T.C.
ISTANBUL GEDIK UNIVERSITY
INSTITUTE OF GRADUATE STUDIES

THE IMPACT OF TECHNOLOGICAL CHANGES ON PROJECT MANAGEMENT: A CASE STUDY OF CARE INTERNATIONAL ORGANIZATION IN SOMALIA

MASTER THESIS

Mohamed Elmi OSMAN

Engineering Management Department

Engineering Management Master in English Program

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Üye (İmza)

İstanbul Gedik Üniversitesi

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I, Mohamed Elmi Osman, hereby certify that the work contained in this thesis is fully original. I carried out this research with my supervisor's help and following the University's rules and policies. I certify that all references used in this thesis were correctly cited and acknowledged. Any contributions made by organizations or people over this research have been fully acknowledged. I further state that no other degree or qualification has received this thesis, in whole or in part. This thesis presents original research that hasn't been published before (12.07.2024).

Mohamed Elmi OSMAN

DEDICATION

To my family, this thesis is dedicated to the unending love, support, and encouragement you have given me throughout my academic journey. Your trust in my abilities and your sacrifices are the driving force behind this success.

To my parents, whose endless sacrifices and unwavering belief in my potential shaped my path and inspired me to strive for excellence. Your advice and unwavering support are my greatest source of strength.

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PREFACE

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July 2024 Mohamed Elmi OSMAN

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LIST OF ABBREVIATIONS

BIS	Business Intelligent Systems
CARE	Cooperative for Assistance and Relief Everywhere
CI	CARE International
DSS	Decision Support Systems
ESS	Executive Support Systems
GDP	Gross Domestic Product
IBM	International Business Machines
ICT	Information Communication Technology
IT	Information Technology
KMS	Knowledge Management System
MIS	Management Information Systems
NGO	Non-Governmental Organization
PMBOK	Project Management Body of Knowledge
PMI	Project Management Institute
RM	Risk Management
SCM	Supply Chain Management
UNDP	United Nations Development Program
VR	Virtual Reality

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THE IMPACT OF TECHNOLOGICAL CHANGES ON PROJECT MANAGEMENT: A CASE STUDY OF CARE INTERNATIONAL ORGANIZATION IN SOMALIA

ABSTRACT

The objective of this study was to evaluate the influence of information technology on the achievement of project goals at CARE International Mogadishu, Somalia (CI Mogadishu). The study utilized a descriptive research approach, targeting all the organization's staff members in Mogadishu. The study employed a combination of quantitative and qualitative methodologies to gather data. Every questionnaire that was finished underwent data analysis. A total of 90 questionnaires were received, while 9 individuals were interviewed. The response rate of 91% achieved was deemed satisfactory in obtaining the desired goals. The data was analyzed using IBM SPSS Version 20 to provide descriptive and inferential statistics. The study findings indicated that a significant proportion of the respondents possessed different IT devices provided by their firms. Specifically, 72.5% had laptops, 25.3% had organization mobile phones, 9.3% had desktop computers, and 4.8% had iPads or tablets. These devices were utilized by the respondents to effectively carry out their job responsibilities. Furthermore, the regression analysis of the study reveals a positive correlation between information technology (IT) and project success, with a correlation coefficient (r) of 0.182 at a significant level of $p < 0.05$. The study findings demonstrated that the utilization of information technology (IT) had enhanced the organization's ability to manage data and knowledge effectively. Additionally, IT had increased the operational efficiency of employees and improved accountability within the organization. Furthermore, IT had contributed to the successful delivery of high-quality projects to stakeholders, thus enhancing project success at CARE International. The report suggests that CARE should adopt IT tools and services in order to get a competitive advantage and enhance service delivery to their stakeholders. The report also advocates for additional research to be conducted on the obstacles encountered in the utilization of information technology within enterprises in Mogadishu, Somalia.

Keywords: *Information Technology (IT) Impact, IT Devices and Utilization, Project Success andRecommendations.*

TEKNOLOJİK DEĞİŞİMLERİN PROJE YÖNETİMİ ÜZERİNDEKİ ETKİSİ: SOMALİ'DEKİ CARE ULUSLARARASI ORGANİZASYONU ÜZERİNE BİR VAKA ÇALIŞMASI

ÖZET

Bu çalışmanın amacı, CARE International Mogadishu, Somali'de (CI Mogadishu) proje hedeflerine ulaşılmasında bilgi teknolojisinin etkisini değerlendirmektir. Çalışmada örgütün Mogadişu'daki tüm personelini hedef alan tanımlayıcı bir araştırma yaklaşımı ve veri toplamak için nicel ve nitel metodolojilerin bir kombinasyonu kullanıldı. Tamamlanan her anket veri analizine tabi tutuldu. Toplamda 90 ankete değerlendirilebilir cevap verilmiş, 9 kişiyle görüşme yapılmıştır. Elde edilen %91'lik yanıt oranı, istenen hedeflere ulaşılmasında tatmin edici görüldü. Veriler, hem tanımlayıcı hem de çıkarımsal istatistikler sağlamak için IBM SPSS Sürüm 20 kullanılarak analiz edildi. Araştırma bulguları, katılımcıların önemli bir kısmının firmaları tarafından sağlanan farklı BT cihazlarına sahip olduğunu gösterdi. Spesifik olarak, %72,5'inin dizüstü bilgisayarı, %25,3'ünün kurumsal cep telefonu, %9,3'ünün masaüstü bilgisayarı ve %4,8'inin iPad veya tableti vardı. Bu cihazlar katılımcılar tarafından iş sorumluluklarını etkili bir şekilde yerine getirmek için kullanılmaktadır. Ayrıca, çalışmanın regresyon analizi, bilgi teknolojisi (BT) ile proje başarısı arasında pozitif bir korelasyon olduğunu ve korelasyon katsayısı (r) 0,182 olup anlamlı düzeyde $p < 0,05$ olduğunu ortaya koymaktadır. Çalışma bulguları, bilgi teknolojisinin (BT) kullanımının kuruluşun verileri ve bilgiyi etkili bir şekilde yönetme yeteneğini geliştirdiğini gösterdi. Ayrıca BT, çalışanların operasyonel verimliliğini artırdı ve kuruluş içindeki hesap verebilirliği artırdı. Ayrıca BT, yüksek kaliteli projelerin paydaşlara başarılı bir şekilde sunulmasına katkıda bulunarak CARE International'daki proje başarısını artırdı. Rapor, CARE'in rekabet avantajı elde etmek ve paydaşlarına hizmet sunumunu geliştirmek için BT araçlarını ve hizmetlerini benimsemesi gerektiğini öne sürüyor. Raporda ayrıca Somali'nin Mogadişu kentindeki işletmelerde bilgi teknolojisinin kullanımında karşılaşılan engellere ilişkin ek araştırmaların yapılması gerekliliği vurgulanmaktadır.

Anahtar Kelimeler: *Bilgi Teknolojisi (BT) Etkisi, BT Cihazları ve Kullanımı, Proje Başarısı ve Öneriler.*

1. INTRODUCTION

Ensuring that the construction industry attains coordination and coherence in the projects it undertakes is crucial. Architects, consultants, contractors, technology suppliers, engineers, developers, and owners are just a few of the many industry participants, which make up a tremendously fragmented market (Ilozor and Kelly, 2011). The risk associated with improper technology deployment in finishing different initiatives undertaken by businesses operating in this industry frequently fails several projects, ultimately leading to a reduction in productivity in the industry. This might eventually result in sluggish economic expansion and a dearth of employment options.

Information technology (IT) has been a revolutionary force in global transformation since the early 1900s. Many find it quite fascinating and believe it to be the greatest breakthrough since the Industrial Revolution in the middle of the eighteenth century, according to Tom (2010). Our daily lives in home and work environments, as well as in businesses, financial organizations, and educational institutions, are being completely changed by this revolution. It is altering individuals' cognitive processes, interpersonal interactions, and actions. In the modern day, improvements in technology such as the internet, mobile phones, and satellite networks have substantially lowered the boundaries of time and distance. This has made it easier to integrate computers and communications, resulting in novel techniques for data processing, dissemination, and storage and for communication with large amounts of information (UNDP, 2011). Advancements in semiconductor, satellite, radio, and optical fiber technologies have made global electronic connectedness, bridging national and international divides to the advantage of millions of people. The information revolution's most recent and noteworthy development is the increase in connection (Evans and Wurster, 2009).

All facets of computer technology, such as networking, hardware, software, the Internet, and the experts in these domains, are included in information technology. As stated by Daft (2009), information technology (IT) is a grouping of

hardware, software, database management, telecommunications, and other information-processing technologies used for information delivery, processing, and storage.

Information technology is frequently used by managers to aid in their direct control over staff, other resources, and business operations. Managers face challenges in coordinating business functions across several projects due to the need to control resource coordination and allocation. Information technology is a crucial invention that is often used to aid this process (Hobday, 2009). IT is widely used because, in the opinion of Peasouper and Walker (2011), it facilitates communication, strengthens integration, boosts productivity, and improves service delivery (Bjork, 2007).

Most people agree that the 21st century will see significant expansion in the information technology (IT) sector, especially in the fast-paced and extremely competitive business environment. Using cutting-edge IT solutions is crucial to increasing productivity, cutting expenses, producing high-quality products, and offering clients services (Allen & Morton, 2010). IT is acknowledged as a tool for marketing that facilitates communication with existing and new consumers. Additionally, it serves as a platform for showcasing IT services as highly valuable offerings to clients (UNDP, 2011; Werthner and Klein, 2012).

Organizations are increasingly using information technology to address business issues, boost productivity and service quality, enhance decision-making efficacy and efficiency, attain dynamic stability, and compete in new markets (Attewell and Rule, 1984; Molloy and Schwenk, 1995; Boynton, 1993). According to Cerere (2013), businesses have continuously sought out and employed technology that enhances employee productivity and management skills. He observed that information technology, despite its gradual development, has become a crucial instrument for managing organizational operations.

Projects are generally used in the fields of information technology (IT), software development, business process reform, and research (White and Fortune, 2002; Besner, Hobbs, 2009). Project management includes activities relating to planning, monitoring, and controlling projects. For many years, it has been used as a method of arranging, coordinating, safeguarding, and overseeing resources to assist an organization in attaining its business objectives.

CARE, previously known as Cooperative for American Remittances to Europe, is a prominent global humanitarian organization that provides urgent assistance and implements sustainable international development initiatives. CARE, established in 1945, is a nonsectarian, neutral, and non-governmental organization. It is a prominent and long-standing humanitarian relief organization with a primary focus on combating worldwide poverty.

CARE's operations in 2016 spanned over 94 countries, encompassing 962 initiatives aimed at alleviating poverty and providing humanitarian assistance. These efforts directly impacted approximately 80 million individuals and indirectly affected 256 million people (CARE International, 2023). CARE's initiatives in poor nations encompass a wide array of subjects, such as disaster relief, ensuring access to food, promoting clean water and sanitation, fostering economic growth, mitigating climate change, advancing agricultural practices, improving education, and enhancing healthcare. CARE also engages in advocacy efforts at the local, national, and international levels to promote policy reform and uphold the rights of impoverished individuals. CARE's primary objective is to empower and address the needs of women and girls, while also advocating for gender equality, in each of these areas. CARE International is an alliance consisting of fourteen CARE National Members, with each member being a part of the confederation.

The organization has obtained legal recognition as an autonomous non-profit non-governmental entity within the country, and it has four affiliated members, including CARE International (CAREInternational, 2023).

CARE has been delivering urgent aid and life-preserving support to the Somali population since 1981. Since then, the principal program initiatives have included teacher instruction, adult literacy, primary school education, sustainable pastoralist activities, the development of civil society and media, the advancement of small-scale businesses, and efforts in water and sanitation. CARE works with prominent civil society members, local government entities, and humanitarian groups both in Somalia and abroad. CARE Somalia is currently active in the northernregions of Mogadishu Their objective is to implement a program-based approach to showcase theireffectiveness and encourage organizational learning. They aim to minimize the negative effects ofemergencies on vulnerable communities, with a particular focus on

women and children. Additionally, they strive to enhance governance and increase access to services and resources (CARE international, 2023).

