

**INFLUENCE OF MOBILE TECHNOLOGY ON
PERFORMANCE OF NON GOVERNMENTAL
ORGANIZATIONS: A CASE OF
CARE INTERNATIONAL
IN KENYA**

BY

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DECLARATION

This research project report is my original work and has never been presented for a degree or any award in any other university.

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This research project report has been submitted for examination with my approval as the University supervisor

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DEDICATION

This research project report is dedicated to my beloved wife Peres Achieng' and my son Blessing Otieno for giving me ample time to undertake my studies which deprived them my presence and attention

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LIST OF ABBREVIATIONS AND ACRONYMS

CDMA:	Code Division Multiple Access
CIK:	Care International in Kenya
CCK:	Communications Commission of Kenya
R&D:	Research and Development
STI:	Science, Technology and Innovation
NGO:	Non Governmental Organization
MDGs:	Millennium Development Goals
DDI:	Direct Dial Inwards
PC:	Personal Computer
IT:	Information Technology
PDA:	Personal Data Assistant
GPS:	Global Positioning System
GSM:	Global System for Mobile communications
GPRS:	General Packet Radio Service
WAP:	Wireless Application Protocol
2G:	Second generation mobile telephony
3G:	Third generation mobile telephony
4G:	Fourth generation mobile telephony

ABSTRACT

This research sought to investigate the influence of mobile technology on the performance of non-governmental organizations taking the case of CARE International in Kenya. The study was guided by four objectives: To establish how automated work steps using mobile technology influences performance in Care International in Kenya; to determine how the level of access to information using mobile technology influences the performance in Care International in Kenya; to examine how time management practices using mobile technology influences performance in Care International in Kenya and lastly to assess how cost saving practices using mobile technology influences performance in Care International in Kenya. The study was supported by a comprehensive literature review in Chapter two. The study adopted the descriptive research design. Probability sampling technique was used in selection of study sample. A set of questionnaires were used for the collection of data from the staffs of CARE International in Kenya. Data collected was analyzed using Statistical Package for Social Sciences (SPSS) software and Microsoft Excel. Pearson's Product Moment Correlation was computed at $p \leq 0.05$ level of significance to show the relationship between the variables. The study findings revealed that there was positive influence of automation of work steps, access to information, time management practices and cost saving practices using mobile technology on performance of CARE International in Kenya. Following the findings, the study concluded that, automated work steps using mobile technology influences performance in Care International in Kenya with improved quality of the products or services, increased chance of consistency, high efficiency, improved productivity, increased accountability and transparency. It was also concluded that ease of access to information, flexibility and timely decision making were central to information sharing and knowledge management which influences performance of an organization. . The study showed that without mobile technology poor time management was witnessed. Efficiency and effectiveness of the tasks, appointments and planning for events was made easy by mobile technology. The reliance on manual paper based systems was found to be very expensive. It is hoped that the findings of this study would provide essential information and add to the body of knowledge in the area of mobile technology implementation in non-governmental organizations.

CHAPTER ONE: INTRODUCTION

1.1 Background to the study

Information Technology (IT) is a critical resource for creating organizational value (Kohli and Devaraj, 2004). It also has the capability to transform the nature of products, processes, companies, industries, and even competition itself. Mobile technology has emerged as the next wave in IT revolution. (Nah *et al.*, 2005). Many experts argue that the future of computer technology rests in mobile computing with wireless networking. The most obvious answer is the sheer scale of adoption. In the ten years before 2009, mobile phone penetration rose from 12 percent of the global population to nearly 76 percent. A series of innovations drove this adoption, especially in developing countries, which had 73 percent of the world's mobile phones in 2010 (World Bank, 2010)

According to the Pew Internet Project, as at May 2013, 91% of American adults have a cell phone, 56% of American adults have a Smartphone, 28% of cell owners own an Android; 25% own an iPhone and 4% own a Blackberry. As of September 2013, 24% of Americans ages 16 and older own an e-reader and 35% of Americans ages 16 and older own a tablet computer. 67% of cell owners find themselves checking their phone for messages, alerts, or calls - even when they don't notice their phone ringing or vibrating, 44% of cell owners have slept with their phone next to their bed because they wanted to make sure they didn't miss any calls, text messages, or other updates during the night and 29% of cell owners describe their cell phone as "something they can't imagine living without." An April 2012 survey finds that some 70% of all cell phone owners and 86% of smart phone owners have used their phones in the previous 30 days to perform at least one of the following activities: Coordinate a meeting or get-together - 41% of cell phone owners have done this in the past 30 days; Solve an unexpected problem that they or someone else had encountered - 35% have used their phones to do this in the past 30 days; Decide whether to visit a business, such as a restaurant - 30% have used their phone to do this in the past 30 days; Find information to help settle an argument they were having - 27% have used their phone to get information for that reason in the past 30 days; Look up a score of a sporting event - 23% have used their phone to do that in the past 30 days; Get up-to-the-minute traffic or public transit information to find the fastest way to

get somewhere -20% have used their phone to get that kind of information in the past 30 days; Get help in an emergency situation -19% have used their phone to do that in the past 30 days(Brenner ,2013)

According to Wikipedia (2013), mobile technology in Africa is the fastest growing market. Nowhere is the effect more dramatic than in Africa, where mobile technology often represents the first modern infrastructure of any kind. Only 10% of Africans have access to the internet, the lowest percentage in the world. However, 50% of Africans have mobile phones and their penetration is expanding rapidly. This means that mobile technology is the largest platform in Africa. Mobile technology is a key driver for future economic growth on the continent, and Africa may well be on its way to becoming a hub of technology innovation for the whole planet, despite its many infrastructural challenges. Mobile technology is gaining importance and popularity in organizations (Gayeski, 2002; Andersen *et al.*, 2003). Examples of applications of mobile technology in organizations include mobile access to company Intranet (Nah *et al*, 2005), mobile brokerage services, mobile payment and banking services (Herzberg, 2003), and electronic procurement application systems based on WAP using mobile phones and laptops (Gebauer and Shaw, 2004).

Five years ago, the idea of using cell phones to improve health care for mothers, infants and children wasn't feasible. That has changed rapidly.70 percent of the world's 5 billion cell phone subscribers are in the developing world. Today almost 90 percent of the world's population has access to a wireless telephone signal About three quarters of mobile phone users have texting capability and features such as Global Positioning System (GPS) that can pinpoint their location. By 2015, about 60 percent of mobile phones are expected to be web-enabled. These networks are being extended almost everywhere. People are paying for the devices and the service, which shows that people value access to information and the ability to communicate, and that includes health information and communication (Quiang et al, 2011)

The Kenyan Vision 2030 proposes intensified application of Science, Technology and Innovation (STI) to raise productivity and efficiency levels across the three pillars (Government of the Republic of Kenya, 2007). It recognizes the critical role played by research and development (R&D) in accelerating economic development in all the newly

industrializing countries of the world. The Government will create and implement Science, Technology and Innovation (STI) policy framework to support Vision 2030. More resources will be devoted to scientific research, technical capabilities of the workforce, and in raising the quality of teaching mathematics, science and technology in schools, polytechnics and universities. The normal reasons for taking up mobile technology would be to spread the use of technology in every Kenyan household and yet to catapult the older generation to the same tech-level as the young generation but there is more to this craze. The revolution for technologists would be then ripe but so would that of the Kenyan citizens.

However, the prior literature has focused mainly on the “what” question – that is, what is the impact of mobile technology on performance of organizations. The “how” question, that is, how mobile technology impacts on performance organizations, is still under-explored. Further, to assess the impact of a specific resource, the “how” approach is more appropriate than the “what” approach in assessing firm performance .This is because a resource changes the processes in an organization which in turn changes its competitive potential. Hence, the “how” approach provides a deeper and more insightful understanding of how a resource helps an organization gain strategic advantages. On the other hand, the “what” approach may assess firm performance which is the outcome of the aggregate effect of multiple business processes supported by various resources (Nah et al, 2005).

Since mobile technology is a fairly new phenomenon, its organizational and strategic implications have not been systematically studied. This study fills the void by examining the strategic implications of mobile technology in a leading non-governmental organization that has realized the importance of mobile technology.

1.2 Statement of the Problem

The strategic importance of mobile technology in improving performance in organizations cannot be underestimated. Adoption and advancement of mobile technology creates opportunities for new and innovative services that can be provided through mobile devices. The emergence of mobile technology affects a number of organizations and impacts their operations (Barnes, 2002).Previous studies have shown

that embracing IT can bring substantial cost savings (Mukhopadhyay *et al.*, 1995) and can positively influence the financial performance of organizations (Hitt and Brynjolfsson, 1996; Bharadwaj, 1999). Prior literature also suggests that IT can benefit organizations by enabling better customer services (Quinn and Baily, 1994), providing superior product quality (Bakos and Treacy, 1986; Ives and Learmonth, 1984), and creating competitive advantages.

For years, NGOs have gained recognition in the global world for service delivery, problem solving, advocacy and policy making. According to World Bank (2011), the NGO sector is the eighth largest economy in the world with over \$1 trillion a year globally and employing more than 19 million paid workers and countless volunteers with billions of dollars flowing into the developing world. Donors fund programs based on their efficient and effective utilization of resources taking cognizance of the continued diminishing and elusive scarcity.

Care International in Kenya and other NGOs finds themselves in the resource scarce field where performance among other factors forms the basis for support. Organizations therefore have to be up to the task in the competitive structure of providing services by embracing methods and practices that would enhance efficiency and effectiveness. It was against this background that this study sought to find out the influence of mobile technology on performance of NGOs with specific reference to Care International in Kenya.

1.3 Purpose of the study

The purpose of this study was to investigate how mobile technology influences performance of non-governmental organization taking CARE International in Kenya as a case.

1.4 Research Objectives

The study was specifically guided by the following objectives:

1. To establish how automated work steps using mobile technology influences performance in Care International in Kenya.

2. To determine how the level of access to information using mobile technology influences the performance in Care International in Kenya
3. To examine how time management practices using mobile technology influences performance in Care International in Kenya.
4. To assess how cost saving practices using mobile technology influences performance in Care International in Kenya

1.5 Research questions

The study sought to answer the following research questions:

1. How do automated work steps using mobile technology influence performance in Care International in Kenya?
2. How do access to information using mobile technology influence performance in Care International in Kenya?
3. To what extent does time management practices using mobile technology influence performance in Care International in Kenya?
4. To what extent does cost saving using mobile technology influence performance in Care International in Kenya?

1.6. Research Hypothesis

In order to achieve the above objectives, the following null hypotheses were formulated to guide the research:

H₀₁: There is no significant relationship between automated work steps using mobile technology and performance of Care International in Kenya

H₀₂: There is no significant relationship between access to information using mobile technology and performance in Care International in Kenya

H₀₃: There is no significant relationship between time management practices using mobile technology and performance in Care International in Kenya.

H₀₄: There is no significant relationship between cost saving practices using mobile technology and performance in Care International in Kenya

1.7. Significance of the study

This study was intended to examine how utilization of mobile technology influences performance of Care International in Kenya, a non-governmental organization. It was hoped that the results of this study would be used to draw the attention of program managers within Care International in Kenya on the importance of mobile technology on performance. Secondly, it was hoped that the study would enable the country office of CIK to appreciate the situation of mobile technology use within the organization with the aim of creating policies. It also sought to generate knowledge in the research area in order to fill in the existing knowledge gaps in utilization of mobile technology by organizations beyond Care International in Kenya. Its application would yield better methods of mobile technology application including development of NGO specific software and the eventual results would be availability of handheld technology for use as well as improved knowledge and skills.

