PROJECT MANAGEMENT PRACTICES AND IMPLEMENTATION OF AFFORDABLE HOUSING PROJECTS IN MOMBASA COUNTY, KENYA

MWENDWA LINAH KANA

A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF A MASTER OF ARTS DEGREE IN PROJECT PLANNING AND MANAGEMENT, FACULTY OF BUSINESS AND MANAGEMENT SCIENCES, THE UNIVERSITY OF NAIROBI

2022

DECLARATION

This research project is my original work and has not been presented to any other institution for examination or publishing whatsoever.

Signature: …….. Date 15th November 2022

NAME: LINAH KANA MWENDWA

REG NO: L50/86408/2016

This research project has been submitted for examination with my approval as the University Supervisor (S)

Signature: **Date: 06th December, 2022**

DR. JOHNBOSCO KISIMBII (PhD)

Lecturer; Department of Finance and Accounting

Faculty of Business and Management Science

University of Nairobi

DEDICATION

This work is dedicated to my late mother, Rahab Wanjiku Mwendwa, although she is no longer with me, the values she instilled in me continue to propel me to greater heights.

ACKNOWLEDGEMENT

First, I wish to thank God Almighty for giving me good health, perseverance, provision and protection throughout the times of study for this degree. My sincere gratitude goes to my supervisor Dr. Johnbosco Kisimbii for his patience, meticulous supervision, and guidance that he gave me throughout the research period; thank you sir. I would like to thank the University of Nairobi for giving me the opportunity to undertake this course. I humbly acknowledge my fellow colleagues for their invaluable encouragement, suggestions and support. I would like to acknowledge my life partner, Justus Mwakideu, whose words of encouragement and drive to see me succeed have anchored me to stay the course. To our children, Taraji Wanjiku and Jaaziah Mshila, thank you for teaching me patience and for being a great source of inspiration. I love you both very much. A special feeling of gratitude goes to my dad, John Kinya and my older siblings, Dr. Ngala Mwendwa, Mmasechaba Motubatse and Margaret Büche who continue to challenge me to become the best version of myself.

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ACRONYMS AND ABBREVIATIONS

AsDM	Asian Development Bank
AfDB	African Development BANK
G.o.K	Government of Kenya
HIV	Human Immunodeficiency Virus
ICT	Information Communication Technology
KNBS	Kenya National Bureau of Statistics
MDGs	Millennium Development Goals
PPP	Public Private Partnership
SPSS	Statistical Package for Social Scientists

ABSTRACT

This study was carried out with the tenacity of examining the influence of project management practices on the implementation of Affordable Housing Projects in Mombasa County, Kenya. The study was based on four objectives including: to establish the influence of stakeholders' participation practice in the implementation of Affordable Housing Projects in Kenya; to determine the extent to which cost management practice influences the implementation of Affordable Housing Projects in Kenya; to examine the extent to which project scheduling practice influences the implementation of Affordable Housing Projects in Kenya; and to assess the extent to which risk management practice influences the implementation of Affordable Housing Projects in Kenya. The study was anchored on Project Management Competency Theory and supported by two theories including: Uncertain theory and the theory of project implementation. A descriptive research design was used in this study. A total population of 241 comprising of: project managers, project quantity surveyors, tendering committee chairmen, contractors, and other personnel were the research's responders. A sample size of 150 as calculated by Yamane formula was considered for the study. The study used a questionnaire to collect primary data. The researcher obtained all the documents required for research to be taken in Kenya and a drop and pick later method was used to collect the data from the respondents. Statistical Package for Social Science was used to clean, code, input, and analyze data (SPSS, Version 25.0). Descriptive statistics, such as frequency distribution tables, were used to examine quantitative data. Linear regression analysis was used to test the hypotheses in the study. In relation to the first objective, the results indicated that majority of the respondents (71.72%) were aware that stakeholders' participation practice influences the implementation of affordable housing project. When testing the hypothesis using linear regression analysis, there was positive and significant influence of stakeholders' participation on the implementation of affordable housing project. As per the second objective, majority of the respondents (81.81%) were aware of cost management practice and did confirm that it influences the implementation of the affordable housing project. When testing the hypothesis, there was positive and significant influence of cost management practice on the implementation of affordable housing project. In the third objective, majority of the respondents (65.6%), agreed that they were aware of project scheduling practice and its influence on the implementation of housing projects. When testing the hypothesis, there was positive and significant influence of project scheduling practice on the implementation of affordable housing project. Finally, majority of the respondents (88.7%) strongly supported the idea that risk management practice influences the implementation of Affordable Housing Projects in Kenya. The study concluded that in the affordable housing project being implemented in Mombasa County, the project implementers are aware of the various project management practices including: stakeholders' participation practice, cost management practice, project scheduling practice, and risk management practice.