The motivation behind this study stems from the prevalence of advanced technology usage in Somalia, as well as the significant impact of the internet revolution on project success. Additionally, it is worth noting that no prior studies have been conducted on this topic in Somalia. Thus, The principal aim of this study was to assess how information technology affects project goals, and to achieve this by utilizing CARE International Organization as a particular case study.

1.1 Background to the Problem

According to Sidawi (2014), there are a lot of problems in the building industry. Among them arethe inappropriate use of communication and technological tools for organizing, carrying out, managing, and coordinating. Ilozor and Kelly (2011) state that the construction industry is commonly perceived as being ineffective, wasteful, litigious, aggressive, unproductive, and in need of growth. According to the authors, there could be several explanations for the evident decline in productivity, such as the legal framework, labor representation, government regulations, the complexity of the structure and system, contract conventions, delivery methods, and technicalissues.

Although many people use new technical tools to maintain their professional position and distinction, researchers are still divided over how new technology could assist project managementin this field, according to Carrie, Dossick, and Neff (2010). This study examines how technology affects project management with a particular emphasis on a South African constructioncompany.

The East London Industrial Development Zone (ELIDZ) has acquired several ICT tools during thepast ten years to enhance project execution inside the company. Many of these tools are not beingused at all, and very few of them are being used efficiently.Here are a few of the causes of these problems:

- New systems don't interface with older systems.
- Lack of proper end-user training,

- The organization did not budget for several systems, which need a lot of staff to administerthem,

Employee resistance to change and reluctance to adopt new working practices. Insufficient technical assistance provided by the system developer.

The organization had a project management system for a while, but it was discovered to be lackingin a few of the functional areas that the organization needs. Eskom has no trouble using the facilities management software that it bought from the United States of America, but ELIDZ is unable to boost its effectiveness. It does not work well with the current financial system and takestoo many human resources to operate.

In order for enterprises in the construction sector to achieve coordination and synergy in multiple projects, research gaps concerning the impact of technology on project management in South Africa and how to employ technology in project management need to be filled. Future study should focus on three areas,including the environment, organization, and technology, according to Smith, Mossman, and Emmitt (2011), to better understand how setting and surroundings affect project performance.

About financial integration, the system did not have access to live operating costs, such as rental rates. Tenants were given invoices for the costs, but the system did not record any payments.

Because of their poor computer literacy, the operators were unable to use the systems.

Operators who knew what they were doing and understood the system had to input a lot of information into the systems.

The systems were labor-intensive, needing several operators to input the massive amounts of data in addition to the operators' minimal computer knowledge. The organization simply lacked sufficient operators, something they were unaware of before making a purchase.

The workers' buy-in and support were lacking. Many workers were not utilizing the systems. Theinformation was therefore unreliable.

The organization's IT division was unaware of the systems' technical requirements. The systems did not perform at their best.

Given this, the goalmouth of this research is to determine the ways in which ELIDZ's building project management is impacted by employee attitudes regarding information and communication technology adoption, communication, and technology.

1.2 Problem Statement

The management literature has frequently addressed projects, covering topics such as financial viability, competitiveness, effectiveness, efficiency, and relevance. Project success, according to the PMBOK 4th edition (2008), is described as achieving the triple objective, which is satisfying the predefined standards for scope, quality, and time. Over time, CARE International (CI) expanded as an organization, necessitating modifications in its operations and procedures. Employee use of electronic devices at CARE has significantly expanded, and the organization has made more expenditures in communications and data management systems (CARE International, 2023). Finding out if it was helping the organization was the goal of the research. The intended organizational changes are intended to reduce processing times for important operations and eliminate repetitive procedures. This should increase output and efficiency while also raising the standard of services rendered.

Empirical evidence from information technology researchers indicates that IT investments boost a company's competitive advantage, output, and managerial abilities (Griffith, 1999). Research from developed nations has demonstrated that information technology may support socioeconomic advancement when there is adequate infrastructure in place.

Notable instances in industrialized countries where substantial expenditures in information technology (IT) have resulted in considerable effects include a 7.8% an expansion of the GDP (grossdomestic product) of the United States, an 8.0% increase in the GDP of the UK, an 8.3% increase in the GDP of Singapore, and an 8.4% increase in the GDP of Australia (Kamel, Rateb & El-Tawil,2009).

Among the notable research on the impact of IT on performance is Kinuthia's (2012) analysis of the relationship between IT spending and the effectiveness of non-

governmental organizations in Kenya. The investigation concluded that IT was essential to improving performance. In a similar vein, Waruguru (2012) investigated how ICT affected Kenya's airline sector's performance and discovered that ICT greatly enhanced business performance. Other local studies on the subject include Abdirahman's (2016) investigation into the extent of ICT utilization in Somalia SMEs. The study found that these SMEs' lack of knowledge and experience in all facets of ICT is the main barrier to their adoption. Due to previous research's lack of in-depth insights and analysis of the themes covered in this study, the impact of information technology on project success in Mogadishu is not well known.

Thus, the primary deficiency that motivated the researcher to manner this study was the disregard for the linking between information technology and project performance concerning data management, high-caliber services, and goal attainment, as well as the insufficient evaluation of their noteworthy consequences. Furthermore, no research has been done specifically looking at how information technology affects project success in Somalia. In contrast to other research, this one focuses on CARE's IT usage and how it influences project success.

1.3 Objectives of the Study

1.3.1 General objective

The primary objective of this study is to inspect how information technology affects the CARE international organization's project aims in Mogadishu, Somalia.

1.3.2 Specific objectives

The study's particular goals are:

- To ascertain how much CARE International uses information technology.
- To assess the relationship between IT and quality of service at CARE International.
- To assess the relationship between IT and achievement of Targets.
- To assess the relationship between IT and accountability.

1.4 Hypothesis of the Study

The researcher created the following theories in order to fulfill the study's objectives: H0: There is no appreciable connection between project success and information technology. H1: There is a direct link between project success and information technology.

1.5 Significance of the Study

This study has major implications for how NGOs are run in Somalia. It serves as a valuable resource for adopting and implementing technological advancements, both currently and in the future. The study yielded valuable insights on the extent of information technology implementation in projects at CARE International. This would enable them to enhance their proficiency in delivering services. The study may offer the company novel concepts and training resources to enhance their understanding of performance and effectiveness in their organizations, specifically in relation to information technology. Researchers might derive benefits from the study as it contributes to the expanding knowledge base in the field of IT. This can be a very helpful resource while conducting technological research. In an effort to close the academic gap, the study looked at the connection between project success and technology advancements.

1.6 Scope of the Study

This study looks at how information technology affects initiatives run by the humanitarian organization CARE in Somalia's capital and most populous city, Mogadishu. The organization's primary office is in Mogadishu, and several programs are now being executed in this city. As a result, the researcher was able to carefully choose a variety of service delivery initiatives to utilize as a case study. The researcher chose CARE

International Organization, an NGO, to gather relevant data about devices, internet usage, cost control, data management, and planning. CARE has been delivering urgent aid and life- preservingsupport to the Somali population since 1981. Since then, the main program objectives have been focused on sustainable pastoralist endeavors, primary school education, teacher preparation, adult literacy, small-scale

enterprise development, water and sanitation, and media advancement. Their partnerships include local government, leaders of civil society, and relief organizations operating in Somalia and abroad. May 2023 to September 2023 was the study's completion period.

1.7 Limitation of the Study

The research findings may lack generalizability and applicability to other firms due to the variations in IT usage rules among different organizations in the country. The study encountered the difficulty of locating respondents in Mogadishu, as many of them frequently travel for work. To gather the data, the researcher needed to allocate additional time. The lack of pertinent IT research in Somalia further reduced the study's scope by reducing the availability of secondary data sources.

2. LITERATURE REVIEW

In this chapter, the study's key terms—such as project, project management, project success, and technology in project management—are defined in detail. This chapter discusses the conceptual structure and provides a thorough study of the theoretical and empirical literature.

2.1 Definition of a Project

To conduct this study, it is necessary to establish a clear definition of what qualifies as a project and what does not. It can be difficult to define a project precisely, and the widely accepted definition of "a project is a task with a start and a finish" is frequently insufficient (Maylor, 2010). A project is defined as "a temporary endeavor undertaken to produce a unique product, service, or outcome" by PMI (Project Management Institution) (PMI, 2016). However, the definition may vary based on the circumstances and the constitution. Maylor (2010) asserts that a project is typically characterized by its uniqueness, transient nature, and targeted objectives. A project should possess both an initiation and a conclusion, while simultaneously being transient in terms of group composition and the discontinuation of funding upon completion. The project's objective should primarily revolve around achieving a specific outcome, even if the project does not necessarily commence with a well-defined notion of what will be accomplished and how (Maylor, 2010).

2.2 Definition of a Non-Project

The delineated attributes have defined the criteria for what qualifies as a project. Many of these attributes can be observed in everyday tasks, therefore it is crucial to discern the distinction between a project and normal labor. This occurs because resources are allocated towards everyday operational tasks that may not contribute to the development of innovative new goods, which are necessary for long-term strategic goals (Larson and Gray, 2011). Fowler, Lindahl, and Scold (2015) conducted an empirical study to ascertain the connection between official project

execution, academic research, and organizations. Project management (PM) can be divided into two categories, according to Fowler et al. (2015): traditional linear PM and agile PM approaches.

The latter is specifically utilized in academic settings to oversee scientific expenditures and the process of converting funds into research outcomes. According to Fowler et al. (2015), the PM paradigm originated in traditional businesses, especially in settings where product creation is a top priority. Lenfle (2008), Lenfle and Loch (2010) bolster this assertion by scrutinizing a corpus of research and its applicability to effective research management using sophisticated knowledge experiments. Fowler et al. (2015) asserts that we are currently observing a phenomenon known as projectivization, wherein academic research is being subjected to the principles and methodologies of project management in order to conform to a prescribed set of guidelines or framework defining what a project should entail. In a survey done by Fowler et al. (2015), individuals who were involved in writing papers or dissertations expressed reluctance in categorizing their work as project-based. Despite the formalization of the work, resembling a project management approach, all individuals involved considered themselves to be operating outside of it due to the difficulty in clearly identifying the conclusive endpoint of the project in question.

Lycett, Rassau, and Danson (2004) argue that certain organizations have begun categorizing relatively straightforward projects as programs in order to circumvent the need to clearly specify the intended goal. Programs primarily aim to enhance project management by coordinating many projects and related activities. It is crucial to remember, nonetheless, that programs by themselves cannot accomplish specific project objectives (Lycett et al., 2004). A program is defined by Larson and Gray (2011) as an assemblage of related tasks aimed at accomplishing a common goal over a given duration. Within the program, every project has a project manager assigned to it. During a project's execution, the program manager's duties include monitoring developments, assessing risks, and submitting progress reports. Still, the project manager oversees and carries out the project (Lycett et al., 2004). To ensure the reliability of this study and to focus exclusively on municipal initiatives, it was necessary to establish this distinction and exclude the underlying coordination of projects.

2.3 Fundamental Explanation of Ideas IT and Organizations

In the past, non-governmental organizations (NGOs) have greatly aided in advancing a country. However, to continue their work efficiently in the modern era of technology, they require not only access to advanced technologies but also the proficiency to effectively utilize and derive benefits from the applications enabled by these technologies. Furthermore, they need quick access to "markets" so that knowledge may be shared and exchanged more easily. Often operating at the grassroots level, non-governmental organizations (NGOs) support local communities by enlistingthe aid of residents. Grassroots non-governmental organizations (NGOs) are essential to developing the abilities, information, and external support available to individuals in developing nations, particularly those living in small, isolated communities (Nitterhouse, 2010). Traditionally, Non-Governmental Organizations (NGOs) have been slower than corporate organizations in embracing information technology (IT) and taking advantage of new technological advancements (Nitterhouse, 2010). Most non-governmental organizations (NGOs) utilize conventional (manual) techniques, employing accounting software, spreadsheets, and word processing on computers, and overseeing a combination of outdated and modern components that frequently lack compatibility. Non-governmental organizations (NGOs), in contrast to corporate entities, encounter several limitations that impede their ability to embrace information technology (IT). These obstacles include things like insufficient funds for purchasing IT equipment and new technology, insufficient long-term capital for IT investments, inability to pay technical workers properly, and inability to acquire the necessary technical skills. Possible sources of financial assistance for non-governmental organizations (NGOs) include contributions from individuals, grants from government entities, fundraising initiatives, grants from funding agencies, as well as direct donations from additional non-governmental organizations. However, the majority of funding given to NGOs is used to carry out the goals, objectives, and planned projects of the organization (Hacker and Saxton, 2007). On the other hand, just a small portion of the money is set aside for staff professional development or general IT assistance.