1.8. Basic Assumptions

This study assumed that the respondents provided correct and truthful responses to the questions sought by the research instrument used. It also assumed that the views of the respondents used for the study were representative of the entire population , hence making generalization of the findings possible.

1.9. Limitations of the study

The study focused on the influence of mobile technology on the performance of a non-governmental organization, CARE International in Kenya. Any other organization was not considered in reporting the findings.

1.10. Delimitations of the study

The study was conducted among the staffs of Care International in Kenya through the use of questionnaires where they provided information on influence of mobile technology on performance of non-governmental organization. The staffs of Care International in Kenya were considered based on their regional coverage and field activities. Their experience on mobile technology use made it easier to conduct this study.

1.11. Definition of significant terms as used in the study

Mobile devices refer to a variety of devices that allow people to access data and information from where ever they are. This includes cell phones and portable devices.

Technology is a branch of knowledge that deals with the creation and use of technical means and their interrelation with life, society and environment

Mobile Technology refers to the technology used in cellular communication involving GSM and CDMA technologies

Non-governmental organization is a legally constituted corporation created by natural or legal people that operate independently from any form of government.

Organizational Performance refers to the actual output or results of an organization as measured against its intended outputs (or goals and objectives).

Knowledge management refers to a concept in which an organization consciously and comprehensively gathers and organizes a range of strategies and practices used to identify, create, represent, distribute, and enable adoption of insights and experiences.

1.12. Organization of the study

This research project contains five chapters. Chapter one which is the introduction gives the background to the study, statement of the problem, research objectives, questions and hypothesis that are guiding the study. It also contains significance of the study, limitations, delimitations and significance of the study. The significant terms as used in the study have also been defined.

Chapter two contains a comprehensive literature review of related studies and publications conducted regarding the influence of mobile technology in performance of non-governmental organizations. This section also contains a conceptual framework, theoretical framework and the operational definition that gives the relationship between the variables.

Chapter three gives a description of the methodology used in the study. The research design, sampling procedure, method of sample collection and determination are explained. The methods of data collection, analysis and presentation are discussed. The chapter is concluded with the operational definition of variables which associates the research objectives with the methodology and provides a guide to the expected results.

Chapter Four contains the presentation and interpretation of the findings arising from data analysis using the techniques described in chapter three. The chapter also contains the discussions of the findings. The findings are presented in form of tables accompanied by explanations of the findings.

Finally Chapter five contains summary of the findings, conclusion and research recommendations. The chapter also outlines suggested areas for further research and is concluded with a section of the study's contribution to the body of knowledge.

CHAPTER TWO

LITERATURE REVIEW

2.0: Introduction

This chapter reviewed literature on the themes of mobile technology influencing performance which include automation of work steps, access to information, time management practices and cost saving practices. The chapter concludes with a conceptual framework showing a diagrammatical presentation of the relationship between the independent variables and the dependent variable after a summary of the chapter.

2.1: Concept of mobile technology in organizations

According to a survey by Kinkade et al (2008), eight-six percent of NGO employees are using mobile technology in their work. NGO representatives working on projects in Africa or Asia are more likely to be mobile technology users than their colleagues in areas with more ‘wired’ infrastructures. Ninety-nine percent of technology users characterize the impact of mobile technology as positive. Moreover, nearly a quarter describe this technology as “revolutionary” and another 31 percent say it would be difficult to do their jobs without it.

While voice and text messaging are still the most common applications of mobile technology among NGO workers, respondents report using wireless technology in a number of other ways, including photo and video (39 percent); data collection or transfer (28 percent); and multi-media messaging (27 percent). The survey also finds some NGO workers using mobile technology for more sophisticated purposes such as data analysis (8 percent), inventory management (8 percent), and mapping (10 percent). Importantly, the amount of money invested in mobile technology correlates to a higher diversity of application; those NGOs that spend more use this technology for higher-end functions. Users of mobile technology on projects with a health focus are also more likely to use mobile technology for data purposes.

The survey reveals that the key benefits of mobile technology for all NGOs include time savings (95 percent); the ability to quickly mobilize or organize individuals (91 percent); reaching audiences that were previously difficult or impossible to reach (74 percent); the ability to transmit data more quickly and accurately (67 percent); and the ability to gather data more quickly and accurately (59 percent). Not surprisingly, then, 76 percent of NGO

users said they would likely increase their use of mobile technology in the future. Mobile technology allows people to use company data and resources without being tied to a single location. Whether your staffs are travelling to meetings, out on sales calls, working from a client's site or from home anywhere on the globe, mobile devices can help them keep in touch, be productive, and make use of company resources

Organizations have recognized that knowledge constitutes a valuable intangible asset for creating and sustaining competitive advantages. Knowledge sharing activities are generally supported by knowledge management systems. However, technology constitutes only one of the many factors that affect the sharing of knowledge in organizations, such as organizational culture, trust, and incentives (Tenhunen,2008) Against this fast-moving mobile background it is clear that just having mobile access to e-mail is profoundly insufficient for increasing productivity and producing better-informed employees. The integration of mobile devices such as laptops, tablet computers, PDAs and smart phones, along with their various applications and software, make it easier than ever for workers to collaborate and organizations to communicate with staff, clients, and vendors.

2.2: State of mobile technology in the world

In a study by Schlosser (2002), it was found that innovative ways of using technology were shaped by individual needs as users adapted their message contexts, social etiquette, self-impressions, and ways of doing business. In one pilot project in Aceh Besar, Indonesia, a group of midwives were provided with mobile phones and their use and experiences documented. Those midwives who were given the phones found them a "basic necessity." The main benefit was the ease of communication. Midwives reported an increase in patient load because they could be contacted so easily. They also found they could get advice and information more readily, especially during emergencies, and could refer patients to the hospital when needed. Midwives were able to consult patients more often and provide a regular check of their condition, then enter the information into the patient's record, which could be updated and accessed via the mobile phone. The infrastructure problem in remote areas where road network was often poor the midwives handy and local language was no longer a barrier.

Mobile devices are also used to collect real-time data in disaster management. In moments of urgent needs, m-health applications can help relief agencies and health systems target resources. Ushahidi and Tufts University developed a crisis map of Haiti after its devastating earthquake in 2010. The map was built using real-time data from incident reports submitted using SMS, the Internet, and email. It was the most comprehensive, timely view of humanitarian issues including public health incidents, infrastructure damage, natural hazards, security threats, and available services. More than 3,000 urgent reports were mapped after the earthquake, informing the actions of responders and prioritization of resource use (Qiang et al, 2011)

2.3: State of mobile technology in Africa

Mobile technology in Africa is the fastest growing market. Nowhere is the effect more dramatic than in Africa, where mobile technology often represents the first modern infrastructure of any kind with at least 50% of Africans having mobile phones and their penetration is expanding rapidly. According to the World Bank, Sub-Saharan Africa is now home to approximately 650 million mobile phone subscribers, a number that surpasses the United States and European Union, and represents an explosion of new communication technologies that are being tailored to the developing world. The rise in the use of mobile phones has brought opportunities for employment and new businesses. Many Africans now use mobile money to pay their bills and airtime, buy goods and make payments to individuals, remittances from relatives living abroad are also largely done via mobile banking. In Kenya, Sudan and Gabon half or more of adults used mobile money, according to a survey by the Gates Foundation and the World Bank(World Bank,2012).

Mobiles have been finding innovative uses in refugee camps, allowing displaced persons to reconnect with family and loved ones(Srinuan, Srinuan, & Bohlin 2012).An NGO, Refugees United, has teamed up with mobile phone companies to create a database for refugees to register their personal details. The information available on the database allows them to search for people they've lost contact with in the past (Ling, 2004).

Mobile phones have made a huge difference in the lives of farmers in a continent where the agriculture sector is one of the largest employers. Most of these people will be "smallholder farmers," without access to financing or technology.

By serving as platforms for sharing weather information, market prices, and micro-insurance schemes, mobile phones are allowing Africa's farmers to make better decisions, translating into higher-earning potentials. Farmers are able to send a text message to find out crop prices in places thousands of kilometers away. Africa has used mobile phones to create a radically new way of transferring money, thereby restructuring the banking sector. Mobile technology is on the verge of transforming other traditional industries including education and health, among others. In education, Africa can leapfrog into digital books and mobile learning to become a leading source of new educational businesses and industries. In healthcare, mobile technology will transform the very idea of a hospital. Much of healthcare will shift to homes that will in future be redesigned to function as extensions of hospitals. Similarly, new businesses and industries will grow out of it (World Bank, 2012).

According to the World Health Organization (WHO), immunization is the most cost-effective public health intervention after the provision of clean water. More than a million children die each year from vaccine-preventable diseases, while every fifth child in Africa remains unimmunized, the organization says. A number of other African nations have started to use mobile technology in some areas of public health care. Tanzania uses mobile stock management technology to track malaria treatments in 5,000 clinics across the country. In South Africa, 1,800 remote community health workers use mobile phones to access and update patient records. In Ghana a local NGO helped notify mothers about the new immunizations through SMS when they rolled the rotavirus and pneumococcal vaccines. South Sudan, supported by the WHO, began to manage vaccine stocks through mobile technology in mid-2012 in its central and state stores, while Rwanda's health ministry uses mobile phones to monitor maternal and child mortality.

Using mobiles for data collection is increasingly common in the development community, particularly in the area of public service delivery. For example, UNICEF Ethiopia implemented a Rapid SMS programme for fieldworkers to monitor food shortages across the country. They were trained to record data with their mobile phone

and transmit it via SMS to central servers for analysis, allowing immediate response to emerging crisis. In the health sector, applications have also be developed, using video, audio, touch screen quizzes, GPS and SMS to collect, store, transmit and analyze large amounts of health related data (Mobileactive.org, 2011).

2.4: State of mobile technology in East Africa

In Tanzania, texts are being used to help eradicate obstetric fistula, a debilitating condition that causes millions of stillbirths across Africa and can make social outcasts of the mothers who suffer from it. The condition can be corrected with a simple £250 operation but many sufferers either don't know they can be cured or cannot afford to travel to the hospital. "We have a nice big hospital, full of good doctors, but no patients," said Tom Vanneste, deputy director of a local NGO, Comprehensive Community Based Rehabilitation in Tanzania, which provides treatment for obstetric fistula."(Garside, 2012)The problem has been noticed by Vodacom, the country's biggest mobile phone network, which appointed a team of 60 "ambassadors", to travel around the country diagnosing women with the condition. Within an hour of an ambassador finding a patient, a date is set for surgery and money for transport is texted to the ambassador, who takes the patient to the bus stop.

In Uganda for example, the CU@school project facilitates the monitoring of pupils and teacher attendance in primary schools by using an SMS based information system. The project intends to pilot an SMS application that generates frequent and detailed overviews of teacher and pupils' attendance in 100 primary schools in 2 districts (Hellström, J., 2010).

