties					
Any other					

### Section D: Capacity Building

9. How satisfied are you with the capacity building approaches adopted by this organization towards ERP Implementation?

Very satisfied

Satisfied

Undecided

Dissatisfied

Very dissatisfied

10. Kindly indicate your agreement level with the given statements that have to do with the influence of capacity building on ERP implementation at GEONET Technologies Ltd. Rate where 1= Strongly Agree, 2 Agree, 3 Moderately Agree, 4 Disagree and 5 = Strongly Disagree

Statements	1	2	3	4	5
The primary stakeholders have interests that are directly linked to the fortunes of a company and insist of sound training and equipping employees with ERP skills					
The external management involve auditors well in reporting the outcomes of trainings offered on ERP					
The staff of this organization are happy of the ERP training programmes available					
Trainers characteristics are well harmonized with the ERP initiatives that counteract those of other similar competitors					
The strategic plan of this organization is well articulated based on the organization's mission, vision and goals that regard ERP implementation					

Any other					
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**Section E: Perceived culture**

11. How satisfied are you with the perceived culture adopted by this organization towards ERP Implementation?

- Very satisfied
- Satisfied
- Undecided
- Dissatisfied
- Very dissatisfied

12. Kindly indicate your agreement level with the given statements that have to do with influence of perceived culture on ERP implementation at GEONET Technologies Ltd. Rate where 1= Strongly Agree, 2 Agree, 3 Moderately Agree, 4 Disagree and 5 = Strongly Disagree

Statements	1	2	3	4	5
Am happy that the organization management has always played the role of safeguarding its people unwanted cultures					
This organizations policy is clear on how to adopt a harmonized culture relative to ERP Initiatives					
Am happy that the staff in this organization have embraced the ERP initiatives as stipulated in the strategic plan					
Am happy about the support provided for by the management based on right culture on activities related to ERP implementation					
Any other					

**Thanks for your Participation**

**Appendix III: Interview Guide**

**Section A: General**

8. Gender

c) Male [ ]

d) Female [ ]

9. Highest level of education

a) Secondary level [ ]

b) College level [ ]

c) University level [ ]

d) Others specify .....

10. Kindly indicate your age bracket

e) 21 to 30 years [ ]

f) 31 to 40 years [ ]

g) 41 - 50 years [ ]

h) over 50 years [ ]

11. Kindly indicate how long you have been working at Geonet Ltd?

a) 1 - 2 years [ ]

b) 2 – 3 years [ ]

c) 3 – 4 years [ ]

d) 5 years and above [ ]

12. How satisfied are you with the top management support present in this organization towards ERP Implementation? Elaborate

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.....  
.....

13. Elaborate on your level of satisfaction with the perceived communication aspects and approaches adopted by this organization?

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14. What are the capacity building approaches adopted by this organization towards ERP Implementation? Elaborate.

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15. Explain the effect of capacity building approaches adopted by this organization towards ERP Implementation?

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16. Which are the perceived cultures adopted by this organization towards ERP Implementation? Elaborate

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.....  
.....  
.....

17. What is the effect of perceived cultures adopted by this organization on ERP Implementation?

**Thanks for your Participation**



**Appendix IV: Data Collection Authority Letter from the University**

**Appendix V: NACOSTI Permit Letter**

## **Appendix VI: Turnitin Report**