The capacity of the company to benefit from the strategic and creative opportunities that IT brings is hampered by inadequate IT financial or strategic planning (Nitterhouse, 2010). Organizations are influenced by various aspects when

it comes to adopting IT, such as the expected advantages and obstacles. According to Brynjolfsson and Hitt (2008), a corporation is inclined to embrace new technologies if it believes it will benefit such as improved adaptability, cost savings, increased overall efficiency, and improved product quality. A company is likely to hold off on using new technologies if it senses that it is having financial difficulties, lacks IT professionals and multiskilled employees, confronts information and knowledge obstacles, and experiences resistance to new technology inside the company (Heinz, 2013).

Information technology is the collection of technologies used for information processing, storage, and transmission, including database management, hardware, software, and telecommunications (Daft, 1997). According to Ashley et al. (2003), An undertaking is deemed effective if its outcomes—including cost, schedule, quality, safety, and participant satisfaction—are better than expected or typical observations. A project is a brief cooperative undertaking that aims to provide a special good, service, or outcome. Project management is the application of information, skills, tools, and processes to efficiently complete tasks and accomplish project goals, according to the Project Management Institute (2013).

2.4 The Role and Use of IT in Organizations

The term " Technology for information and communications," or ICT, is used by the international community to describe the combined hardware, software, and telecommunications infrastructure. It's often considered a more expansive synonym for IT. For many companies, information technology is a vital instrument for enhancing productivity and fostering communication.

Information technology has the ability to provide businesses with both acute and strategic capabilities. These resources have the potential to greatly increase an organization's competitiveness when implemented and used properly (Porter, 2010). Within the company, information technology (IT) is a tool that improves sharing of knowledge, information interchange, and communication between various departments and tasks. IT serves as a catalyst for collaboration and networking among employees, customers, and partners by eliminating obstacles to immediate communication and efficient information sharing (Scott, 2013).

By fusing new technologies with both society and business, information technology promotes organizational innovation and the generation of fresh insights and understandings (Diem, 2009). Businesses are using IT to improve the dynamics of the market, competitiveness, employee engagement, productivity, and corporate repositioning against competitors, which makes it easier to enter new markets (Hagen, 2010).

2.5 Technology's Role in Modern Projects

The need to develop project management skills has gained significant recognition since the turn ofthe twenty-first century. The Third Generation of project management is the result of new ideas and approaches that have emerged in the field (Maylor, 2010). The last few decades have seen tremendous breakthroughs in modern technology, which have an impact on this phase. The development of virtual teams as a project management technique contemporary age has seen made easier by introducing communication technologies. Significant advancements have also been made in planning tools, and both modifications can profoundly alter our project work methods (Maylor, 2010).

Organizations often aim to acquire a competitive edge and enhance their performance by investing in technology. However, the extent to which technology influences project performance is contingent upon the architecture of the technological systems within the business (Anantatmula, 2008). Anantatmula (2008) emphasizes that technology should not be relied upon only to enhance project performance. However, modern technology offers numerous advantages to project managers, which can be utilized to streamline their work. In their 2007 publication, Malhotra, Majchrzak, and Rosen discuss the concept of virtual teams, which are characterized by geographically dispersed and cross-functional individuals who perform highly autonomous activities. This poses novel leadership challenges that have yet to be addressed. Instead of embodying the charismatic leadership qualities exhibited by Napoleon, which naturally engender a sense of closeness and inspire trust, we encounter a novel form of leadership. Malhotraet al. (2007) outlines six procedures that facilitate the functioning of a virtual team. In order to establish and maintain trust using communication technology, it is essential to acknowledge and value diversity, effectively conduct virtual meetings, monitor team progress, ensure

visibility and inclusion for all members, and ensure that each team member derives benefits from them participation. Regarding Goldberg's (1993) Big Five theory, which emphasizes traits such as sensitivity and friendliness, the criteria for being a leader and facilitating virtual leadership have remained unchanged. An example of extraversion, which includes qualities like warmth, energy, assertiveness, thrill looking for, and pleasant feelings, is given by Gerald (2003). Malhotra et al. (2007) illustrate how virtual communication might manifest these traits. The introduction of computers and cloud services has made it easier to save and retrieve data and documents and to maintain organizational knowledge from past projects in an effective and organized manner. Advanced technology has significantly contributed to the development and standardization of project procedures, as well as the establishment of effective communication channels for project managers (Anantatmula, 2008). The advent of technical advancements has significantly impacted the processes of project planning and implementation by governments and municipalities in society. Governments and public institutions are working more closely with citizens as a result of the convergence of developments in planning tools, citizens' broad adoption of social media, and the introduction of modern technology. By consultation with the public, this partnership seeks to give citizens a bigger say in determining policy (Wandhöfer et al., 2013). E-participation, according to Wandhöfer et al. (2013), enables speedier revisions and comments on planned projects by facilitating communication and involvement between governments and individuals. Liu and Yuan (2015) acknowledge that governmental institutions have benefited greatly from the introduction of new technologies, which have improved operational efficiency, eased activity integration, and provided individualized service. According to Liu and Yuan (2015), contemporary technology has increased the amount of communication between citizens and governmental organizations and encouraged some level of public participation in policy creation and decision-making. An important practical finding from Derous, Ryan, and Serlie's (2015) study is that businesses cannot reliably make consistent recruiting decisions within a specific segment of people. While technology can simplify many aspects of the process, such as formatting a résumé and managing working relationships, there are still areas that require human judgment, leading to inconsistencies. Kulik, Roberson, and Perry (2007) contend that when managers have limited knowledge and need to make a hiring decision, they are more inclined to rely on imperfect information

rather than giving one type of information undue influence. Despite the advancements in technology that haveprovided managers with the ability to make logical recruiting choices, the presence of the human element remains and will inevitably result in bias, as it has consistently done so in the past.

2.6 IT and Project Success

The notion of a successful project is vague and susceptible to interpretation, as noted as Salleh (2009). The fourth version of PMBOK, published in 2008, mentioned. When a project successfully meets its goals in terms of schedule, scope, and quality, it is deemed successful. Munns and Bjeirmi (2012) employ this conventional method of project management. According to the statement, the project has successfully completed its objectives regarding time, money, and quality. Additionally, it highlights the project process's quality, as mentioned by Erling et al (2009). According to Turner(2012), the criteria for evaluating success, particularly for information technology projects, include meeting deadlines, staying within the allocated budget, and fulfilling the specified requirements. Erling et al (2009) asserted that a project's success entails both the effective administration of the project and the successful outcome of the project itself, taking into account its broader and long- term influence. It was observed that project management can be evaluated upon project completion. This implies that in numerous instances, the criteria for success would be establishedmonths or even years after the project has been finished, particularly in the case of public projects. As a result, taking into account the previously listed success variables makes evaluating a project's success difficult (Erling et al., 2009).

Baccarini (2007) adopts a distinct perspective on the concept of project success, considering it as the success of the final product. This means assessing the final product's quality and impact on theuser, as well as the degree to which the user is satisfied that their needs have been addressed, strategic organizational goals have been attained, and stakeholder criteria have been satisfied. Project success was characterized by Ashley et al. (2003) as achieving outcomes that beyond expectations or the standard Regarding price, timing, caliber, security, and contentment of participants. Project accomplishment, according to Baker et al. (1988), is comprised of both technical performance and key stakeholder satisfaction,

such as clients, project team members, and users. In their study on information systems project management, Power and Dickson (1996) found that cost, time, and user satisfaction, and how it affects computer operations were all significant factors to take into account.

Lim and Mohamed (1999) advised project managers to broaden their perspective on project success. They stressed that achieving preset objectives in terms of time, money, performance, quality, and safety should not be the only way to gauge success. Project managers must also consider the requirements and expectations of users, as they might not share the same predefined project goals. Therefore, each individual will have a distinct anticipation regarding the result of the project and their interpretation of whether it is successful or unsuccessful (Lim and Mohamed, 1999). Information technology (IT), software development, business process reform, and research and development are the domains in which projects are primarily utilized (White and Fortune, 2002; Besner and Hobbs, 2009). A project's planning, monitoring, and control are all part of the intricate process of project management. It has long been employed as a strategy for allocating, planning, obtaining, and managing resources to support an organization in achieving its objectives.

Technical instruments include the critical path method (CPM), program evaluation and review technique (PERT), and work breakdown structure (WBS)., and Gantt chart have proven beneficial to project managers in a variety of project management domains, including risk analysis, project control and monitoring, and project planning. Still, mastering these techniques could take a lot of time and work, and it might also mean adjusting to the rapidly evolving project and technology environments. These limitations could make it more difficult to apply these approaches, especially in projects when deadlines, budgets, and performance standards are tight. Therefore, projects initiated by firms across various industries all have one fundamental requirement: they must be efficiently executed. Liberatore et al. (2009) state that the processes of organizing, staffing, planning, monitoring, controlling, and assessing are all included in management.

2.7 Information Technology and Project Management

The last few years have seen a peak in the interdependence between project management and information technologies. The usage of project management software and other management the number of solutions, including risk management (RM) tools, supply chain management (SCM), knowledge management systems (KMS), decision support systems (DSS), executive support systems (ESS), virtual reality (VR), and management information systems (MIS), has significantly expanded.

The project management literature contains numerous publications that go into great detail about the concept of a project. For instance, according to PMI (2000), projects are "temporary endeavors" with a clear start and end, aimed at creating a distinctive product or service that has not been previously developed'. In their 2009 publication, Dave Cleland and Lew Ireland define an undertaking as the combination of institutional resources with the purpose of creating something that did not previously exist. This creation improves an organization's capacity to carry out its strategies efficiently. Project Management tools have been defined by different writers in different ways. Fox, Murray et al (2003) characterize them as software specifically designed for project management. However, Milosevic (2003) sees them as methodical processes or techniques that project managers do in order to generate particular project management results. Therefore, the central component of an Information System for Project Management (PMIS) typically consists of project management software that requires extensive modification, configuration, or customization prior to its implementation. As per Besner C. Hobbs (2009), projects are mostly utilized in the domains of information technology (IT), Research and development, software development, and business process reform. The deployment of information technology (IT) is crucial in resolving issues that may arise at different phases of a project's life cycle, according to Meredith and Mantel’s (2006) findings. They recommend utilizing project management software, a crucial computer application, to save the time and cost required to obtain accurate project planning reasons.

Directing, supervising, and administering. Retailers employed knowledge management to improve individual capabilities as well as the general monitoring and control of the business, and they offered additional assistance throughout crucial

project lifecycle phases, like project risk management (Ahlemann, 2008). The Project Management Information System (PMIS) is thought to be superseded by achieving project goals and utilizing project strategies. Its main objective is to give project managers the fundamental understanding of a project's cost-time performance metrics and how they relate to each other (Raymond L, 2008). According to estimates from Gartner Research, 75% of large IT projects in the information technology (IT) industry that are assisted by a project management information system (PMIS) will succeed, but 75% of projects in same sector that do not receive such support would fail (Light et al., 2005).