2.5. State of mobile technology in Kenya

As per Communication Commission of Kenya (2012) statistics there are 29.2 million mobile subscribers with a mobile penetration of 74% in Kenya. Improved connectivity in Kenya is accelerating economic growth, creating jobs and enhancing access to education (Ramah, 2013). According to Qiang et al, 2011, the creators of ChildCount+ saw that many children in rural Sauri, Kenya were dying from easily treatable diseases. In response, they secured inputs including technology from Zain and Sony Ericsson,

financing from the United Nations Children's Fund (UNICEF) and the Millennium Villages Project, and support from the Kenyan government. These efforts resulted in an m-health service that tracks health and monitoring risks, registered more than 9,000 children in its pilot year, and is expected to support continuous reductions in child and maternal mortality

Mobile phone technology represents something akin to a poor man's web. It has come into play largely in the context of electoral results and political unrest. Users tell each other about attempts at fraud or violent incidents that they have observed first hand and forward this information to central bureaucracies or foreign NGOs. In Kenya, a software program called „Ushahidi“(Swahili for testimony) was developed precisely for this purpose. It allows users to combine Google maps, images, and text messages in their reporting on crises or incidents of the abuse of power. It helps them coordinate their responses as well.

2.6: Influence of automation of work steps using mobile technology on organizational performance

According to Kluwer (2013), implementing an automated workflow solution can streamline project management to be more efficient and effective while also gaining better visibility into projects and activities. All organizations are trying to do more with less, and competition remains strong (Barnes, 2002). At the same time, increasingly complex regulations and rapidly changing technology influences organizations take to enhance performance. They must look for innovative ways to enhance their services. Improving processes and leveraging electronic workflow applications can be an important step towards improving competitiveness which can help the team attain a whole new level of efficiency that will improve profitability, performance and client service and satisfaction (Andersen, Fogeigren-Pedersen, Varshney 2003). Mobile technology becomes the greatest innovation towards achieving competitive advantage.

Most organizations are hindered by many inefficient internal processes that reduce productivity. Redundant processes require staff to perform unnecessary steps (Bakos and Treacy, 1986) which limits efficiency and effectiveness. Szlemp, 2013 states that with a tablet PC in hand, field staffs do not need to “tag up” with the office. They can receive

work assignments, complete the work, electronically sign it, and upload reports and other files right away and move on to the next job. If necessary, they can instantly communicate with their supervisors to make scheduling changes on the go and at the same date, time and location do stamping that supports work order fulfillment enabling automatic time sheet recording and electronic billing, too. That saves time across the board. Retaining a competitive position depends on getting field work done faster, in greater detail, more accurately and completely. A tablet PC as a mobile device makes this a reality because it ensures durability, reliability and top performance everywhere and everywhere with ease.

Client data often floats among several data sources that are not connected or accessible to all team members. Inconsistent processes among partners create confusion within the organization and frustration among the staff (Anderson, Banker and Ravindran 2003). Essentially, these inefficiencies result in a lack of transparency that makes it difficult to share information, know the status of projects and hold team members accountable. According to Barua, Kriebel and Mukhopadhyay, 1995 and Hitt and Brynjolfsson, 1996, without an automated, centralized project management system, a program's workflow may be only a series of disorganized stops and start.

According to Grönlund et al (2010) effective use of technology is essential to gaining timely, accurate and transparent data. Lack of speed, insufficient accuracy and/or control, dependence on manual processes and ineffective decision support are reasons enough for automation to remove human agents and hence corruption opportunities from operations. Information technology and more so mobile technology facilitates the collection of digital footprints and complete audit trail which increase the opportunity to hold individuals accountable and ultimately increase the possibility to detect corrupt practices. According to Szlemp(2013), a tablet PC has surfaced as the preferred choice to help workers at any remote location indoors or out work faster and more accurately. With a tablet PC in hand, one can manage inventory and assets by tracking the warehouse activities and the supply chain, manage official records such as applications, permits, licenses, inspection reports or tax records in the office or in archives using bar code tracking to establish chain of custody for regulatory or other compliance needs, collecting

field data and immediately uploading it to the central database so that it is universally available, coordinating emergency management activities and enhancing security.

In the past certain industries notably agriculture, utilities and logistics have always had large populations of personnel working in the field, but today workers in virtually every industry are more mobile than ever and staffs of non-governmental organizations are not left out in this high mobility. They are working remotely and are literally on the move. Many field workers now rely on mobile devices such as a tablet PC to add agility and automate their work. Nonetheless, adoption of mobile tools that can streamline work flow and improve productivity in the field is far less widespread than expected. Organizations have a wide opportunity to turn tables in today's rapidly-evolving and highly competitive environment to substantially increase efficiencies (Szlemp, 2013).

Embracing mobile technology and automated processes enable one to capture broad benefits and reduce costs, making it easier to retain customers and turn a profit. Increased automation allows staffs in the organization to be more productive because they're performing tasks that matter rather than tedious, time-consuming manual paperwork. Automation enables the management and the field force to coordinate operations with real-time visibility regardless of location. Paperwork and manual entry are notoriously prone to mistakes and omissions. They take up precious time, and the work is often redundant. We no longer have those time and cost luxuries.

2.7: Influence of access to information using mobile technology on organizational performance

Mobile technology has extended computing and the internet to the wireless medium, thus providing more freedom to individuals in their personal life and at work (Jarvenpaa *et al.*, 2003). Although mobile devices have proliferated wildly, organizations have barely begun to tap the potentials of mobility. These new capabilities can help increase the efficiency of processes, improve decision making, and deliver (and collect) accurate information, all at speeds approximating, if not reaching, real time. New technologies transform the ways organizations can monitor and manage their own performance, accelerating the cadence of their actions and driving improved performance.

The most touted advantage of mobile technology is mobility (Sarker and Wells, 2003). Everywhere people have enthusiastically embraced mobility and have incorporated mobile devices into almost every aspect of their everyday lives. While organizations have begun to implement mobile strategy and tools, mobility has its greatest transformative potential in providing access to information, both for the execution of day-to-day operations and, at the management level, for improved and accelerated strategic decision-making and competitive response enabled by anytime, anywhere computing (Varshney and Vetter, 2000; Davis, 2002).

Anytime, anyplace computing can remove time and space constraints in accessing critical information and enhance capabilities for communication, coordination, collaboration, and knowledge exchange (Davis, 2002). Mobile technology offers enterprises the ability to access information without the built-in restrictions of a physical corporate network connection. Through mobile devices, access to information can be both simple and secure, providing a flow of data equal to that available through a workstation without the geographical and technological limitations of workstation access. Users of mobile technology can have access to the internet and mobile applications whenever the need arises, such as when “traveling, wandering, and visiting” (Sarker and Wells, 2003).

Therefore, mobile technology can result in efficiency and productivity as users can make better use of their time and attend to business and social obligations in real-time (Sarker and Wells, 2003; Jarvenpaa *et al.*, 2003). Varshney and Vetter (2000) also argued that mobile technology can provide the flexibility required by the mobile work force. Mobile technology can support an organization’s activities throughout its value chain (Barnes, 2003) and impact the organization’s competitive advantage (Porter and Millar, 1985). Mobile technology can provide a number of benefits to organizations, such as connectivity, flexibility, interactivity, and location awareness. These benefits can help to increase the efficiency and effectiveness of an organization’s value activities, and to transform business processes (Barnes, 2003).

Tablet computing will provide collection and distribution points for mobile reports, and will serve as portals for immediate decisions; smart phones, and mobile devices in general, will allow easy, continuous access to real-time performance metrics; mobile applications and their convenient, un-tethered access to data will promote more efficient

and effective analysis to drive sound decision-making; real time access to performance management information from across the enterprise will become a key competitive and differentiation strategy; and due to the ease of use, portability and intuitive features of mobile devices, managers at all levels will be able to make informed decisions based on the most accurate, up to-date information available.

Mobility can support work-shifting allowing employees to work from a variety of remote locations (often alongside the clients)—and timely, effective decision making, leading to better allocation of resources. Field users can put new data into the system and push it back out to the rest of the field. With the use of mobile technologies, it is possible to access critical data at every time and at every place (Sheng, Nah and Siau, 2005). This leads to a lowering influence of the effect of the task complexity because with the help of mobile technologies the worker can see the state of the different work steps directly on his/her mobile device. Workers don't have to walk around for this information. The result of using the technology is that the duration until the workers find out about the state of different work steps is lower because they have to walk around less on the construction site than without the technology. So the process of finding/getting information is more efficient (Bowden, Dorr, Thorpe and Anumba, 2006).

According to Grimm et al(2005), mobile technology devices have been used widely by people to effectively run their business as they provide powerful communication and mobility. It's time now to utilize powerful features of such devices in the process of learning. Prevailing trends in e-learning and Knowledge Management (KM) projects have been enhanced by their increasing relativity in technological arena. Widespread availability of mobile devices and wireless networks offer enormous opportunities for knowledge acquisition both in terms of interaction with sources of information and in terms of collaboration. Development in microelectronics and telecommunication technologies provide continuing increase of processing power, improved interfaces, extended functionality, fast and diverse wireless connectivity for mobile terminals. Combined with tendency to go down in price per unit and having advantage of being truly personal mobile devices have a potential to become a valuable learning and information acquisition tool for everyone.

Knowledge management is a discipline that promotes an integrated approach to identifying and sharing all of an organization's knowledge assets including unarticulated expertise and experience resident in individual workers. In other words, knowledge management is taking advantage of what you know. It involves the identification and analysis of available and required knowledge, and subsequent planning and control of actions to develop knowledge assets so as to fulfill organizational objectives. Taking together the rapid developments in the field of technology, allowing more and more mobile processes to be potentially supported through mobile knowledge management systems, as well as the current social and occupational developments, resulting in more mobile workplaces and business processes, the relevance of mobile knowledge management can be expected to increase in the future (Volker and Key, 2011).

Even though there are a lot of cool mobile gadgets and technologies, these are only a small part of what mobility is about. Mobile technologies have enabled new business models, new ways of selling, new ways of marketing, new ways of delivering products and services. It is a big deal. Organizations that do not prioritize mobile technologies and study how these technologies are changing their activities and competitive landscapes risk obsolescence (Kevin, 2012). With mobile technology, your NGO beneficiaries should be able to provide you field-level data from their projects in real time. Having access to ongoing data, instead of one-time annual report, allows you to understand the real impact your support is having at the field level.

For decision making to occur, data needs to be converted to information, then to knowledge and rapidly to wisdom. Whilst Information Communication Technology (ICT) solutions facilitate decision making, ICT has not always been effective in providing the critical "data to wisdom" conversion necessary for real-time decision making on any device anywhere anytime. This lack of effectiveness in real-time decision making has been further hampered by a dependence upon location and time. Mobile technologies provide an opportunity to enhance decision making by freeing users from complex information management requirements and enabling real-time decision making on any device anywhere anytime. Resolution of the data – knowledge conversion allows the right information to be presented at the right time in the right way to the right audience, providing two advantages. Firstly, the need for users to have advanced

information management skills to complete the most rudimentary of tasks is reduced. Secondly, the difficulty of managing information on the small screen of current mobile devices is removed. Resolution of the data – knowledge conversion to service both business and mobile business will allow mobility to realize its true significance through the provision of real time decision making and provide business with a major competitive advantage (Sherringham and Bhuvan, 2009).

Like many fields, project management is being affected by the introduction of the new systems and technologies that can be used to manage project teams. Project teams are increasingly using mobile technologies to collaborate and communicate with teams remotely, stay updated on tasks and priorities as they develop. Mobile-ready features like wikis, emails, blogs, discussion forums, chat, notifications and real-time updates can help project managers to get more done, in less time, with fewer resources. Mobile integration can directly enhance project management by promoting the sharing of critical project-related information. Many mobile features are designed to enable project teams to be instantly notified of any changes made to the status of a project, as well as track changes of online documents in tasks and projects. In addition, project managers can keep track of change made to an item, when and by whom. Finally, the ability to set reminders is definitely useful. As we all know, project managers can be like alarm clocks, always chasing after team members to remind them of upcoming deadlines and outstanding tasks (Constantinides, 2013).

Improved communication between internal and external team members is another area where mobile integration has become useful. It is becoming more and more common for teams to work remotely across geographic locations. Naturally, the physical distance that this creates makes it more difficult to communicate and work closely together. Mobile features such as discussions, video conferencing and chat applications, have enabled not only business partners and employees to stay connected, but also enabled the customer to connect and “get in on the conversation” as well. Real-time access to project data, anytime, anywhere is an area that cannot be underrated. It’s 3 a.m. and your project team is sound asleep, and you need to double-check some numbers for the big road mapping meeting tomorrow. Well, needless to say that technology has given us the ability to get access to information whenever we want it (Constantinides, 2013).

2.8: Influence of time management practices using mobile technology on organizational performance

Today many institutions and organizations are facing serious problems due to increasing size of documents which trigger storage and retrieval problems due to continuously growing space and efficiency requirements. The demand and challenge seeks for the development of more efficient storage and retrieval system of electronic documents. Accomplishing a paperless office is a major concern for many organizations and controlling the flow of information to enable faster and easier retrieval is not a secret that technology can help keep workers on task and improve their time management skills (Morgan, 2009). E-mails for example have brought an instant gratification as compared to the length of time it used to take to send a message to someone via postal service. With the advent of technology, the mounds of paper that used to litter offices due to manual cataloging is no longer an issue. According to Valcan (2013), technology allows us to keep that same information in a digital format, and best of all, allows us to search for it by title and keyword so it's there when we need it. The ability to find the information quickly when we need it is a big time-saver (Dessel and Erwin, 2000).

Many organizations and individuals find great success in managing time by using online scheduling, calendars and time clock technology (Morgan, 2009 and Brandon, 2012). A calendar kept on a personal device such as an iPhone or BlackBerry can be synched with a larger company or business calendar, thereby saving time in entering the information in multiple locations, or having to inform co-workers about your whereabouts. By using these tools, other workers know when you're in or out of the office, when you have a meeting set up and other information that keeps them from spending time tracking you down. (Norren and Osman, 2012; Valcan, 2013 and Quinn and Baily, 1994).

Employee scheduling software can be an essential part of everyday business processes by automating typically tedious business administration. By providing large amounts of data, management teams can use that data to form opinions and create actionable plans leading to better achievement of contracted service level agreements, field workers completing more jobs per day, improved worker, equipment and vehicle utilization, increased transparency of field operations, minimized job administration costs and reduced unproductive workforce due to over scheduling. Having field staff work from

scheduling systems that are integrated removes the requirement for schedules to be rekeyed or printed and posted. Access to real-time information indicates that not only will the activity of developing and distributing a schedule be more efficient, but also the business will be more effective at responding to any variations, such as urgent new requirements or staff members being unexpectedly unavailable.

When it comes to time and labor management there have always been hurdles that organizations need to clear, or major issues that could affect their ability to accurately track employees' time on the job. As a result of major advancements in technology we see more employees joining the mobile workforce and working from places other than the office all the time. This is great, it allows employees to be more flexible and often times more productive. Unfortunately with these benefits, organizations have also had difficulty in being able to track the time employees are actually on the job when they do not have time collection devices wherever their employees may be. Technology has created apps that allow employees to clock in and out wherever they are working from through their mobile phones. Employees' identity and location can even be verified through facial recognition and GPS technology. Through biometrics organizations can scan finger prints, retinas, and even facial structure to ensure that the individual said to be clocking in is in fact that individual. Tracking time spent on given tasks helps to determine the value received compared to the resources invested.

2.9: Influence of cost saving practices using mobile technology on organizational performance

According to Cunningham (2006), cost saving is one of the key quantitative performance measurement indicators in an organization. Costs help determine the value of doing business in terms of processing and capacity costs. Mobile Technology is a great platform for innovation in any industry, especially with the relatively low cost of development for app software

Organizations are rapidly employing mobile technology to take advantage of simplifying and automating the capture of information in the field and integrating the data back into company systems. Reducing inefficiencies on any single active project can significantly

raise productivity, reduce costs and positively impact the bottom line. After all, corporate results are determined by individual project results (Kohli and Devaraj ,2004).

Nah, Siau and Sheng (2005) observed that a profitable project often hinges on the accuracy and timeliness of tracking job-related costs - particularly labor hours, equipment utilization and daily production data. Manual, paper-based processes require field supervisors to spend hours collecting and verifying multiple pieces of information for each employee every day. A mobile solution replaces paper timesheets by enabling a supervisor to record employee hours against jobs, cost codes and other necessary field information, and then wirelessly send the information to the office. Beyond saving a supervisor hours each day doing paperwork, streamlining the timesheet approval process and seamlessly integrating this information into the company's enterprise system virtually eliminates the inaccuracies and inefficiencies of paper-based time keeping processes (Hall, 2013).

Hall (2013) and Norren and Osman(2012) observed that by automating the collection of labor, equipment and production in the field - using handhelds, PCs, PDAs or Smart phones - supervisors can accurately clock workers in and out, virtually eliminating phantom payroll costs by using real-time scanning to track actual clock-in/out times. These applications improve efficiency and productivity for better management of assets and saves money.

If a solution adds tracking equipment utilization, materials, and receipts, supervisors now have the daily visibility into production needed to more quickly make course corrections while they can still change the outcome (Quinn and Baily, 1994). Reducing data entry costs, increasing field supervisor productivity by eliminating manual time keeping and time spent looking up employee numbers, jobs, cost codes and other necessary information, improving equipment utilization by recording daily use and enabling better financial decision making and improving margins by providing daily production and job visibility are some of the ways mobile technology can create competitive advantage (Bakos and Treacy, 1986; Ives and Learmonth, 1984),.

Organizations gain by going mobile since these software solutions simplify data entry processes, enable a seamless pull of current data directly from the enterprise system, and most importantly the solution is easy to use. In addition, the managers can also benefit

from the back office management tool to enable them review data and set up the information flow easily (Barnes, 2002).

Increasing effectiveness in the field will save companies time, resources and money. By using a mobile solution to capture real-time information in the field, companies can review and monitor costs by project, cost code and location on a daily basis so that they can manage more proactively. It gives companies better control over labor and material costs, equipment usage and job cost tracking (Brown et al., 1995; Hitt and Brynjolfsson, 1996; Bharadwaj, 2000; Santhanam and Hartono, 2003; Melville et al., 2004).

Mukhopadhyay et al.(1995)observes that with significantly improved data accuracy and same-day visibility into active projects, firms can lower production costs, increase productivity and ultimately realize greater profitability. Managing staff by mobile technology can lead to substantial savings leading to reduction of management costs. Inefficiencies associated with rekeying and correcting errors can be reduced (if not eliminated) and opportunities to use staff more effectively explored. In performing tasks, field staff with real time access to work management systems can reduce the costs associated with management of tasks. Use of integrated check lists, providing access to historical information and smart design of data capture all produces savings suggesting that workforce reduce the time it spends here.

Savings can equally be made in recording outcomes. Direct access to customer and work records provides substantial savings around maintaining data. Replacing paper based forms completely eliminates the need for Field Staff to complete and return information that then had to be collated, entered and validated by central staff. Intelligent design of mobile apps reduces costs further by enforcing data quality at the point of entry and removing rework effort. Reporting costs can reduce when data is generated in real time to defined quality standards our research showed the cost associated with reporting on a process's performance could fall by up to 50 %(Melville et al., 2004)

2.10: Theoretical Framework

Much of the research on mobile technology in developing countries does not engage with existing theory, frameworks, constructs, or even literature, despite a dearth of appropriate perspectives. While certainly social research can exist without theory, the use

of theory strengthens a study by providing a framework of concepts, definitions, assumptions, and existing literature. A theory allows a phenomenon not only to be described, but also generalized under particular circumstances. Theory also allows a study to live beyond its origins by more meaningful engagement with future studies. This article notes several communication theories relevant to the study of mobile technology, these include: Diffusion of innovation, domestication, uses and gratification, digital divide and social cohesion and maintenance

Diffusion of innovation is the theory of how, why, and at what rate new ideas and technology spread through social systems (Rogers, 2003). An extensive body of research has brought about considerable theoretical development and empirical support for Rogers' work. A number of studies have used diffusion as a theoretical orientation for mobile phone adoption. One illustrative example is Wei's (2006) finding that the desire to be seen as Western was a motivation for use of pagers and mobile phones in China. This research not only extended diffusion theory to China but also moved beyond demographic variables to lifestyle variables as predictors. Diffusion of innovation is a natural fit for studies of mobile technology in developing countries because of its demonstrated utility for studying technology in such environments as well as its application at both the individual and societal level. Thus, diffusion of innovation can aid understanding in the often misunderstood individual–society interactions in developing countries.

Another theoretical perspective that aligns well with mobile adoption and use is domestication (Haddon, 2003). This theory concentrates on how individuals go through the process of discovering, purchasing, and integrating devices into their lives, and helps to account for how individuals judge others' use of the devices as well as the social consequences of the device. An example is Donner, Gitau, and Marsden (2011) which considers domestication of mobile devices in the absence of experience with a computer. Domestication can be a fruitful theory to use in developing countries because it accounts for social uses and consequences. Understanding cultural and economic variations through domestication enriches both the theory and our insights into mobile technology. The study of media choice of the mobile phone and other information communication technologies is sometimes examined from a uses and gratifications perspective. This

approach is concerned with establishing the linkages between the kinds of motivations an individual might have for media. It has been used to study needs and gratifications in mobile phones (Leung & Wei, 2000; Wei, 2008). This perspective can be well-used in mobile media and communication studies in developing countries. Assumptions about motivations for use in different environments can produce erroneous conclusions. Thus, uses and gratifications could be a base for further investigation without presuppositions. The digital divide, while not a theory, is a popularly used term that originally was created to describe the socioeconomic gap between computer users and non-users. It has been expanded to encompass any divide between people or groups in their awareness, adoption, and use of, and skill with communication technology, although the term “digital divide” generally implies differences in adoption or use based on socioeconomic divisions (Dijk, 2005). Much research on mobile phone use in developing countries references digital divide, although the term is used inconsistently between studies (Srinuan, Srinuan, & Bolin, 2012; Wareham, 2004). Future research conducted in developing countries can help extend the theoretical relevance of the digital divide. Specifically, mobile media and communication in developing countries can provide new perspectives from resource-constrained environments. It is assumed that mobiles are less expensive than personal computers and are therefore a means to leapfrog the digital divide. While there is no empirical evidence for capital-enhancing outcomes from the mobile phone that equal the outcomes of personal computer use, studies that can test policy beliefs will be of great use to development practitioners, policymakers, and scholars. Mobile phones can affect social ties and cohesion. Through small rituals enabled by mobiles throughout the day, individuals maintain social cohesion that was not possible before (Ling, 2004, 2008; Rice & Hagen, 2010). Mobiles can intensify social cohesion in developing countries (Pertierra, 2007; Tenhunen, 2008). And social cohesion explains high adoption of mobile phones in Ghana (Slater & Kwami, 2005) and Armenia (Pearce, 2011). Slater and Kwami's (2005) study of Ghanaian mobile phone users is illuminating in terms of social maintenance. Ghanaians use mobiles to reproduce, manage, and reduce the costs of relational obligations. More studies exploring social cohesion and maintenance can be useful for scholars for mobile media and communication more broadly. As social connections are essential to survival in

developing countries (Pearce, 2011), understanding social connection and cohesion via mobiles in such a context is an important contribution (Horst & Miller, 2006; Pearce, 2012).