In the 1960s, a few corporations began producing computers, marking the shift from scientific discovery to useful corporate equipment for data processing machines (Ceruzzi, 2003). Information technology is widely recognized as having a significant impact on economic growth and development, which is vital for the development of many nations. By utilizing tools and software, contemporary firms have been able to prioritize the creation or acquisition of software to mechanize activities, hence facilitating expansion, minimizing operational expenses, and fostering a competitive edge (Kelly, 1995). Many corporations allocate resources towards technological advancements to improve their operational efficiency and secure a competitive edge. According to Anantatmula and Kanungo, technological solutions ought to be customized to meet specific project and business needs. Since technology makes it easier to manage project complexity, resource utilization, and project integration, it is crucial for improving processes (Anantatmula, et al. 2005). In light of this research, the researcher came to the conclusion that project managers can use technology, integrating risk management tools, scheduling, cloud computing, information sharing, and video conferences, in addition to the internet and intranet, to more successfully lead projects, improve communication, and assign tasks efficiently and effectively. Nevertheless, the findings of an IBM study carried out in

Merely 41% of projects successfully met their time, financial, and quality criteria, according to a 2008 study on " explains how businesses can handle change and offers tactics for enhancing project results". On the other hand, around 60% of projects fell short of their planned goals. Considering the results of the IBM study, 44% of the participants failed to meet at least one success metric, while 15% either

failed to achieve all goals or had their projects terminated within the initial phase (IBM,2008).

2.8 Study Related Theories

The study will employ theoretical models to ascertain how information technology affects the achievement of project objectives. This study will employ the Davis et al. (1989) Technology Acceptance Model and the Leavitt (1985) Organizational Model.

2.9 The Technology Acceptance Model (TAM)

New information technology must improve organizational effectiveness and be embraced and used by potential clients. Most people agree that the Technology Acceptance Model (TAM) is an extremely useful instrument for gauging computer usage, both in practical settings and in academic research (Davis, 1989). The Technology Acceptance Model (TAM) aligns utilizing Rogers' idea of innovation dissemination (1983), which posits that technology adoption is influenced by various aspects, such as the perceived benefits and the level of simplicity in its use. The perception of utility and the impression of usability are two distinct beliefs that are especially addressed by the Technology Acceptance Model (TAM). When someone feels that using a system might improve their performance, that person is expressing perceived usefulness. The idea of apparent ease of access pertains to a person's evaluation of the degree of simplicity involved in utilizing a technology. The Technology Acceptance Model (TAM) aims to provide both predictive and explanatory capabilities to assist academics and practitioners in understanding the reasons behind the unacceptability of a specific technology and taking suitable actions accordingly.

2.10 Project Management Body of Knowledge (PMBoK)

The PMBoK [1] from the Project Management Institute divides project management into ten knowledge domains. which also outlines the tasks that must be completed in each area. Project scope, time, cost, quality, human resources, communications, risk, procurement, and stakeholder management are all aspects of

the project integration process. The latter was most recently included in the 2013 version.

The PMBoK is a collection of best practices that provides direction for addressing a particular knowledge area. There are available data flow diagrams and process groupings, although they can be very interpreted. Seldom is this theory comprehended till a student truly completes a project and uses the theory as a guide. Even yet, when a student is overseeing a project under the direction of a knowledgeable and knowledgeable project manager, effective project outcomes usually result. Of course, others might counter that some people are "born" project managers, meaning they have the abilities from birth and are good at this, therefore they don't need advice from an experienced professional to succeed. This may be true for people with natural talents, however, the PMBoK and expert advice can help even "natural" project managers advance their skills.

Using the analogy of cooking, some people are "born" cooks and don't actually require a cooking school. Still, most individuals need to learn how to cook. It is not an innate ability. In a similar vein, most people are not naturally skilled at project management. Even yet, we can all still do better by using best practices and what we've learned from others to achieve even greater outcomes.

Conversely, a person who completes a commercial cooking course does not ensure that they will be able to prepare delicious cuisine. Their work significantly improves when they practice in the kitchen and learn from a senior chef with experience. Likewise, there's no assurance that someone who takes a project management course would be able to deliver a project output or outcome that meets the needs of the client. However, there is a better chance of generating an output that meets the client's needs and benefits them if they are supervised by a seasoned project manager. Using the analogy of cooking, the corpus of knowledge is not a recipe book but rather an encyclopedia of cooking techniques. The PMBoK can be seen similarly to those cookbooks, especially the older ones, that feature sections on topics such as "kitchen and meal planning," "kitchen equipment," "methods of cooking," "entertaining," "sauces," and "batters.". The theory or lens through which to observe the project and interpret the practice is provided by the PMBoK. This is like how a student who has studied commercial cooking may only truly become a skilled chef while working under the guidance of an experienced head chef. The

commercial cooking course teaches students how to cook and offers a theoretical understanding of why certain things are done in a particular way, but it does not ensure that the students will be able to prepare a delicious meal.

2.11 PRINCE2

Europe, Australia, and the United Kingdom are the three regions where PRINCE2 project management is most used. Projects IN Controlled Environments, or "PRINCE2," is an acronym for a technique that uses fewer project stages, distinct roles and responsibilities, and seven procedures to manage the project life cycle with an emphasis on risk and resource management.

Before starting, a project must have an ordered and controlled plan that will remain organized throughout the project's life cycle, as required by PRINCE2. This is accomplished by segmenting the project logically. The seven themes (business case, organization, plans, progress, risks, quality, and change) and the seven processes (starting up, initiating, directing, controlling, managing stage boundaries, managing product delivery, and closing a project) that make up PRINCE2's core components are as follows: business justification, learn from experience, defined roles and responsibilities, manage by stages, manage by exception, focus on products, and tailor to suit the environment.

The principles-based nature of PRINCE2 is important because processes are vulnerable to the whims of the specific environment in which they are implemented. Because there may be flaws, it helps to have a solid grasp of the guiding principles of the processes so that the methodology can be effectively applied to each project.

Using the analogy of cooking, PRINCE2 may be understood as a process-based approach. It can be compared to a recipe book that provides detailed instructions for completing activities, along with detailed descriptions of the documents and fields that need to be filled out. It follows rules. It is a "how to do" guide. Despite resembling annotations in a recipe book that instruct the cook and provide essential instructions, the guiding principles of the stages hold immense importance. For instance, "Knead the dough till it is elastic and adjust the water accordingly." Thus, in the context of a project, it would be similar to saying, "Make sure that the planning process places more emphasis on the product than the

activities, and work through product-based planning until a team member can develop the final product from that point."

PRINCE2 can be confusing and cumbersome, though. The issue stems from a lack of understanding of how to use or modify PRINCE2 in a particular project setting.

2.12 Difference between PMBoK and PRINCE2

There are several comments on the differences between the two approaches, and a full paper may be presented on them. Siegelaub offers a succinct analogy. In a nutshell, PMBoK is a collection of best practices and knowledge. It's not an approach. It is very interpretable and lacks a foundation in principles.

Conversely, PRINCE2 is a methodology. The difference between the two is that the former is highly interpretable, whilst the latter is prescriptive and contains process activities, each of which includes templates and suggested actions.

PRINCE2's elegance lies in its principles-based design. This sets it apart from PMBoK, which lacks explicit principles guiding the knowledge domains. Rather of dictating papers and activities to be followed, PRINCE2's fundamental principles offer a project manager a single point of reference to evaluate the degree to which the principle is being executed. When using template-driven techniques, this is a common mistake. One benefit of PRINCE2 is its compatibility with both Waterfall and Agile delivery methods for IT development. One of its drawbacks is that it lacks a change management strategy to oversee the individuals impacted by the change and particular procurement management measures. In governance, it is occasionally perceived as overhead.

2.13 Integrating New Technology: Challenges Companies Face

If businesses want to thrive in the global market, they must look at how they conduct business, adapt to the changing requirements of their clients, and use new technology to maintain a competitive advantage. To remain competitive, businesses need to continuously modify their technologies and processes. All modifications must have a well-defined and comprehensible purpose prior to execution, aligning with the organization's overall goals, revenue growth, and operational improvements.

There are challenges associated with every change, be it technological or procedural. Businesses planning to integrate new technologies must consider the challenges that individuals impacted by the change may face as they adjust to and welcome the change. Businesses must investigate the reasons behind their adoption of new technology to better understand how it will eventually benefit people it affects.

It is well knowledge that technological endeavors in their entirety frequently fail. In addition to being a major undertaking, implementing a new IT system is also the most costly, time-consuming, and frustrating aspect of any IT project (Moynihan, 1997). Similarly, about half of all IT system development projects are unsuccessful. The stakes are higher when working with cutting-edge technology because of the increased repercussions for missing deadlines, being late, and going over budget. When implementing new technologies, the information technology industry is not the only one to encounter difficulties and obstacles. Data suggests that similar trends and failure rates occur in a large variety of additional technologies, including biotechnologies, telecommunication, materials, and transportation in addition to computers. A 1998 study of 100 canceled IT projects revealed that 87% of them went over budget by more than 50% and 45% did not produce the expected results when examining the specific reasons of IT failure (Asante, 2013). IT projects being abandoned before a final product is completed is not frequent, but. IT endeavors appear to fail more frequently than any other aspect of a business, and IT artifacts are not always used. Several studies have shown that integrating IT into a Projects tend to have higher levels of risk, which tilts the odds more toward project failure than success. The high rate of system failure was not frequently predicted among the many early projections of technology's impact on companies. Even though Gibbs claims that operational failure is at a record high of 70%, reliable data on the failure rate is hard to come by (Gibbs, 1994). However, based on Eason's study of the literature, "it started at about 40 percent and has stubbornly refused to diminish through the numerous polls undertaken over the previous 30 years" (Eason, 2001) despite significant technical developments. One general conclusion may be made, even though there are probably going to be many variations in the success of different application types: The project's 27 odds of failure increase with project size and cost. Technology projects not only run the risk of total failure but also of budget overruns and timeline misses. For example, IT projects frequently incur major

schedule and cost overruns. Similarly, studies done in 1995 found that only 26 percent of information systems projects are finished on schedule, on budget, and in compliance with all specifications. Legris, Ingham, and Collerette (2003) discovered that over 50% of IT projects exceeded budgets, took longer to complete, and had less features and functionalities than anticipated. Some of the main obstacles that firms encounter when integrating new technologies are listed below:

Lack of an effective digital transformation strategy:

A plan that doesn't address the "What," "Why," "When," and "How" in detail would be difficult to implement and would only aggravate those who will be affected. Creating a compelling vision for the capabilities and purpose of the technology is essential. It is imperative to educate the audience on the ways in which new technology can improve their lives and positively impact their everyday routines. The benefits and drawbacks of the change must be fully considered in a comprehensive strategy program that considers the impact on the business, its employees, suppliers, and customers.

The rapid advancement of technology: Rapid technical advancement is increasingly powering the economy. To stay competitive and seize new possibilities, businesses need to stay up to date on the latest technical advancements and trends. As a result, they are able to stay up with the pace of technological innovation. This necessitates the continual definition of technological requirements by an well-organized and competent technical staff.

Lack of communication and involvement: To encourage early and rapid adoption, it is beneficial to let everyone know about the upcoming integration. Making the audience feel involved in the transition will be greatly aided by being open and honest about the new integration as well as by revealing the transformation strategy and goals. Being transparent and honest about the new integration, along with the transformation approach and goals, will go a long way toward making the audience feel invested in the change. Showcasing the new service offerings and its rational and financial benefits for the company as well as the individual might be quite good. Ensure that everyone understands the advantages of the new technology over the outdated one. It is courteous to consider users' wants because they value functionality and user-friendliness.

The absence of Change Champions: Early in the deployment phase, it is imperative to assemble a group of technology advocates who will extol the new technology and generate enthusiasm. After informing every one of the changes, the team can address any questions or concerns and individually explain the advantages to those who will be affected.

Lack of training and up skilling: It is essential to identify, support, educate, and enhance the abilities of those impacted by new technologies. Comparative pilots ought to be carried out, and people who are not tech-savvy might find training difficult. They must be motivated to carry out experiments and obtain input. This will specify the sort, style, and degree of instruction required.

Instability: The people in charge of new technology must first invest time in investigating and identifying any dangers that could render the technology inoperable or useless before it can be incorporated or put into use. A pilot project to function as an experiment and demonstrate technological viability will be necessary to prevent such.