2.11: Summary of Literature Review

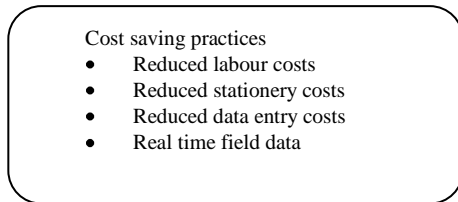
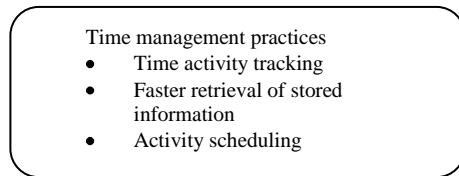
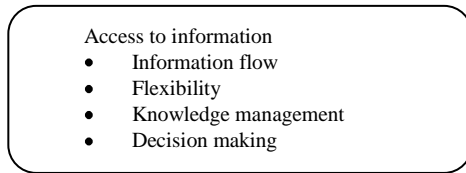
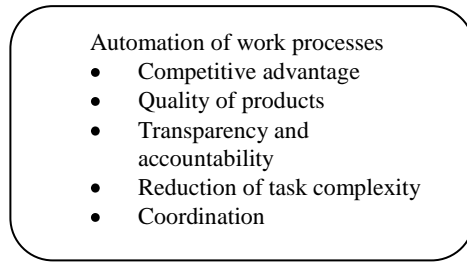
The literature related to the study was reviewed based on the themes identified in the objectives. The first section dealt with how mobile technology has influenced performance in the various parts of the world and other organizations narrowing to the regional level and within Care International in Kenya. The second section dealt with literature on how using mobile technology influences performance through automation of work steps, access to information, time management, error rate levels and cost saving.

Mobile technology has advanced rapidly and significantly, and has shown great promise and potential for organizational use. As demonstrated in this study, mobile technology can be used as a strategic tool in organizations. This study examines the strategic impact of mobile technology on organizations by studying a leading international NGO. The use of the qualitative approach will provide deep insights on the strategic implications of using mobile technology in this organization.

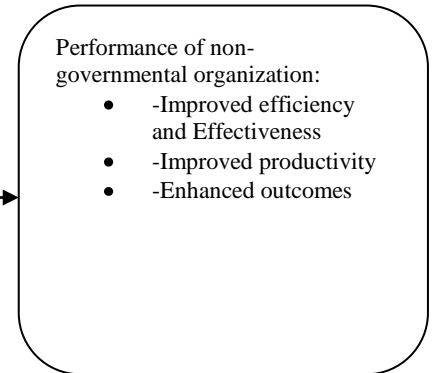
As one of the first empirical studies to examine strategic and organizational implications of mobile technology, this study provides a conceptual foundation for future research in the area. For researchers, it presents a framework and model for understanding and explaining the strategic implications of mobile technology in organizations. Although this research is based on a leading international NGO, we believe the findings will also be applicable to other organizations. For practitioners, this study will present a “roadmap” that can help them achieve company strategies and gain competitive advantage when adopting and implementing mobile technology.

2.12 Conceptual Framework

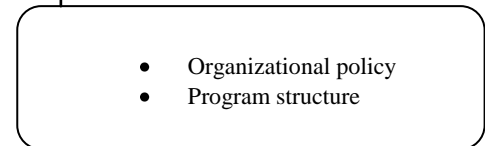
Independent Variable



Dependent Variable



Other Extraneous Variables



CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter deals with the description of the methods and procedures that were followed while carrying out the study. It presents details of the research design to be used in the study, the target population, data collection and analysis techniques and ethical considerations. It also gives an indication of what is expected at the end of the study.

3.2 Research design

This was a descriptive study of a non-governmental organization. The goal was to describe the influence of mobile technology on performance of a non-governmental organization .A descriptive study helps to fully understand phenomena, think about it systematically, and offer ideas for further probing and making simple decisions. Descriptive studies tries to discover answers to who, what, when, where and sometimes, how questions (Mugenda and Mugenda ,2003).

3.3. Target Population

Mugenda and Mugenda (2003) define a population as an entire group of individuals, events or objects having a common observable characteristic. Target population in statistics is the specific population about which information is desired. The target population of this study was all the employees of Care International in Kenya which was a total of 490.

3.4. Sample size and sample selection

Sampling procedure is the process a researcher uses to gather the objects of study from the population such that the selected group contains elements representative of the characteristics found in the entire group (Orodho and Okombo, 2002). This is discussed below.

3.4.1 Sampling size

Sampling was based on the Krejcie and Morgan as shown in the table below where N=Population and n=Sample Size.

Table 3.1: Sample size

Table for Determining Sample Size from a Given Populations

N	n	N	n	N	n
10	-10	220	-140	1200	-291
15	-14	230	-144	1300	-297
20	-19	240	-148	1400	-302
25	-24	250	-152	1500	-306
30	-28	260	-155	1600	-310
35	-32	270	-159	1700	-313
40	-36	280	-162	1800	-317
45	-40	290	-165	1900	-320
50	-44	300	-169	2000	-322
55	-48	320	-175	2200	-327
60	-52	340	-181	2400	-331
65	-56	360	-186	2600	-335
70	-59	380	-191	2800	-338
75	-63	400	-196	3000	-341
80	-66	420	-201	3500	-346
85	-70	440	-205	4000	-351
90	-73	460	-210	4500	-354
95	-76	480	-214	5000	-357
100	-80	500	-217	6000	-361
110	-86	550	-226	7000	-364
120	-92	600	-234	8000	-367
130	-97	650	-242	9000	-368
140	-103	700	-248	10000	-370
150	-108	750	-254	15000	-375
160	-113	800	-260	20000	-377
170	-118	850	-265	30000	-379
180	-123	900	-269	40000	-380
190	-127	950	-274	50000	-381
200	-132	1000	-278	75000	-382
210	-136	1100	-285	100000	-384

Given the number of staffs at Care International in Kenya at 490 as N , from the sample table above n=217

3.4.2 Sample selection procedure

This refers to that part of the research plan that indicates how cases are to be selected for observation (Kombo and Tromp, 2013). The research used stratified sampling since the population was heterogeneous then taking a simple random sample from each group. According to Mugenda and Mugenda (2003), this sampling ensures a representative sample.

Table 3.2: Distribution of staff from various field offices

Region	Total Staff	Sampled Staff
Western	74	33
Nairobi	146	64
North Eastern	270	119
Total	490	217

3.5: Data collection Instruments

To assist the researcher meet the study's objectives, a questionnaire will be used. The questionnaire will have structured, open and closed ended questions. The questionnaire will be divided into two sections; the first part will seek to obtain general information on respondents' profile while the second part will be developed based on the research objectives in order to capture information relevant to the study. This study prefers the use of questionnaire because of its simplicity in administration, scoring of items and analysis (Mugenda and Mugenda, 2003).

3.6 Instruments Validity and Reliability

3.6.1: Piloting

Pilot testing means pre-testing the instruments with few respondents to test their accuracy. The questionnaire will be piloted in a sample of the target population selected randomly. The results will be used to validate the instrument.

3.6.2: Validity

Mugenda and Mugenda(2003) defines validity as the accuracy and meaningfulness of inferences which are based on the research results. The instrument will be subjected to expert judgment and necessary adjustment made in consultation with the University of Nairobi supervisors.

3.6.3: Reliability

Reliability of an instrument is the degree of consistency with which it measures a variable. It is concerned with estimates of the degree to which a research instrument yields consistent results after repeated trials (Mugenda and Mugenda,2003). To enhance reliability the researcher intends to administer a pre-test of the questionnaire. The result from the pilot will be used to calculate the reliability coefficient. This will be done using Kurder- Richardson 20 formula:

$$KR_{20} = \frac{(K)(S^2 - \sum s^2)}{(S^2)(K-1)}$$

Where: KR_{20} is the reliability coefficient of internal consistency where $-1 < KR_{20} < +1$

K is the number of items used to measure concept

S^2 is the variance of all scores

s^2 is the variance of individual scores

From this the researcher will be able to restructure the questionnaire by incorporating the missing information, omitting irrelevant questions and paraphrasing questions which may create ambiguity under the guidance of the University of Nairobi supervisors. Mugenda and Mugenda(2003) asserts that computation of a correlation coefficient should yield a statistic that ranges from -1 to + 1.

3.7: Data Collection Procedure

A letter of identification from the University of Nairobi was used to obtain a research permit from the National Council of Science and technology. Permission was sought from the Country Director of Care International in Kenya to conduct the research. A

letter of transmittal was written to introduce the researcher to the respondents and assure them of total confidentiality of their responses. The researcher used two methods. A drop and pick method shall was used for the staff within physical reach while others were sent in soft copies via their e-mail addresses specifying how and when they are expected back.

3.8 Data Analysis Techniques

According to Kothari (2009), after collection of data it has to be processed and analyzed in accordance with the outline laid down for that purpose at the time of developing the research plan. Data collected was coded with regard to type and source. Data was analyzed and interpreted both qualitatively and quantitatively in the light of the research objectives. Pearson's Product Moment Correlation was used to determine the strength of association between variables of interest. Analysis was conducted with aid of Statistical Package for Social Sciences. Qualitative statistical techniques were used to describe and summarize data. The results were presented and interpreted in form of frequency tables, percentages and correlation.

3.9 Ethical considerations

The study required the participation of human subjects; therefore, ethical considerations are necessary for the purpose of ensuring the privacy as well as their safety. The participant's voluntary participation was sought. Confidentiality was ensured by not disclosing participants' names or personal identifiers to third party for any reasons.

3.10. Operational Definition of variables

Table 3.3

Objective	Variable	Indicator	Measure	Tool of data Collection	Measuring Scale	Data Analysis Technique
Dependent Variable						
	Performance of NGO	Efficiency and Effectiveness	Data analysis	Questionnaire	Ratio	Frequencies, Percentages, Correlation
		Productivity	Structured scorecard			
		Timeliness	No of months			
Independent Variables						
To establish how automated work steps using mobile technology influences performance in Care International in Kenya.	Automation of work steps	Competitive advantage	Appraisal reports	Questionnaire	Ratio, Nominal	Frequencies, Percentages, Mean , Correlation
		Quality of products/services	Exit interviews			
		Transparency and accountability	Policy guidelines			
		Task complexity	Number of hours			
		Coordination	Workplans			
To determine how the level of access to information using mobile technology influences the performance in Care International in Kenya	Access to information	Information flow	Number of staff with access	Questionnaire	Ratio	Frequencies, Percentages
		Flexibility of work station	Response rate			
		Knowledge management	Information sharing			
		Timely decision making	Number of days			
To examine how time management practices using mobile technology influences performance in Care International in Kenya	Time management practices	Time activity tracking	Workplans	Questionnaire	Ratio, Nominal	Frequencies, Percentages,
		Retrieval of stored information	Time spent			
		Activity scheduling	Workplans			
To assess how cost saving practices using mobile technology influences performance in Care International in Kenya	Cost saving practices	Labour costs	Expenditure on labor	Questionnaire	Ratio, Nominal, Ordinal	Frequencies, Percentages Correlation
		Stationery costs	Expenditure on stationery			
		Data entry costs	Expenditure on data entry			

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter presents findings of the study. The study sought to establish how automated work steps using mobile technology influences performance in Care International in Kenya; to determine how the level of access to information using mobile technology influences the performance in Care International in Kenya; to examine how time management practices using mobile technology influences performance in Care International in Kenya and to assess how cost saving practices using mobile technology influences performance in Care International in Kenya. Data was collected from staffs of Care International in Kenya.

4.2 Response Rate

This refers to the percentage of subjects who respond to the questionnaire. A total of 217 questionnaires were distributed to the three regions where Care International in Kenya operates and 201 questionnaire copies were received. Therefore this study received a 92% response rate. The researcher personally administered the questionnaires with the help of research assistants. The reason cited for non response was misplacement.

4.3 General characteristics of the respondents

These characteristics were collected from the 201 respondents. They included personal information such as gender, age, level of education, department, level of operation and number of years in that position.

4.3.1 Gender

The gender characteristics of the respondents is as given in Table 4.1

Table 4.1 Gender of the respondents

Gender	Frequency	Percentage (%)
Female	105	52
Male	96	48
Total	201	100

The findings revealed that 105 (52%) of the respondents were female while 96(48%) were male. The population of female staffs was slightly greater than that of male staffs at Care International in Kenya.

4.3.2 Age

The respondents were asked to indicate their ages. The result obtained showed that 98% were above 30 years of age while only 4 were 30 years and below. Those aged between 31 -40 years were 107 constituting 53%, those aged 41-50 years were 58 constituting 29% while those aged above 50 years were 32 constituting 16%. The result is as shown in table 4.2 below:

Table 4.2 Age distribution of the respondents

Age bracket	Frequency	Percentage (%)
30 years and below	4	2
31-40years	107	53
41-50 years	58	29
Above 50 years	32	16
Total	201	100

4.3.3 Highest level of education

The response to the respondents' highest level of education was given as in Table 4.3

Table 4.3 Respondents highest level of education

Highest Level of Education	Frequency	Percentage(%)
No formal education	0	0
Completed Primary	0	0
Completed secondary	7	4
Post Secondary certificate	19	9
Diploma	66	33
Degree and above	109	54
Total	201	100

The findings revealed that none of the respondents had their highest level of education lower than secondary level. 7 of the respondents constituting 4% completed secondary level, 19 of them constituting 9% had post secondary certificate and more than half of the respondents, 109 constituting 54% had a degree and above.

4.3.4 Department

The respondents were also asked to state their department. 145 respondents constituting 72% were program based while 56 respondents constituting 28% were working in the support department. The results are as shown in Table 4 below.

Table 4.4 Department of work

Department	Frequency	Percentage (%)
Program	145	72
Support	56	28
Total	201	100

4.3.5 Level of operation

The response for the level of operation of the respondents is as given in Table 4.5

Table 4.5 Level of operation

Level of operation	Frequency	Percentage (%)
Supervisor	54	27
Supervisee	147	73
Total	201	100

The finding revealed that 54 of the respondents (27%) had a supervisory role while 147 (73%) were supervisees.

4.3.6 Number of years in the current position

The response to the respondents' number of years in the current position was as given in the Table 4.6 below.

Table 4.6 Number of years in the current position

Number of years	Frequency	Percentage (%)
Less than 1 year	14	7
1-2 years	58	29
3-5 years	93	46
Above 5 years	36	18
Total	201	100

This question was raised to find out the duration under which the respondents had served in their current position. The results indicated 14 respondents (7%) had less than 1 year current position, 58 (29%) had 1-2 years, 93 (46%) had 3-5 years while those who had been in their current position for 5 years and above were 36 (18%). This result revealed that most of the respondents had witnessed the change of systems within the organization.

4.4. Influence automation of work steps on performance of CARE International in Kenya

This section presents the findings in respect to objective one which sought to establish how automated work steps using mobile technology influences performance in CARE International in Kenya

4.4.1 Information on automation

This question sought for whether the respondents had heard about automated systems. All the respondents 201 (100%) agreed to have heard about automated systems.

4.4.2 Source of information on automation

This question sought from the respondents' source of information on automation. The results are as shown in the table 4.7 below.

Table 4.7 Source of information on automation

Source of Information	Frequency	Percentage (%)
Television	7	3
Radio	9	4
Newspaper	15	8
Internet	37	19
Friends/Family	21	10
Within the organization	108	54
Others	4	2
Total	201	100

The findings revealed that more than half of the respondents, that is 108 which constitutes 54% knew about automation within the organization.37 constituting 19% from the internet ,21 constituting 10%from friends and family, 15 (8%) from newspapers,9(4%) from radio, 7(3%) from television while 4(2%) got information from other sources. This gave the organization a higher rating in utilization of automated systems.

4.4.3 Complexity of the job

The study sought to find how complex is the job of the respondent. The results are as shown in the table 4.8 below

Table 4.8 Complexity of the job

Complexity of the job	Frequency	Percentage (%)
Not complex	2	1
Slightly complex	38	19
Complex	99	49
Very Complex	51	25
Extremely Complex	11	6
Total	201	100

The responses in Table 4.8 indicated that 1% had no complexity in their job, 19% had a slightly complex job, 49% had a complex job, and 25% had a very complex job while 6 were doing an extremely complex job. This revealed that automation was important in the organization.

4.4.4 Effort to accomplish a task without automation

This question sought to ascertain how much effort would be involved if the system was not automated. The findings revealed that 82% (165) would find their tasks more difficult without automation while 18% would need to put little effort on their work. None of the respondents indicated that it would not require any effort to accomplish their tasks. This meant that without automation a lot of effort will be employed to accomplish tasks hence inefficiency as shown in table 4.9 below.

Table 4.9 Effort to accomplish tasks without automation

Effort	Frequency	Percentage (%)
A lot of effort	165	82
Little effort	36	18
No effort at all	0	0
Total	201	100

4.4.5 Quality of output

The respondents were asked to give the quality of output from automated systems. None of the respondents indicated poor quality, 2% indicated the quality was fair, 13% responded to have good quality, 68% of the respondents indicated that the quality was very good while 17% said the quality was excellent. This meant that automation improves quality of output as shown in Table 4.10 below.

Table 4.10 Quality of Output

Quality	Frequency	Percentage (%)
Poor	0	0
Fair	5	2
Good	27	13
Very good	136	68
Excellent	33	17
Total	201	100

4.4.6 Reasons for automation

This question was raised to find out the reasons why automation of the work processes was preferred. 96% (of the respondents were for automation of work processes in an organization. 4% had reasons against automation. The findings are in Table 4.11 and 4.12 below.

Table 4.11 Reasons for automation

Reason for automation	Frequency	Percentage (%)
Improved product quality	39	20
Increased chance of consistency	34	17
High efficiency	35	18
Improved productivity	40	22
Increases accountability and transparency	44	23
Total	192	100

The respondents were asked to state for what reason would they support automation and the responses were ranging between 17% and 23%. Improved product quality was at 20%, increased chance of consistency was at 17%, high efficiency at 18%, improved productivity at 22% while increased accountability and transparency was 23%. This meant that all the reasons cited were valid for automation with increased accountability and transparency ranking highest.

Table 4.12 Reasons for resisting automation

Reason	Frequency	Percentage (%)
High initial cost	6	67
Vulnerability to errors	2	22
Unpredictable research and development costs	1	11
None of the above	0	0
Total	9	100

The results in table 4.12 showed that high initial cost was the biggest reason why automation should be rejected. 67 % (6) of the respondents cited this as the main reason while 22% of the respondents indicated vulnerability to errors and 11% unpredictable research and development costs as the reasons.

4.4.7 Relationship between automation of work steps and performance of a non-governmental organization

The hypothesis being tested was; there was no significant relationship between automated work steps and performance of Care International in Kenya. A Pearson Product Moment Correlation was computed and the results are as in Table 4.13 below.

Table 4.13: Relationship between automation of work steps and performance of non governmental organization

		Automation of work steps	Performance of an NGO
Automation of Work-Steps	Pearson Correlation	1	.096(*)
	Sig.(2-tailed)	.	.254
	N	201	201
Performance of an NGO	Pearson Correlation	.096(*)	1
	Sig.(2-tailed)	.254	.
	N	201	201

*Correlation is significant at 0.05 level (two-tailed)

The findings showed that there was a positive Pearson Correlation of 0.096 between automation of work-steps and performance of an NGO. This value is statistically significant since it is higher than the 0.05significance level. The interpretation was that automation of work-steps had a positive influence on performance of an NGO.

4.5. Influence of access to information and performance of a non-governmental organization.

The second objective of this study was to determine how the level of access to information using mobile technology influences the performance in Care International in Kenya. This section presents the findings in respect to this objective.

4.5.1. Possession of a mobile device

The question sought to ascertain how many of the respondents had mobile devices .All the respondents had mobile devices. This was a multiple response question the table 4.14 below shows the type of devices the respondents had.

Table 4.14 Possession of mobile device

Type of mobile device	Frequency	Percentage (%)
Mobile phone	201	100
Smart phone	137	68
Laptops	99	49
Tablet Computers	34	17
PDA's	21	10
Other	17	8

All the respondents had mobile phone with 68% having smartphones,49% had laptops,17% tablets, 10%PDA's and 8% had other mobile devices. The use of mobile phones ranked highest which meant that most of the respondents view it as a tool for ease of access to information available to all.

4.5.2 Influence of mobile device on work

This question sought to find out how mobile devices one possesses influences their work.

Table 4.15 and 4.16 gives the findings from the respondents

Table 4.15 Influence of mobile device on work

Benefit	Frequency	Percentage (%)
Ease of access to information	102	51
Flexibility	57	28
Timely decision making	42	21
Total	201	100

The findings indicate that 51 %(102) of the respondents indicated ease of access to information as the greatest influence their mobile devices offer,28%(57) indicated flexibility and 21 % timely decision making as the benefit of being in possession of a mobile device.

Table 4.16 Benefits of mobile devices

Benefits	Strongly Disagree	Disagree	Neutral	Agree	Strongly agree	Total
a). Promotes the sharing of critical project-related information	0	0	0	81	110	201
b). Improved communication between internal and external team members	0	0	123	45	33	201
c). Real-time access to project data, anytime, anywhere	0	0	13	97	91	201

The study findings revealed that 40 %(81) of the respondents agreed and 60% (110) strongly agreed with the fact that mobile devices promotes sharing of critical project related information. Sharing of information therefore improves projects performance. The findings also revealed that 123 (61%) were neutral that mobile devices improved communication between internal and external team members compared to 45(22%) agreed and 33 (17%) strongly agreed. The findings show that mobile devices are quite useful in communication within the organization and outside the organization. 13 of the

respondents were neutral, 97 agreed and 91strongly agreed that mobile devices allow real-time access to project data, anytime, anywhere. This greatly promotes flexibility which has an influence in organizational performance.