Lack of a contingency plan: Every new development in technology brings risks and vulnerabilities. Before implementing any technology, a comprehensive plan for its implementation together with a contingency plan to minimize disruptions must be established. In conclusion, in order to guarantee that the integration of the new technology is provided and embraced, expectations regarding it should be reasonable, the influence comprehended, and obstacles and hazards examined and identified.

2.14 Organizational Model

The research was conducted with the theoretical framework of Leavitt's (1985) organizational model. As seen in Figure 2.1, he proposed that an organization's four interrelated parts are its people, technology, task (strategy), and structure. The frameworks for authority, operations, and communication are all part of an organization's structure. The series of tasks that must be finished in an organization is referred to as the workflow. Organizational strategy is the process of setting long-term goals and allocating resources to achieve these goals. The term "People" designates the people who are employed by the company. Technology is the usual of

instruments, processes, and guidelines that an organization use to convert inputs into outputs It was claimed by Leavitt (1985) that should any one of the four components' alterations, the remaining three must adjust accordingly. An organization's destiny is determined by the way these four components interact. The study's approach was chosen because, by considering several crucial factors, it may contribute to a complete considerate of the relationship between businesses and information technology. This study examines the relationship between organizational traits and technical improvements as well as the influence of information technology on firms.

2.15 Review of Empirical Literature

This section examines much pertinent research that have addressed or just marginally addressed the gap investigated by the current study. The literature review encompassed many geographical regions, including global, developing nations, Africa, and Somalia. The literature review on project success provided several examples and materials that facilitated a comprehensive understanding of the vocabulary and concepts related to the subject. While it's a relatively new field in academia, project management has already been the subject of much study and research. Furthermore, the subject matter pertaining to the achievement of the project's achievements have been cited by several researchers (Lavagnon, 2009). Lavagnon carried out an exhaustive examination of articles from two scholarly journals pertaining to project management with order to pinpoint the precise elements that make up project success. His research examines the idea of success by comparing and contrasting project success with project management accomplishment. The findings verified that the concept of project success is vague and complex. It was determined that project success deserves greater focus than project management success, given its diverse nature. Undoubtedly, project management revolves around individuals and resources, as correctly pointed out by Nidiffer and Dolan. But it's also critical to recognize that technology and tools are vital in helping project managers organize and oversee projects in a successful and effective manner (Nidiffer, et al., 2005).

Adoption of information technology can progress the efficacy and presentation of non- governmental organizations (NGOs) as well as have a significant impact on a corporation's performance. Several studies have attempted to

investigate the reasons for the varying degrees of IT adoption among different countries and enterprises, despite the proven benefits of investing in IT. Despite two decades of World Wide Web development, the digital divide persists (Javier and Frank, 2006). The disparity in digital refers to the disparity in the adoption and utilization of information technology among different countries (Javier and Frank, 2006). The variation in the adoption of information technology (IT) among different countries can be explained by two factors: the inherent qualities of the technology itself and the characteristics of the organizations orindividuals using it, among which are the institutional and social context in which they function (Javier and Frank, 2006). The underdeveloped world has embraced information technology (IT) more rapidly than developing economies, resulting in higher growth rates compared to other areas (Javier and Frank, 2006). Issues of political liberty have a direct impact on the adoption of technology. Countries that have promoted the use of information technology have seen an increase in democracy, human rights, and societal empowerment. Conversely however, dictatorial states suppress the application of IT to control political and economic liberties (Amar and Marwa, 2012). Information technology-using countries have been proved to have greater income levels, literacy, trade, technological infrastructure, and market-oriented policies, regardless of whether they are developed or developing (Ann, Casey, Kathryn and Ricardo, 2007). Authoritarian regimes are compelled to either reject or embrace technology due to its controllability. Such regimes typically promote television consumption while discouraging. The lack of internet control is a significant aspect that led to the demise of Mubarak's rule in Egypt (Amar and Marwa, 2012), as stated by Javier and Frank (2006). A company's adoption of information technology can be influenced by factors at the organizational level, such as the anticipated advantages and challenges. When a company perceives that a new technology would lead to cost savings, improved overall efficiency, benefits, higher adaptability, and improved product quality, it will adopt it (Brynjolfsson and Hitt, 2006). When faced with adverse financial circumstances, management impediments (like internal resistance to new technology), information and knowledge barriers, human capital constraints (like a lack of IT specialists or multiskilled workers), or other challenges, a company is less likely to adopt new technology (Heinz, 2002). The concept of technology diffusion also broadens the range of knowledge on the adoption of IT by suggesting that proficient users of computers are the first to adopt a new technology, while less

skilled users hold off until devices are more durable and readilyavailable (Mukoyama, 2003). Based on his theory of the diffusion of innovation, Rogers (1995) divided adopters into five groups: innovators, early adopters, early majority, late majority, and laggards. An individual or an organization can be classified into either group based on their ability and readiness to welcome innovation. This covers elements like cognizance, curiosity, assessment, experimentation, exposure, and ability to adopt. The technology's qualities, practicality, and ease of adoption all played a role in how easily it was adopted. Therefore, the adoption of IT can be influenced by both the specific features of the technology and the entity that is adopting it (Javier and Frank, 2006).

Examples of research conducted on the influence of IT on functionality encompassed a study carried out in 1984 by Pulley and Braunstein on a company that provides information services, which revealed a correlation with enhanced economies of scope. Another notable study was Diewert and Smith's (1994), which provided an intriguing case study of a well-known Canadian retail corporation.

Based on their accounting system, the distribution company showed an amazing 9.4% quarterly improvement in multi-factor productivity for six consecutive quarters beginning with the second quarter of 1988. They maintained that the significant increase in productivity was caused by the computer revolution, which made it possible for businesses to accurately manage their inventory item purchases and sales, as well as to employ cutting-edge computer software to reduce the costs associated with keeping inventory on hand. Loveman (2001) could not discover any proof that IT expenditures improved performance. Nevertheless, Weill (1990) found that transactional IT improved performance.

The company's overall performance increased; however, the implementation of strategic IT or informational IT did not contribute to this improvement. Pourmirza (2006) discovered that the employment of IT labor resulted in significant improvements in organizational performance, while the utilization of IT capital did not yield the same benefits. According to Abdirahman's (2016) study on the implementation of ICT in small and medium enterprises (SMEs) in Somalia, the primary obstacle to ICT adoption in these SMEs is a deficiency in understanding and proficiency across all facets of ICT. According to Abdirahman (2016), the utilization

of ICT in Somalia is generally minimal. However, there has been noticeable progress in the telecommunications industry in recent years.

2.16 Theoretical Framework of the Study

The conceptual framework treats data management systems, internet applications, mobile and handheld devices, and project success as independent variables and dependent variables, respectively. The accomplishment of goals, provision of services, accountability, and operational effectiveness are the metrics used to assess an organization's performance.

3. RESEARCH METHODOLOGY

The research methods used are included in this chapter. Research design, study area, target population, sample size and sampling techniques, data types to be collected, research instruments, data analysis, and ethical considerations are some of the subjects covered.

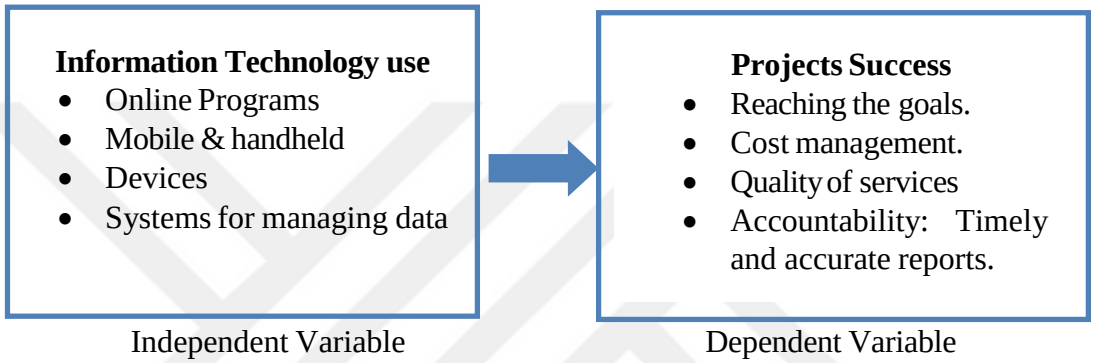

Figure 3.1: Conceptual Framework

Source: Adapted from Kinuthia, 2012

3.1 Research Design

A descriptive research design was employed in the study to precisely portray the attributes of the variables. An investigation using a mixed methods approach was conducted to fully understand the study's objectives. The study design employed in this study was the utilization of questionnaires to gather information from the selected population. Semi-structured interviews were also conducted by the researcher, mainly to find out the viewpoints of the selected staff members regarding the research.

3.2 Description of the Study Area

The research was showed in Mogadishu city, which is in northeastern Somalia. Mogadishu is the capital of the Republic of Somalia, a self-declared independent state that is not internationally recognized. This city is the political and economic center of Somalia, serving as its capital and major urban area. Many of the projects supported

by donors are now being executed in this city. Therefore, the researcher had the opportunity to deliberately select from a variety of service delivery programs to use as a case study. Consequently, the researcher chose CARE International Organization, located in Mogadishu, as a case study. The researcher chose CARE primarily because to the organization's extensive implementation of projects in the city, involving collaboration with various stakeholders. Additionally, CARE provides funding for initiatives implemented by other organizations.

3.3 Data Source

3.3.1 Primary data

Primary data are those that the researcher obtains directly from the source by personal experience and direct efforts in order to particularly address a study problem. The main or fundamental data. The sources for this study consisted of data acquired from various individuals, including the Deputy Country Director, Executive Director, Assistant, IT Manager, Senior Program Manager, Project Manager, Project Officer, Data Collector, Support Staff, M&E Team, and others. Interviews and questionnaires were employed to collect the data.

In educational and evaluation research, questionnaires are the most often used data collection tool. It takes a long time to complete the various steps involved in developing a valid and reliable questionnaire.

The test-retest reliability measure was taken to ensure the accuracy and consistency of our survey’s responses. When a group of people are given the same test repeatedly over a given length of time, the results from Time 1 and Time 2 can be correlated to assess the test's stability over time. This is known as test-retest reliability.

3.3.2 Secondary data

Information that has already been collected and recorded for a reason unrelated to the current research challenge by a party other than the user is referred to as secondary data. It describes the readily available data that is collected from various sources, including books, journals, websites, internal organizational records, government publications, censuses, and more.

3.4 Target Population

The investigation concentrated on the complete personnel of the CARE International Organization who were relevant to the study. There were 85 permanent employees working in Mogadishu at the time of the investigation. As a result, the researcher collected data from the whole population using the Census Survey method. A census is a quantitative research method that involves enumerating all members of a population. A census involves the total enumeration of all study items, while sampling involves the enumeration of a selected subgroup of elements for participation.

Table 3.1: Target Population

Respondent	Total Population
Deputy Country Director	2
Executive Director	1
Senior Program Manager	3
Project Manager	9
Project Officer	10
Assistant IT Manager	3
Support Staff	21
Data Collector	19
Monitoring and Evaluation team	10
Other staff	7
Total	85

Source: CI HR Department, 2023

3.5 Data Collation Method and Research Instrument: Questionnaire and Key Information

3.5.1 Interview

To gather data, the study used semi-structured interviews and questionnaires. There were many kinds of questions on the form, including both closed- and open-ended inquiries. Closed-ended questions were employed by the study to elicit information, but open- ended questions permitted the respondent to freely express their opinions. Project managers, project officers, data collectors, and other support personnel made up many of the participants.

The questionnaire comprised three components. Section A encompassed the demographic data of the respondent; Section B encompassed the utilization of Information Technology at CARE International, and Section C contained information regarding the correlation between IT and project success. A semi-structured key informant interview was held with the Executive Manager and the IT Department Manager. The guiding questions addressed how information technology (IT) ensures the project's sustainability, how IT affects workers' productivity, how much money CARE allots for IT-related activities, what issues CARE encountered with IT during project implementation, and how IT affects the project's success overall.