4.5.3. Impact of mobile technologies on knowledge management

The respondents were asked to rate the impact of mobile technology on knowledge management. The findings revealed that a majority 128(64%) indicated that mobile technologies are extremely helpful in knowledge validation compared to 56(28%), 15 (7%) and 2(1%) who found this helpful, neutral and slightly helpful respectively. In terms of knowledge presentation 3(1%) were neutral, 85(42%) found mobile technologies helpful while 113(55%) indicated it was extremely helpful.93 compared to 108 indicated that the impact of mobile technology on knowledge distribution was helpful and extremely helpful respectively. The findings also revealed that 5 (2%), 11(5%), 101 (50%) and 84 (43%) indicated that mobile technology was slightly helpful, neutral, helpful and extremely helpful respectively. These findings show that mobile technology promotes knowledge management which will influence the performance of a non-governmental organization. The results are as in Table 4. 17 below

Table 4.17 Impact of mobile technology in knowledge management

	Not at all helpful	Slightly helpful,	Neutral	Helpful	Extremely helpful	Total
Knowledge validation	0	2	15	56	128	201
Knowledge presentation	0	0	3	85	113	201
Knowledge distribution	0	0	0	93	108	201
Knowledge application	0	5	11	101	84	201

4.5.4. Relationship between access to information and performance of a non-governmental organization

The hypothesis tested was; there is no significant relationship between access to information and performance in Care International in Kenya. A Pearson Product Moment Correlation was computed to determine the relationship between access to information

and performance of a non-governmental organization and the results are as in the table below:

Table 4.18 Relationship between access to information and performance of a non-governmental organization

		Access to Information	Performance of an NGO
Access to Information	Pearson Correlation	1	.243(*)
	Sig.(2-tailed)	.	.026
	N	201	201
Performance of an NGO	Pearson Correlation	.243(*)	1
	Sig.(2-tailed)	.026	.
	N	201	201

*Correlation is significant at the 0.05 level (2-tailed)

The findings show that there was a positive Pearson Correlation at 0.243 between access to information and performance of an NGO. The level of 0.243 is above the significance level of 0.05 hence statistically significant. The interpretation is that access to information does influence the performance of a non-governmental organization.

4.6 Influence of time management using mobile technology on performance of non-governmental organization

The study in this objective sought to examine how time management practices using mobile technology influences performance in Care International in Kenya. The respondents were asked whether they employ mobile technology in managing their time. All the respondents indicated that they employ mobile technology in managing their time.

4.6.1 Time management practices

The respondents were asked to rate the following time management statements as in Table 4.19 below.

Table 4.19 Time management practices

	Strongly Disagree	Disagree	Neutral	Agree	Strongly agree	Total
a).I consider myself a good time manager	176	25	0	0	0	201
b).I often struggle to meet deadlines.	0	0	15	121	65	201
c).I have missed deadlines in the past	0	0	0	89	112	201
d).I can estimate the time I need for performing a task fairly accurately	65	23	94	19	0	201

The findings revealed that majority of the respondents 176 constituting 88%, strongly disagreed as compared with 25(12%) who disagreed they are good time managers. This raised the concern for involvement of mobile technology in scheduling work. 15(7%) were neutral, 121(60%) agreed and 65(33%) strongly agreed that they often struggle to meet deadlines. 89 agreed to have missed deadlines in the past compared 112 who strongly agreed to have missed deadlines. Estimation of time required to perform a task showed that 65 strongly disagreed , 23 disagreed 94 were neutral and 19 agreed that they could estimate fairly accurately.

4.6.2 Utilization of mobile technology in time management

The respondents were asked to rate how helpful the mobile device is in the following statements. The results are as shown in Table 4.20

Table 4.20 Utilization of mobile technology in time management

Utility	Not at all helpful	Slightly helpful,	Neutral	Helpful	Extremely helpful	Total
a).Keeping track of appointments/events	0	0	5	11	185	201
b).Planning and organizing tasks	0	0	21	57	123	201
c).Collaborative scheduling of group meetings	0	0	1	84	116	201
d).Reminders of dead lines	0	0	0	91	110	201
e).Retrieval of key contacts	0	0	0	106	95	201
f). Email for organizing meetings	1	3	32	49	116	201

The findings revealed that 185(92%) keep track of their appointments or events using mobile technology compared 11(5%) and 5(3%) who indicated that it is helpful and neutral respectively. This shows that mobile technology is employed by majority of the respondents to track appointments and events. In planning and organizing tasks, 123 indicated that it was extremely helpful, 57 helpful and 21 were neutral while in collaborative scheduling of group meetings 1 was neutral, 84 said it was helpful and 116 indicated it was extremely helpful. Mobile technology as a reminder tool for deadlines saw 91 indicate it was helpful and 110 said it was extremely helpful. Mobile technology was also said to be helpful by 106 and extremely helpful 95 in retrieval of key contacts by the respondents. E-mail for organizing meetings saw 1 indicate it was not helpful at all, 3 indicated it was slightly helpful, 32 were neutral, 49 indicated it was helpful and 116 indicated extremely helpful.

4.6.3 Benefits of electronic storage

The respondents were asked to state the benefits of electronic storage. The results are as shown in Table 4.21

Table 4.21 Benefits of electronic storage

Benefit	Frequency	Percentage (%)
Saves space	51	26
Ease of retrieval	47	23
Ease of transfer	42	21
Saves time	61	30
Total	201	100

The findings revealed that 51 which constitutes 26 % indicated the electronic storage saves space, 47(23%) ease of retrieval, 42(21%) ease of transfer while 61 constituting 30% indicated it saves time. The results meant therefore that in a firm's performance electronic storage is needed for efficiency and time management.

4.6.4. Relationship between time management practices and performance of a nongovernmental organization

The hypothesis tested here was; there is no significant relationship between time management practices and performance in CARE International in Kenya. A Pearson Product Moment Correlation was computed to determine the relationship between time management practices using mobile technology and performance of a non-governmental organization and the results are as in the table 4.22 below:

Table 4.22 Relationship between time management practices and performance of a nongovernmental organization

		Time management practices	Performance of an NGO
Time management practices	Pearson Correlation	1	.067(*)
	Sig.(2-tailed)	.	.540
	N	201	201
Performance of an NGO	Pearson Correlation	.067(*)	1
	Sig.(2-tailed)	.540	.
	N	201	201

*Correlation is significant at the 0.05 level (2-tailed)

The findings revealed that there was a positive correlation of 0.067 between time management practices using mobile technology and performance of a non-governmental organization. This value is statistically significant since it is higher than 0.05. The interpretation was that the time management practices using mobile technology influence positively on the performance of a non-governmental organization.

4.7 Influence of cost saving practices on performance of a non-governmental organization

The study in the fourth objective sought to assess how cost saving practices using mobile technology influences performance in Care International in Kenya.

4.7.1 Cost of manual paper based process

The respondents were asked to state the cost of manual paper based processes before automation. The results are as shown in the table 4.23 below:

Table 4.23 Cost of manual paper based processes

Cost level	Frequency	Percentage (%)
Very expensive	96	48
Expensive	71	35
Average	34	17
Low	0	0
No cost at all	0	0
Total	201	100

The findings showed that 96 of the respondents constituting 48% indicated it was very expensive, 71(35%) indicated it was expensive while 34 constituting 17% indicated the cost as average. None of the respondents indicated that the costs were low or involved no cost at all. This meant that implementing technology reduces cost compared to using manual paper based systems.

4.7.2 Cost saving practices

The respondents were asked to state whether the use of mobile technology leads to cost savings in the organization.177 (88%) of the respondents indicated that it does while 24(12%) said it does not. The results are shown in Table 4.24 and Table 4.25

Table 4.24 Cost saving practices

Cost level	Frequency	Percentage (%)
Expenditure on labor	61	34
Expenditure on stationery	62	35
Expenditure on data entry	54	31
Total	177	100

The respondents were asked to indicate one area in management they believe mobile technology has brought cost savings. The findings revealed that 61 constituting 34% indicated that there were reduced costs on labour related expenses, 62 (35%) indicated reduced costs in stationery while 54 constituting 31% cited reduced data entry costs. This meant that employment of mobile technology had a relationship with reduced costs in labour, stationery and data entry. The respondents who indicated that mobile technology does not lead to cost savings cited high set up costs at 54%(13), recurrent maintenance costs at 25%(6) , lack of qualified personnel was at 17%(4) with one of the respondents citing no reason at all as shown in the table below.

Table 4.25 Reasons for non-reduction in costs

Cost item	Frequency	Percentage (%)
High set up costs	13	54
Recurrent maintenance costs	6	25
Lack of qualified personnel	4	17
No reason at all	1	4
Total	24	100

4.7.3 Cost savings in management activities

The respondents were also asked to rate how helpful mobile technology is in saving costs in management activities. Table 4.26 below shows the findings

Table 4.26 Cost savings in management activities

Management activity	Not at all helpful	Slightly helpful,	Neutral	Helpful	Extremely helpful	Total
a).Scheduling work and meetings	0	0	3	56	142	201
b).Recording outcomes	0	0	1	78	122	201
c).Performing tasks	0	2	7	32	160	201
d).Reporting	0	0	0	94	107	201

The findings revealed that a majority, 142, constituting 71% found use of mobile technology for scheduling work and meetings extremely helpful as compared to 56 (28%) who found it helpful and 3(1%) who were neutral . In recording outcomes of field activities and proceedings, 122(61%) indicated that mobile technology was extremely helpful, 78(38%) said it was helpful while 1 was neutral. Using mobile technology to perform tasks showed 2(1%) indicating it was slightly helpful, 7 constituting 3% were neutral, 32(16%) indicated it was helpful while 160 constituting 80% indicated it was extremely helpful.94 which constitutes 47% indicated mobile technology was helpful in reporting while 53% (107) indicated that it was extremely helpful. This meant that the relationship between employment of mobile technology in management activities and cost savings is very strong as a majority of the respondents indicated that it was extremely helpful in saving costs.

4.7.4 Relationship between cost saving practices and performance of a non-governmental organization

The hypothesis tested here was; there was no significant relationship between cost saving practices using mobile technology and performance in Care International in Kenya. Pearson Product moment Correlation was computed to determine the relationship between cost saving practices using mobile technology and performance of a non-governmental organization and the results are as shown in the table below:

Table 4.27 Relationship between cost saving practices and performance of a non-governmental organization

		Cost Saving Practices	Performance of an NGO
Cost Saving Practices	Pearson Correlation	1	.058(*)
	Sig.(2-tailed)	.	.557
	N	201	201
Performance of an NGO	Pearson Correlation	.058(*)	1
	Sig.(2-tailed)	.557	.
	N	201	201

*Correlation is significant at the 0.05 level (2-tailed)

The findings show that there was a positive Pearson Product Moment Correlation at 0.058 between cost saving practices using mobile technology and performance of a non-governmental organization. The level of 0.058 is above the significance level at 0.05 therefore statistically significant. The interpretation is that cost saving practices using mobile technology does influence performance of a non-governmental organization.