3.5.2 Data processing and analysis

The statistical software program SPSS was used to examine the study's data, and descriptive statistics including means, percentages, and frequency distributions were employed. Regression analysis was used to conduct inferential statistics, and the standard deviation was calculated to assess the consistency and variability of responses over the duration of the study. Every statistical dataset was assigned a significance level of 5%.

$$Y = \alpha + \beta X + \varepsilon \tag{3.1}$$

The link between the independent variable (information technology) and the dependent variable (project success) in this study was established using a linear regression model.

Whereas: Y – Depended Variable (Project Success) X – Independent Variable (Information Technology)

It is necessary to estimate two parameters: α (Alpha) and β (Beta). The regression line's height and angle with respect to the horizontal are determined by these factors. The error term is ε.noise or disruption phrase. This variable includes all other aspects, excluding information technology, that have an impact on the dependent variable (project success).

3.5.3 Research ethics

Conducting research necessitates skill, diligence, honesty, and integrity. This is undertaken to acknowledge and safeguard the entitlements of those involved in the study. The investigation was carried out using the utmost ethical considerations, including informed consent, anonymity, self-determination, and confidentiality. Anonymity refers to the condition where subjects' identities cannot be connected, even by the researcher, to their individual responses in a study. The responders' names were retained anonymous in this study by not being disclosed in theresearch reports or on the questionnaire, and the written consent was kept separate from the questionnaire. A confidentiality guarantee suggests that participants' information won't be utilizedto identify them in the public domain. An essential ethical obligation in research is the proper handling and control of data expansion.

4. DATA PRESENTATION, ANALYSIS and INTERPRETATION

This chapter's primary subjects are the presentation and analysis of the data acquired from the original source. The bulk of the data was gathered through the use of questionnaires and semi-structured interviews. There were 85 questionnaires distributed in all to project managers, project officers, data collectors, support personnel, and monitoring and evaluation team members. Additionally, seven respondents were questioned.

4.1 Response Rate

The study focused on the entire CI Mogadishu population, consisting of 90 respondents. 85 of these completed the questionnaire, yielding a response rate of 94%. The response rates that were obtained were representative and satisfactory, meeting the requirements established by Mugenda and Mugenda (2003), which state that a response rate of at least 50% is appropriate for reporting and analysis, that a rate of 60% is good, and that a rate of 70% or more is excellent. The remarkable response rate was achieved through additional endeavors, including in-person visits to personally request the participation of the respondents in the study.

4.1.1 Respondent's profile

Under this section, these respondents' demographic details are displayed.

Table 4.1: Gender of the Respondents

Gender of Respondent	Frequency	Percentage %
Male	49	57.6
Female	36	42.4
Total	85	100.0

Source: Conducted Survey, 2023

Table 4.1 clearly shows that the study had a higher proportion of male respondents, accounting for 57.6%, compared to females who made up 42.4%. The findings suggest that there is a gender imbalance in employment in CI Mogadishu.

4.1.2 Age distribution of the respondents

The participant's age groups were questioned by the researcher. The results are shown in Table 4.2 below.

Table 4.2: Age Distribution of the Respondents

Respondents Age	Frequency	Percentage %
18-30 Years	39	45.9
31-40 Years	42	49.4
41-50 Years	3	3.5
Above 50 Years	1	1.2
Total	85	100

Source: Conducted Survey, 2023

Regarding Table 4.2, most of the participants in the study were in the age bracket of 31-40, accounting for 49.4% of the total. Additionally, 45.9% of the respondents were between the ages of 18 and 30. This suggests that they are highly productive and can make a substantial contribution to the project's success.

4.1.3 Highest level of qualification of respondents

We also asked the participants how educated they were. According to Table 4.3, the majority of the respondents (58.8%) held a bachelor's degree, 35.3% had a master's degree or higher, 4.7% had a certificate or diploma, and 1.2% had completed secondary education. Consequently, the majority of the participants possessed advanced education and expertise in their roles in project management.

Table 4.3: Education of Respondent's by Highest Level of Qualification

Level of Qualification	Frequency	Percentage %
Secondary Education	1	1.2
Certificate/Diploma	4	4.7
Bachelor's Degree	50	58.8
Master's or above	30	35.3
Total	85	100

Source: Conducted Survey, 2023

4.1.4 Work experience at care international

The participants were requested to specify the length of time they had been employed at CAREInternational. The results are displayed in Table 4.4.

Table 4.4: Distribution of Respondent's by Work Experience at CARE International

Level of Qualification	Frequency	Percentage %
Less than 5 Years	46	54.1
5-10 Years	34	40
11-15 Years	2	2.4
16-20 Years	3	3.5
Total	85	100

Source: Conducted Survey, 2023

According to the data presented in Table 4.4, the majority of respondents (54.1%) had been employed at CARE International for less than 5 years. 40% had worked there for 5 to 10 years, 2.4% for 11-15 years, and 3.5% for 16-20 years. Therefore, many of the participants had prior expertise in addressing the concerns raised in the questionnaire.

4.1.5 Duties of Respondents by the Field of Work

The respondents were asked to identify their field of employment in order to comprehend their duties.

Table 4.5: Duties of respondents by the Field of Work

Field of Work	Frequency	Percentage %
Project Manager	10	11.8
Project Officer	16	18.8
Support Staff	25	29.4
Data Collector	15	17.6
Monitoring, Evaluation team	10	11.8
Others, Please Specify	9	10.6
Total	85	100

Source: Conducted Survey, 2023

According to the information in Table 4.5, the majority of participants (29.4%) worked for CARE International Organization as support staff. Additionally, 10.6% of the respondents fell into the "others" category, which included 2 senior program officers, 2 project advisors, and 5 program officers.

4.2 Level of IT Usage at CARE International

The determination of the study was to determine the range of IT devices available to respondents, how often they were utilized, and what kind of IT-based data management the company used.

Table 4.6: Organization IT device(s) at Disposal to Enable Performance of Duties

IT Devices	Frequency	Percentage %
Mobile Phone	18	21.2
Desktop Computer	7	8.2
Laptop	54	63.5
iPad or Tablet	6	7.0.
Total	85	100

Source: Conducted Survey, 2023

According to Table 4.6, the bulk of the respondents, specifically 63.5%, possessed laptops. Additionally, 21.2% had access to an organized cell phone, 8.2% had a desktop computer, and 7.0% had an iPad or tablet. These devices were used by the respondents to carry out their responsibilities at CARE International Organization.

Table 4.7: Level of IT Usage at CARE International Organization

Statements	Very Little (%)	Little (%)	Neutral (%)	Large (%)	VeryLarge (%)	Mean	SD
Every employee has a desktop, laptop, or iPad for work. (To fulfil them duties)	0	0	4.9	18.0	78.2	4.14	0.436
Every worker has a company phone.	8.9	21.3	24.4	4.4	42.2	3.55	1.443
CAREemploys GrantManagement software for grant management.	1.7	0	12.8	12.9	74.9	4.68	0.843
The company usesHRMS	1.8	0	13.4	17.5	68.7	4.54	0.912
CARE has a ProgramManagement Information System (MIS).	9.5	18.2	18.7	28.9	30.1	4.12	1.432
All staff are granted unrestricted Internetaccess for the purpose of communication.	1.7	0	20.6	20.6	57.1	4.32	0.913
The group has socialmedia pages on (Facebook, Twitter, and other sites.)	3.4	4.5	9.4	34.4	47.7	4.54	1.023
Integrated EnterpriseApplications (ERP)and accountingsoftware help the organization reach its aim.	0	13.4	21.3	14.1	53.9	4.65	1.132
The organization useGoogle Docs, Skype, and Lotus for communication.	0	15.2	7.3	15.4	60.1	4.46	1.231

Source: Conducted Survey, 2023

The degree of IT usage in the organization was measured using a 5-point Likert scale with five answers (Little, Very Little, Neutral, Large, and Very Large). Likert scales function best when questions are focused on a single topic. Table 4.7 of the study shows that 76.2% of respondents agreed that all employees use computers (desktops, laptops, and iPads) to do their jobs, 74.6% said CARE uses Grant Management software to manage grants, 69.8% said the organization uses HR Management Information System, and 61.9% said the organization uses collaboration tools. However, 54% of respondents said they would use accounting software and integrated enterprise applications (ERP) to accomplish their goals, and 57.1% were undecided about giving their staff unrestricted access to the Internet for communications. Thirty-four percent of CARE responders have a Program Management Information System (MIS), and 41.3% of staff have official phones. This demonstrates that a considerable portion of the CARE team utilized IT tools and systems for work.

4.3 Information Technology and Project Success

The study examined the effects of IT on project success at CARE International Organization by examining Data Management, Achievement of Targets, Quality of Service, and Accountability. Participants were asked to score how much they agreed with various project success statements. Responses were scored on a five-point Likert scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree. SPSS-generated mean and standard deviations are displayed in the tables below.

Table 4.8: Data Management

Data Management	Strongly Disagree(%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly Agree(%)	Mean	SD
IT tools and services have greatly enhancedfield officers' data collection procedure.	0	0	9.8	31.24	63.4	4.65	0.743
It's easier to use IT tools to gather info now than it was in the past using paper.	0	0	8.8	13.9	77.1	5.63	0.721
IT has made it easier to handle the data needs ofdifferent departments.	0	0	13.1	29.2	57.9	4.53	0.723
Using IT data management tools has sped up the process of making choices.	0	0	31.3	26.5	43.8	4.32	0.878
The use of IT has improved knowledge management within the firm	0	0	16.1	38.8	45.6	4.43	0.831
IT solutions haveEnhanced workforce efficiency at CARE.	0	0	15.1	42.4	45.8	4.23	0.698
IT has enhanced collaboration with CARE partners.	0	1.5	28.9	32.8	39.9	4.79	0.828
Average						**4.63**	

Source: Conducted Survey, 2023

Table 4.8 reveals that most respondents (M=4.63) agreed that IT had improved CARE project Success in data management operations. IT tools make data collecting easier than paper-based processes (M=5.63, SD=0.721), field officers' data collection (M=4.65, SD=0.743), and departmental data needs management (M=4.53, SD=0.723). The mean of facilitation of better knowledge management for CARE was [M=4.43, SD=0.831], IT tools improved operational efficiency of CARE employees was [M=4.23, SD=0.698], decision-making process was [M=4.79, SD=0.828], and collaboration with CARE partners was [M=4.08, SD=0.848].

"Use of IT tools in data collection is easier as compared to previous paper-based process" [M=4.67, SD = 0.648] has the highest mean value, while "Use of IT has helped improve collaboration activities with CARE partners" [M=4.08, SD = 0.848] holds the lowest mean value. This demonstrates the high data management rate of CARE International.

Table 4.9: Achievement of Targets

Achievement of Targets	StronglyDisagree (%)	Disagree (%)	Neutraln(%)	Agree (%)	StronglyAgree (%)	Mean	SD
IT has greatly enhanced target monitoring and reporting at CARE.	5.1	0	29.0	31.5	39.4	3.54	1.067
.IT solutions have enabled CARE to setmeasurable targets duringplanning.	3.6	0	26.9	34.2	32.8	4.73	0.894
IT aids CARE'simplementation.target schedules timely	0	0	21.5	43.1	37.1	4.29	0.787
CARE staff haveimproved productivity using IT.	0	0	9.7	39.7	51.1	4.32	0.743
Use of IT has helped CARE improve employee'increased flexibility.	0	6.5	9.9	25.8	56.3	4.42	0.835
Average						**4.26**	

Source: Conducted Survey, 2023

Table 4.9 shows that, on average, respondents agreed that IT had a substantial impact on the attainment of the CARE project aim (M=4.76). The efficiency and flexibility of CARE staff have increased thanks to IT [M=4.32, SD=0.743, SD=0.835]. Utilizing IT has aided CARE in incorporating quantitative targets into planning [M=4.73, SD=0.894], implementing target schedules on time [M=4.29, SD=0.787], and enhancing target reporting and monitoring [M=3.54,SD=1.067]. The issue with the lowest mean value [M=3.54, SD=1.067] is " At CARE, the use of IT has greatly enhanced target monitoring and reporting," while the issue with the greatest mean value [M=4.32, SD=0.743] is "Use of IT has helped CARE improve employee productivity." Thisimplies that the use of IT influences the CARE project's ability to meet deadlines.