4.8. Summary of the Chapter

The study established that automation of work steps, access to information, time management practices and cost saving practices using mobile technology influences performance of a non-governmental organization

CHAPTER FIVE

SUMMARY OF FINDINGS, DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter comprises of a summary of the study findings, discussions of findings, conclusions of the study, recommendations made to the study, suggestions for further research and the study's contribution to existing body of knowledge on the influence of mobile technology on performance of non-governmental organization

5.2 Summary of findings and discussions

There was a response from 201 out of the 216 questionnaires distributed giving a response return rate of 93%. The study had a response from 105 (52%) females while 96(48%) were male. Majority of the respondents were aged between 31 to 40 years at 53%. This boosted the level of understanding of mobile technology. It emerged that 109(54%) had a degree and above with 145(72%) working in the programs as 56(28%) were in the support department of the organization. Majority of the respondents were supervisees at 73 % (147).The first objective was to establish how automated work steps using mobile technology influences performance in Care International in Kenya. The study established that all the respondents (100%) were aware of automation with 82% stating they will find it difficult to accomplish their tasks without automation. Hence automation was identified as being central to achieving performance in a non-governmental organization. The study also revealed that 98% of the respondents were satisfied with the quality of the products or services of mobile technology. 96% of the respondents supported automation citing its benefits as improved product quality (20%), increased chance of consistency (17%), high efficiency (18%), improved productivity (22%) and increased accountability and transparency at 23%. The findings revealed a positive Pearson Correlation of 0.096 between automation of work steps using mobile technology and performance of a non –governmental organization. This implied there is a relationship between automation of work steps and performance of a non-governmental organization. The second objective of this study was to determine how the level of access to information using mobile technology influences the performance in Care International

in Kenya. All the respondents were found to be in possession of at least one mobile device where all had mobile phones. The study revealed that 51% of the respondents indicated that ease of access to information, flexibility (28%) and timely decision making (21%) as some of the ways mobile technology influences work. The study revealed that 60% of the respondents strongly agreed that mobile technology is critical to sharing information. The findings also showed that there was a positive Pearson correlation of 0.243 between access to information using mobile technology and performance of CARE International in Kenya. Therefore access to information influences performance. The third study objective sought to examine how time management practices using mobile technology influences performance in Care International in Kenya. 88% strongly disagreed that they are good time managers. This implied that without application of mobile technology time management would be poor with over 60% indicating they struggle to meet deadlines. The study also revealed that without mobile technology 90% of the respondents could not estimate fairly accurately the time required to perform a given task. The findings also revealed that 92% of the respondents keep track of their appointments or events using mobile technology. Efficiency in a firm's performance was also shown where electronic storage saves space, offers ease of retrieval, ease of transfer and time saving. The findings showed a positive Pearson Correlation of 0.067 which implied that time management using mobile technology influences performance of an NGO. The fourth objective of the study sought to assess how cost saving practices using mobile technology influences performance in CARE International in Kenya. The study revealed that 48% stated that it was very expensive to use manual paper based processes which implied that use of mobile technology reduced cost compared to the manual systems. The study also revealed that mobile technology leads to cost saving practices with 34% expenses on labour, 35% expenses on stationery and 31% of expenses on data entry being saved. A majority constituting 71% stated mobile technology was extremely helpful in scheduling work and meetings, 61% in recording outcomes 80% in performing tasks and 53% in reporting. The findings showed that there was a positive Pearson Correlation of 0.058 between cost saving practices using mobile technology and performance of a non-governmental organization. This implied that cost saving practices using mobile technology improves a firm's efficiency hence performance.

5.3 Conclusions of the study

The study investigated the influence of mobile technology on the performance of non-governmental organizations taking CARE International in Kenya. The first objective of this study was to establish how automated work steps using mobile technology influences performance in Care International in Kenya. The study established that automation improved quality of the products or services, increased chance of consistency, high efficiency, improved productivity and increased accountability and transparency therefore influencing the performance of a non-governmental organization. The second objective of this study was to determine how the level of access to information using mobile technology influences the performance in Care International in Kenya. The study established that ease of access to information, flexibility and timely decision making were central to information sharing and knowledge management which influences performance of an organization. The third objective was to examine how time management practices using mobile technology influences performance in Care International in Kenya. The study showed that without mobile technology poor time management was witnessed. Efficiency and effectiveness of the tasks, appointments and planning for events was made easy by mobile technology hence influencing performance of CARE International in Kenya. The fourth objective of the study was to assess how cost saving practices using mobile technology influences performance in CARE International in Kenya. The reliance on manual paper based systems was found to be very expensive. The uses of mobile technology lead to cost saving practices on labour, stationery and data entry. Cost savings practices therefore influences performance of a non-governmental organization.

5.4. Recommendations

From the study findings it is recommended that non-governmental organizations should embrace automation in their work steps to improve efficiency and effectiveness. To effectively reduce task complexity automation should be employed to make work. Automation should be employed to promote transparency and accountability in the work process of non-governmental organizations. The management of non-governmental

organization should engage mobile technology in enhancing information flow between the management and staff to see timely decision making and coordination of activities. From study findings on use of mobile technology, it is recommended electronic storage of documents should be implemented by non-governmental organization. This had a consequence on time management when it comes to retrieval. Scheduling of tasks is recommended to be done using mobile technology this will provide reminders reducing the chances of forgetting the event. This will enhance efficiency and productivity. It was also found that labour costs, stationery costs and data entry costs were reduced by application of mobile technology. The researcher therefore recommends the use of mobile technology by non-governmental organizations by management in field work reports for real time information and the number of support staffs engaged in support services.

5.5. Suggestions for further research

The study recommends further research to be carried on impact of mobile technology on knowledge management in non-governmental organizations; effect of mobile technology on employment in non-governmental organizations.

5.6. Contribution to knowledge

This section presents the contribution of the study to existing knowledge in the table below:

Table 5.1 Contributions to knowledge

Objective	Contribution to knowledge
To establish how automated work steps using mobile technology influences performance in Care International in Kenya.	This provides a useful information that work steps should be automated to boost efficiency, effectiveness and productivity
To determine how the level of access to information using mobile technology influences the performance in Care International in Kenya	Access to information is vital in knowledge management and timely decision making
To examine how time management practices using mobile technology influences performance in Care International in Kenya.	This sets guidelines on managing time through scheduling, tracking and storage
To assess how cost saving practices using mobile technology influences performance in Care International in Kenya	Cost saving practices are central to management in enhancing efficiency and optimal utilization of resources

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APPENDICES

Appendix 1: Letter of Transmittal

Odoyo Polycarp Otieno
Reg.No:L50/77483/2012
University of Nairobi
P.O. Box 2461, Kisii

Dear Sir/Madam,

RE: INFLUENCE OF MOBILE TECHNOLOGY ON PERFORMANCE OF A NON
GOVERNMENTAL ORGANIZATION- A CASE OF CARE INTERNATIONAL IN
KENYA

I am a Master of Arts student at the University of Nairobi. As part of the requirement of the Master of Arts in Project Planning and Management, I am conducting a research on the above topic. To enable me collect data for the research, you have been selected as one of the participants of the study. I would like to request you to kindly complete the questionnaire correctly and to the best of your knowledge. The research is for academic purposes only and any information given will be treated with utmost confidentiality.

Thank you in advance

Yours faithfully

Polycarp Odoyo Otieno

Appendix 2: Research Questionnaire

QUESTIONNAIRE FOR INFLUENCE OF MOBILE TECHNOLOGY ON PERFORMANCE OF NON GOVERNMENTAL ORGANIZATION

This questionnaire seeks to obtain data on influence of mobile technology on performance of a non-governmental organization. Please answer all the questions by ticking (✓) the options you consider appropriate. Note that your responses will be used for academic purposes only and will be treated with strict confidence. Your cooperation is highly appreciated.

PART I: PERSONAL INFORMATION

1	Name of the region		
2	State your gender	1	Male
		2	Female
3	What is your age?	1	Below 30 years
		2	31-40 years
		3	41-50 years
		4	Above 50 years
5	What is your highest education level?	1	No formal education
		2	Completed Primary
		3	Completed secondary
		4	Post Secondary Certificate
		5	Diploma
		6	Degree and above
6	Which department do you work in?	1	Program
		2	Support
7	What level of operations do you work?	1	Supervisor
		2	Supervisee
8	For how many years have you been in the position in above?	1	Less than 1 year
		2	1-2 years
		3	3-5years
		4	Above 5 years

PART II: AUTOMATION

9	Have you heard about automated systems?	1	Yes
		2	No
10	From where did you learn about automation? (Multiple response allowed)	1	Television
		2	Radio
		3	Newspaper
		4	Internet
		5	Friends/family
		6	Within the organization

		7	Others (Specify)_____	
11	How do you rate the complexity of your job?	1	Not complex	
		2	Slightly complex	
		3	Complex	
		4	Very complex	
		5	Extremely complex	
2	How much effort would you put in to accomplish a task without automation?	1	A lot of effort	
		2	Little effort	
		3	No effort at all	
13	How would you say about the output of an automated system	1	Poor	
		2	Fair	
		3	Good	
		4	Very good	
		5	Excellent	
14	Would you advice the organization to automate its process?	1	Yes	Go to 16
		2	No	
15	If yes, why?	1	Improved product quality	
		2	Increased chance of consistency	
		3	High efficiency	
		4	Improved productivity	
		5	Increases accountability and transparency	
16	If NO, why?	1	High initial cost	
		2	Vulnerability to errors	
		3	Unpredictable research and development costs	
		4	None of the above	

PART III: ACCESS TO INFORMATION

17	Are you in possession of a mobile device?	1	Yes	
		2	No	
18	Which mobile device do you have?	1	Mobile phone	
		2	Smart phone	
		3	Laptops	
		4	Tablet Computers	
		5	PDA's	
		6	Other	
19	How does the device that you use influence your work?	1	Ease of access to information	
		2	Flexibility of work station	
		3	Timely decision making	
		4		
20	Rate on a scale of 1 to 5 the following statements (1 = strongly disagree, 2=Disagree,3=Neutral,4=Agree 5 = Strongly agree)			

	a). Promotes the sharing of critical project-related information		
	b). Improved communication between internal and external team members		
	c). Real-time access to project data, anytime, anywhere		
21	If no, why?	1	It's <i>not</i> permitted in my work
		2	It's not healthy
		3	Don't know
22	Rate the impact of mobile technologies on the process of knowledge management. (1 = not at all helpful, 2=Slightly helpful, 3=Neutral, 4=Helpful, 5 = Extremely helpful)	1	Knowledge validation
		2	Knowledge presentation
		3	Knowledge distribution
		4	Knowledge application

PART IV: TIME MANAGEMENT

23	Have you ever employed the use of mobile technology in managing your time?	1	Yes
		2	No
24	If No, why?	1	No tight schedules
		2	Never busy
		3	I can manage my time alone
25	Please rate your agreement with the following statements. (1 = strongly disagree, 2=Disagree,3=Neutral,4=Agree 5 = Strongly agree)		
	a).I consider myself a good time manager		
	b).I often struggle to meet deadlines.		
	c).I have missed deadlines in the past		
	d).I can estimate the time I need for performing a task fairly accurately		
26	Please rate how helpful you find the mobile device with regard to the following. (1 = not at all helpful, 2=Slightly helpful, 3=Neutral, 4=Helpful, 5 = Extremely helpful)		
	a).Keeping track of appointments/events		
	b).Planning and organizing tasks		
	c).Collaborative scheduling of group meetings		
	d).Reminders of dead lines		
	e).Retrieval of key contacts		
	f). Email for organizing meetings		
27	What benefits do you get by electronic storage of documents as opposed to manual filing	1	Saves space
		2	Ease of retrieval
		3	Ease of transfer
		4	Saves time

PART V: COST SAVING PRACTICES

28	Before utilization of mobile technology, rate the	1	Very expensive
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	cost of manual paper based processes	2	Expensive	
		3	Average	
		4	Low	
		5	No cost at all	
29	Does the use of mobile technology save cost for the organization?	1	Yes	
		2	No	
30	If YES, How?	1	Saves expenditure on labor	
		2	Saves expenditure on stationery	
		3	Saves expenditure on data entry	
31	If NO, Why?	1	High set up costs	
		2	Recurrent maintenance costs	
		3	Lack of qualified personnel	
		4	No reason at all	
32	Please rate how mobile technology would lead to cost savings in the following management activities (1 = Not at all helpful,2=Slightly helpful, 3=Neutral, 4=Helpful, 5 = Extremely helpful)			
	a).Scheduling work and meetings			
	b).Recording outcomes			
	c).Performing tasks			
	d).Reporting			