Table 4.10: Quality of Service

Quality of Service	StronglyDisagree(%)	Disagree (%)	Neutral (%)	Agree (%)	StronglyAgree (%)	Mean	SD
CARE stakeholders \Receive better projectoutputs thanks to IT.	1.4	0	27.9	34.1	34.9	4.67	0.858
IT improvescommunication with beneficiaries andservice delivery partners.	3.9	7.2	7.7	32.5	52.1	4.23	1.094
IT has enhanced projectplanning and execution,reaching stakeholders more effectively.	3.8	3.4	17.2	45.1	33.8	3.87	0.973
CARE has expandedits reach through socialmediaplatforms such as Facebook and Twitter. its recipients	16.1	13.2	29.3	18.6	23.7	3.65	1.376
Social media profiles (Facebook/Twitter/other) have helped CAREconnect with partners.	5.9	18.3	18.1	29.9	31.7	3.86	1.432
Average						**4.1**	

Source: Conducted Survey, 2023

Table 4.10 demonstrates that, with an average mean of [M=4.1], the majority of respondents thought that IT-facilitated service delivery had a significant impact on the success of the CARE initiative in terms of quality of service. CARE's use of social media (Facebook, Twitter, and other) helped reach its partners [M=3.59, SD=1.265] and beneficiaries [M=3.65, SD=1.376]. Technology-enhanced project planning and execution [M=3.87, SD=0.973], quality service delivery to stakeholders [M=4.67], communication with beneficiaries and partners in service delivery [M=4.23, SD=1.094], and other factors. "Using social media accounts helped CARE reach its beneficiaries" is the issue with the lowest mean value [M=3.65, SD=1.376], while "using IT facilitated better communication with its beneficiaries and partners in service delivery" has the highest mean value [M=4.23, SD=1.094]. This suggests that IT improves service standards and the success percentage of CARE projects.

Table 4.11: Accountability

Accountability	StronglyDisagree(%)	Disagree (%)	Neutral (%)	Agree (%)	StronglyAgree (%)	Mean	SD
IT helps CARE Organization track budget-to-actual variations in real time.	0	0	16.2	34.2	51.5	4.59	0.778
IT helps CARE Organization delivers timely reports.	0	0	3.8	38.4	58.2	4.73	0.573
Information Technology helps CARE Organizationprovide reliable reports.	0	0	9.7	26.7	88.3	4.86	0.687
IT aids CARE's clean auditproposal.	0	8.7	24.2	34.2	43.6	4.76	0.948
Average						**4.74**	

Source: Conducted Survey, 2023

Table 4.11 reveals that most respondents agreed that IT has improved resource accountability at CARE Organization (M=4.74). IT has enabled CARE Organization to provide accurate reports [M=4.86, SD=0.687], timely reports [M=4.73, SD=0.573], real-time variance monitoring [M=4.59, SD=0.778], and a clean audit recommendation [M=4.76, SD=0.992].

The issue with the lowest mean value [M=4.76, SD=0.992] is "IT helped CARE to get a clean audit recommendation," while the issue with the greatest mean value [M=4.86, SD=0.687] is "Use of IT has helped CARE Organization to produce accurate reports." This demonstrates how CARE Organization's IT has enhanced resource accountability.

4.4 Role of IT for Project Success at CI Mogadishu

Respondents were asked if IT is necessary for project success to assess their IT usage and confidence in IT. Table 4.12 shows their responses.

Table 4. 12: The Important role of IT for the Project Success at CI Mogadishu

	Frequency	Percentage
Yes	85	100%
No	0	0

Source: Conducted Survey, 2023

4.4.1 Relationship between information technology and project success

Regression analysis was used in the study at CI Mogadishu, Somalia, to examine the associationbetween IT and project success. For the purpose of the study, the researcher computed regressions using the statistical program for social sciences (SPSS V20.0).

Table 4. 13: Regression Model Summary

Model Summary				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of theEstimate**
1	0.419[a]	.183	.1762	.4883112
a. Predictors: (Constant), Information Technology				
b. Dependent Variable: Project Success				

Source: Conducted Survey, 2023

The coefficient of determination, which is 0.183, indicates that the level of IT can account for roughly18.3% of the variation in project success at CARE International.

Table 4.14: Analysis of Variance (ANOVA)

Model		**Sum of Squares**	**Df**	**Mean Square**	**F**	**Sig.**
1	Regression	2.824	1	2.824	12.862	.001[b]
	Residual	12.862	61	.213		
	Total	15.686	62			
a. Dependent Variable: Project Success						
b. Predictors: (Constant), Information Technology						

Source: Conducted Survey, 2023

With a F value of 12.86 and a p value of 0.001, as indicated in Table 4.14, the regression modelis statistically significant.

Table 4.15: Coefficients

Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**T**	**Sig.**
		B	**Std. Error**	**Beta**		
1	(Constant)	1.466	.727		2.016	.048
	Information Technology	.632	.174	.419	3.603	.001
a. Dependent Variable: Project Success						

Source: Conducted Survey, 2023

The study's alternative hypothesis (H1) is accepted while the null hypothesis (H0) is rejected considering its findings. As a result, CI Mogadishu's one-way ANOVA revealed a strong correlation between information technology and project success (F = 12.984, p = 0.001). To put it another way, information technology and project success are positively correlated. This was clear from the analysis of all the information technology and project success variables, including target attainment, data management, IT device utilization, accountability, and service quality. This suggests that a unit increase in the variable found in the regression model leads toa comparable increase in project success at CI Mogadishu, leaving all other variables equal. Furthermore, the regression results showed that the influence of IT on project success at CI Mogadishu is statistically significantly explained by the extent of IT utilization. This is as a result of the probability value inTable 4.15's regression model being less than Z0.05 (5%). P is equal to 0.001.

The result of the regression model is displayed below. - Y=1.466

+0.632X + ε, or: -

Project Success = 1.466+ 0.632 (Information Technology)

The model's coefficient is 0.628, which indicates that an increase in information technology utilization of one unit would be predicted to result in a cumulative increase in project success of 0.628 units.

The t-test value of 3.603 indicates a substantial departure from zero. Keep in mind that the F- statistic value and (3.603)^2 = 12.892 are nearly equal.

As a result, the above-mentioned regression model equation verified that information technologyand project success are positively correlated.

5. SUMMARY, CONCLUSION and RECOMMENDATIONS

The primary objective of this chapter was to provide a concise overview, definitive conclusion, and informed suggestion of the study. The study's findings were derived from its objectives, which were to ascertain the extent of information technology utilization at CARE International, explore the advantages of employing IT at CARE International, evaluate the correlation between IT and service quality at CARE International, and assess the influence of IT on project success

5.1 Summary of Findings

The results indicate that a significant proportion of the participants were male individuals aged between 31 and 40 years, with an educational attainment at the bachelor's degree level. The results additionally indicate that a significant proportion of the participants in the survey had been employed at CARE International for a duration of less than 5 years. All responders unanimously agreed that the utilization of IT services by CARE International had significantly enhanced the execution of projects. The study findings indicated that a large proportion of the participants identified several ways in which information technology (IT) had enhanced project success at CARE International. These included helping the company manage its data and information more effectively, boosting staff productivity, and providing stakeholders with high-quality project delivery and accountability. The study revealed that the utilization of IT has a positive impact on project success by enhancing collaborative activities between CARE International and its partners. The study found that the use of IT had moderately improved the accuracy of monitoring and reporting targets, as well as the achievement of organizational objectives. Additionally, IT was found to be effective in including quantitative targets during the planning stage. Research on bivariate correlation demonstrates robust association between information technology and the achievement of project objectives. Hence, the research conclusively demonstrates that Information Technology (IT) has a favorable correlation with project success.

5.2 Conclusion

The study revealed that CARE International (CI) Mogadishu had implemented and utilized information technology (IT) to a reasonable extent, and that IT had a significant influence on the success of projects. IT significantly influenced project success through enhanced collaboration with partners, accurate achievement, monitoring, and evaluation of project targets, and their incorporation into the planning stages at CI Mogadishu. The utilization of information technology has elevated service delivery standards, heightened stakeholder satisfaction, raised staff productivity, and expanded the flexibility of various organizational activities. The investigation confirmed that information technology and project goal attainment are positively correlated. This was demonstrated by the examination of numerous factors, such as IT devices, data management,accountability, target achievement, and service quality that are connected to information technology and project performance.

The building sector could undergo a radical change thanks to digital solutions. The industry is robust and creative, and new technologies are already being incorporated into established operations.

Adoption of digital technology has several potential advantages, including increased output, better cooperation, better project management, fewer errors, quicker decision-making, better cost control, and eventually higher project success rates.

Nonetheless, there are still certain obstacles to adoption of IT. We define these obstacles and offer solutions for getting through them.

Resistance to Change

Resistance to change is probably one of the biggest obstacles to the adoption of digital technology in the construction industry, as it is in many other sectors. Many professionals who have worked in the field for a long time may be reluctant to adopt new technology since they are used to using traditional ways.

Overcoming Resistance to Change

Not everything has to change at once. A manageable method to start the digital transformation process is by investing in scalable solutions that can grow with

project requirements and adjust to the demands of a company. Digital advocates ought to collaborate with their peers to highlight the advantages of digital solutions and promote uptake. One way to progressively reduce opposition to new procedures is to emphasize that technology cannot and will not replace critical specialists; rather, it will enable people to perform their jobs more efficiently.

Lack of Awareness & Education

Certain stakeholders may be unaware of the features and advantages of digital tools. Their desire to purchase and use this technology may be hampered by their ignorance.

Addressing the Lack of Awareness

In order to teach individuals how to use digital solutions and demonstrate to the industry the difference they can make; education and training programs are crucial. It is crucial to emphasize how new digital solutions can improve productivity and streamline operations for those looking to implement them in a business.

Fragmented Workflows & Collaboration

Workflows in construction projects become fragmented due to the involvement of various stakeholders. It can be difficult to integrate digital technologies across different teams and guarantee collaboration.

Creating Seamless Workflows & Enabling Collaboration

It's critical to promote a collaborative and innovative culture inside the sector. All stakeholders must be included in the digital transformation process, with important players taking part in decision-making and striving to boost buy-in. The fragmented nature of the construction industry led to the creation of many digital solutions, which are intended to enhance processes and foster more industry collaboration.

Cost Concerns

Digital technology initial expenditures can be seen as expensive, with many SMEs and smaller firms finding these prices prohibitive. These investments include software, hardware, and training.

The Cost of Not Adopting Digital

Even if the initial investment in digital may be high, it can reduce costs elsewhere in the company and result in long-term benefits. For instance, procurement teams can utilize a digital platform to assist them negotiate better rates for goods. Make sure adequate research is done and the teams that will need to use the product are informed before investing in any new digital solution. Making adequate preparations for a new work style will help you make sure that any money you invest is spent sensibly.

Data Security & Privacy Concerns

Like other businesses, the construction sector handles sensitive data, so protecting the security and privacy of this data in digital systems is a legitimate concern.

Tackling Security & Privacy Concerns

Data protection starts with putting strong security measures in place and making sure that rules and industry standards are followed. Because digital solutions eliminate some of the labor-intensive manual steps involved in data capture and increase accuracy, they frequently improve data security. Digital data is also backed up, so unlike traditional paper-based records, it is not at risk of being destroyed by fire or flood. Make sure you do extensive research on the supplier before deploying a new digital solution and confirm that they have security accreditations like Cyber Essentials in place. Digital transformation is a cultural movement and a dedication to advancement rather than experimenting with new tools merely for the sake of experimenting. The construction sector must maintain its culture of ongoing development and accept constructive change on a group basis. The industry is entering a new era of efficiency, cooperation, and unparalleled advancement by utilizing the power of digital.

5.2.1 Top project management strategies to maximize benefits and increase efficiency

Setting Clear Objectives

Setting specific goals is essential to effective project management. It develops a strategy with the goal of aligning the team's actions with "SMART" goals—

specific, measurable, attainable, relevant, and time-bound. Such clear objectives set the project structure and guarantee that everyone is aware of the intended deliverables, milestones, and goals. This tactic aids the PM in establishing a common understanding of expectations, reducing miscommunication and scope creep. The advantages of creating an exact structure don't stop there! These goals serve as standards for evaluating success, enabling management teams to monitor developments that meet their expectations. However, it also aids in the authorities' ability to make well-informed judgments and maintain focus on the primary objective. If project managers establish clear objectives early on, they have a good possibility of increasing accountability and increasing the chances that the project will succeed within the specified constraints and timelines.

Effective and Realistic Planning

When planning a project, what is probably realistic? We'll concentrate on this next. To ensure that comprehensive project execution plans are in place, it covers everything from cautious tasks and resources to time frame detailing and targeting. With this tactic in place, companies can organize time and distribute resources more efficiently while removing uncertainty. It is evident that by dividing the primary goal into smaller, more manageable tasks, this enhances workflow. The greatest advantage of establishing reasonable objectives and accounting for constraints and challenges is that it reduces unforeseen issues that may arise during a project. Furthermore, it promotes proactive problem-solving, which facilitates risk identification and mitigation strategies. It also fosters excellent team alignment, improves communication, and increases confidence in reaching deadlines. As you can see, this approach is not that difficult as long as the primary goal is divided into more digestible chunks for the staff.

Task Prioritizations Based on Criticality

This fundamental approach to project management makes sure that resources are used effectively and goals are met on schedule. To put it more clearly, when project managers (PMs) prioritize and identify high-impact tasks that have a direct impact on project performance, businesses make effective use of their time, resources, and labor. By allowing workers to address the most pressing problems first, it reduces obstacles and increases output. This implies that you prioritize what needs to be done first as a PM.

Using this method, workflow may be managed in an orderly fashion, guaranteeing that critical tasks align with project milestones and overarching objectives. Additionally, it facilitates dependency management, which improves workflow efficiency. What we observe are those businesses that can reduce project risks, boost productivity, move projects forward, and act quickly on critical tasks. This aids everyone in completing the assignment effectively and on time.

Resource Allocation

It should be "Right Resource Allocation," not just "Resource Allocation"! This is a standout example of a benchmark project management approach that can maximize resource usage.

Resources must match the requirements of your project, whether they are material, financial, or human. You can assign the appropriate resources to the appropriate tasks at the appropriate moment by touching on the key component of this efficient allocation! The purpose of the PM's job is to guarantee that the company has reduced waste and redundancy while maintaining optimal utilization as backup. This can be achieved by evaluating the resource availability, skill sets, and expertise. This tactic will enable equitable responsibility distribution, reducing stress and maintaining focus on productivity.

Timeline Management

Even when your staff members fulfill their obligations, the project will be deemed unsuccessful in one respect if they are unable to complete it before the deadline. For this reason, we believe that timeline management is essential to the success of any project. It guarantees that assignments meet objectives and due dates without adding needless time to the process. This tactic increases productivity and efficiency while allocating resources as efficiently as possible.

It facilitates progress tracking and encourages accountability through well-defined goals. Reducing risks, promoting swift modifications, and removing impediments can all be accomplished through effective timetable management.

As we previously indicated, it also greatly motivates your staff to prioritize jobs and keep their attention on important goals. The finest result of this strategy is that it streamlines the workflow of your project, fosters teamwork, and gives

educated decision-making authority. Undoubtedly, having a well-organized schedule makes project management much simpler.

Employment of Efficient PM Software

When you can use new technology to make your job simpler, why must you complete everything by hand? With its ability to maximize productivity and streamline procedures, effective project management software has become increasingly popular among project managers as the go-to tactic in today's corporate environment.

It is possible to observe how these technologies concentrate communication, task distribution, and progress tracking, promoting openness and cooperation amongst units.

The real-time insights that PM software systems may offer support resource allocation and decision-making that is well-informed. With capabilities like resource management, analytics, and deadlines, these software programs increase productivity by automating tedious work and lowering mistakes. By evaluating this PM software solutions' capacity to foster accountability, guarantee that all parties stay in line with project objectives, etc., you can comprehend the potential of these tools. These project management technologies are now recognized in the business world as "necessities" rather than just "options".

Risk Assessment

Risk assessment is a crucial tool in project management as it helps detect obstacles and design preventive measures. This approach supports vulnerability identification, which enables proactive management and backup plan construction. By limiting disruptions through the examination of unpredictability, it promotes smoother project advancement. Risk assessment is evident in creating a preparedness atmosphere that enables your teams to make forward plans and make effective use of scarce resources. You may now see that, in comparison to its prior state, project management is far more effective and productive when it is supported by a strong risk assessment framework.

Using Modern Instruments to Welcome Success Technology is omnipresent. It is crucial. Technology is there for you to use to get the most out of it, whether it is for resource allocation, planning, monitoring, or plan execution. There will be new

inventions every day, therefore project managers need to stay current on the latest tactics to ensure that their projects go as smoothly as possible.

5.3 Recommendations

Given the reported findings, the following recommendations are proposed:

The study suggests that CARE should adopt IT tools and services to gain a competitive advantage and enhance service delivery to its stakeholders. Additionally, CI Mogadishu should provide regular IT training to its employees based on their specific needs, to improve organizational efficiency and enhance the performance of CI Mogadishu.

The study also discovered that the utilization of social media platforms such as Facebook, Twitter, and others has facilitated CARE in effectively connecting with its beneficiaries and partners, albeit to a limited degree. Hence, the study suggests that the management of CARE should regularly update their social media profiles in order to effectively engage with their target audience.

The study also discovered that the utilization of information technology had a moderate impact on CARE International's ability to effectively track and report targets with precision. The study suggests that the management of CARE should enhance the level of IT investment to promote the success and long-term viability of projects.

It is highly recommended that both government and private sector housing projects incorporate information technology, as it produces pertinent, precise, and protected data that is essential for the project's successful and efficient administration and decision-making. Moreover, the study findings demonstrated that IT has a substantial influence on project management.

The utilization of information technology has a beneficial effect on project success, particularly in the design phase and in achieving schedule and financial objectives. Hence, it is advisable to incorporate an IT strategy and embrace emerging technologies as crucial components for achievingsuccess in project management. This is because IT expedites and streamlines the execution of various tasks.

5.4 Areas for Further Research

This research aimed to evaluate the influence of information technology on project success in Mogadishu, specifically focusing on CI Mogadishu, in order to address the existing knowledge gap. The study primarily concentrated on a single organization, thus necessitating the replication of the study across several organizations to determine if there are any additional variables affectingthe impact of information technology on project success in Mogadishu. The report also suggests conducting further research on the obstacles encountered in the utilization of information technology in enterprises in Mogadishu.

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APPENDIXES

Appendix A: Research Questionnaire

Dear Respondents (To be answered by Staffs)**:**

I'm researching "**The Role of Information Technology on Projects Management: A Case Studyof CARE International Organization in Mogadishu, Somalia**" in partial fulfillment of the requirements for Istanbul Gedik University's Master of Engineering Management. Your information is vital for the accomplishment of the study; It will be kept private and used exclusively for academic purposes.

No need for writing your name.

- Please make a tick mark (√) in the appropriate box

Thank you in advance for your time!

Mohamed Elmi Osman

Part A: General Information:

1. Gender:

   Male ☐ Female ☐

2. Age Category

   18-30 years ☐ 31-40 years ☐

   41-50 years ☐ Above 50 years ☐

3. Indicate your highest level of qualification

   Secondary Education ☐ Certificate/Diploma ☐

   1st Degree Graduate Masters or Above ☐

4. How many years have you worked for CARE International?

   Less than 5 Years ☐ 5-10 Years ☐

   11-15 Years 16-20Years ☐ above 20 Years ☐

5. Please state your area of Responsibility

   Project Manager ☐ Project Officer ☐

   Data Collector ☐ Support Staffs ☐

   M&E Team ☐

   Other, Please Specify: _____

Part B: Usage of Information Technology

1. What IT device(s) do you have at your disposal to perform your duty?

   Mobile phone ☐ Desktop Computer ☐

   Laptop iPad or Tablet Other, ☐

   please specify _____

1. Kindly indicate the extent of use of the followingsystems/devices at CARE International (tick where appropriate).

Hence: 5: Very large 4: Large 3: Neutral 2: Little 1: Very little

Statements	1	2	3	4	5
Every employee has access to computers (desktops, laptops, and iPads) forwork-related tasks.					
Every worker has a company phone.					
CARE manages its grants via grant management software.					
The organization uses HR Management Information System					
CARE have Program Management Information System (MIS)					
Every employee can communicate via the Internet at any time.					
The company is active on social media (Facebook, Twitter, and otherplatforms).					
To help them reach their goal, the organization makes use of integrated enterprise applications (ERP) and accounting software.					
The company communicates using Google Docs, Skype, and Lotus ascollaboration tools.					

Part C: Information Technology and project success

1. To what extent do you agree with the following statements in regard to use of IT at CARE International?

Hence: 5: Strongly Agree 4: Agree 3: Neutral2: Disagree 1:Strongly Disagree

Data Management	**1**	**2**	**3**	**4**	**5**
Field officers' data collection process has been greatly enhanced by theuse of IT technologies and services.					
Using IT tools to collect data is simpler than using the prior paper-basedmethod.					
IT use has made it easier to manage departmental data requirements.					
The decision-making process has accelerated with the use of ITdata management tools.					
The organization's use of IT has improved knowledge management.					
Employees at CARE are now operating more efficiently thanks tothe use of IT technologies.					
The use of IT has enhanced CARE partners' collaborative efforts.					
Achieve Targets	**1**	**2**	**3**	**4**	**5**
At CAR, the use of IT has greatly enhanced target monitoring andreporting.					
Utilizing it has aided CARE in including quantifiable goals during theplanning phase.					
Utilizing IT has enabled CARE to meet deadlines and meet targets.					
Employee productivity has increased at CARE thanks to the use of IT.					
The use of IT has improved staff flexibility at CARE.					
Quality of Service	**1**	**2**	**3**	**4**	**5**
The quality of project outputs to CARE stakeholders has improvedthanks to the use of IT.					
Better contact with service delivery partners and beneficiaries has beenmade possible by the use of IT.					
Utilizing IT has enhanced project planning and execution processes tobetter reach stakeholders.					
Utilizing social media platforms (such as Facebook, Twitter, and others)has aided CARE in reaching its recipients.					
Utilizing social media platforms like Facebook, Twitter, and others hasaided CARE in reaching its partners.					
Accountability					
The CARE Organization has been able to track real-time budget vs actualvariations because to the use of IT.					
The CARE Organization has produced reports on time thanks					

to the use ofIT.					
The CARE Organization has produced reliable reports thanks to the use of IT.					
CARE Organization receives a clean audit recommendation thanks to its use of IT.					

1. Do you believe that information technology plays a significant part in the accomplishment ofCARE International projects?

If Yes / No, why?

☐ Yes ☐ No

2. Could you please offer ideas or recommendations for further ways that information technology use has guaranteed project success?

Appendix B: Interview Guide

This interview is intended to collect information "**The Impact of Information Technology on Projects Success: A Case Study of CARE International Organization in Mogadishu, Somalia**". Your sincere and frank response to the following questions will highly be appreciated. All information that you provide will be held in strict confidence.

1. Do you believe that information technology plays a part in making sure the project is sustainable? If so, how?

_____

_____

_____

_____

2. How much of your organization's budget is allocated to information technology, in youropinion?

_____

_____

_____

_____

3. How does IT impact employees' performance at work? And how?

4. What IT difficulties do you encounter while putting projects into action?

5. How does information technology affect your projects?

RESUME

Mohamed Elmi OSMAN

EDUCATION:

- Bachelors Science of Civil Engineering Graduated 2020
- Masters of Engineering Management Graduated 2023