CHAPTER ONE
INTRODUCTION

1.1 Background of the Study

Housing is a shelter or system that supports the human as a basic infrastructural requirement. It is a societal need that is considered a right of that every individual is entitled to (Doyon and Moore, 2020). The International Covenant on Economic, Social, and Cultural Rights (1966), the Istanbul Declaration and Habitat Agenda (1996), and the Declaration on Cities and Other Human Settlements (2011) are all documents that outline human rights all include this right as core provisions (Bui & Ling, 2017; Balestra and Sultan, 2021). Golubchikov and Badyina (2019) are in general agreement that having a suitable place to live is a key component of meeting people's material requirements and that, as such, housing is one of the fundamental factors affecting life quality; making it a very crucial area of concern in the modern society.

According to the UN Habitat (2021), 330 million homes, or 1.6 billion people, lack access to safe and affordable housing in urban areas around the world. Without prompt action, the issue will worsen since by 2025, the number of people in need of housing is expected to increase by 30% to 2 billion. Supporting affordable housing is thus one of the most effective strategies to make rapidly expanding cities in the Global South run more smoothly and benefit all citizens; forcing a number of treaties to be formed to handle this issue. Due to the importance of housing projects across the globe, numerous studies have been conducted..

From the global perspective for example, in a study which gives room for more examination into the issue of affordable housing and the strategies adopted by Malaysian government like strengthening on project management process, AsDB (2021) concluded that there is a sizable gap between the demand for and supply of affordable housing due to affordability issues and the private sector's propensity to build medium- and high-cost housing. The most crucial of these are procedures related to scope management and time management, such as managing the standard of contract documents, the standard of the timetable, and the frequency of updates, which can prevent

project completion failures and support the growth of the housing industry were outlined some of which make independent variables of the current study.

Across Africa, in realization of the dire need of affordable housing, Nigeria has seen an influx of researches on how project management techniques affect how well building projects function in the past 2 decades (Olateju and Alamutu, 2020; Lawani, 2018; Zuofa & Ochieng, 2020). The studies found out that on average, there is a shortfall of decent and affordable houses to accommodate 17,910,200 people translating to 47.3% population living in urban centers. Further, it has been evident that poor housing projects implementation in major urban centers in Nigeria like Abuja is related to several factors among them being the project management practices including lack of proper planning, the scope and time resources, coupled with cost risks and human resource. Others are such as communicational issues and procurement practices that are among the emerging issues in construction (Olateju and Alamutu, 2020; Lawani, 2018; Zuofa & Ochieng, 2020).

Rwanda has been said to be among the countries in East Africa that has achieved over 51.20% mark of implementing affordable housing projects since it recovered from the civil wars in 1996 (Uwamahoro, 2019; AfDB, 2018; UNDP, 2019). The housing projects so far implemented in Rwanda's major urban centers (Kinyinya & Rwankuba Project 1300 units, Busanza I Housing Estate 1420 units, Secondary city projects 1168 units) among others have been affected by a variety of elements, such as the project management factor. Uwamahoro (2019) as guided by the stakeholders' management theory has indicated that urbanization in Rwanda has become a significant concern due to the steadily rising demand for housing in metropolitan areas, the slow and expensive supply of formal housing, and the predominately informal development of housing. This has therefore left a deficit in the annual affordable house demands in major towns like Kigali whereby against the required 30,000 units per annum, only 15,000 have been due to a number of obstacles, such as poor cost management, risk management, project plans and design, poor stakeholder's management, poor communication among others that add up to project management practices.

Across the country, In Nairobi, there are roughly 2.5 million slum dwellers in about 200 settlements, making up 60% of the city's 4.397 million residents and occupying just 6% of the land (UN-Habitat, 2021). Slums in Nairobi, like Kibera, have taken on their current form as a result of colonial-era segregation practices; slum clearance strategies implemented after independence, and more recently, an inappropriate, poorly defined land use and urban development rules. To improve the livelihood of slum dwellers across the country, the Kenya Slum Upgrading Program (KENSUP) and the Kenya Informal Settlement Improvement Project (KISIP) were both started by the Kenyan government in conjunction with other stakeholders in 2004 and 2011, respectively. Present Affordable Housing Program, and the big four agenda which has integrated the former three (GoK, 2021). The initiatives are meant to help those who live and work in slums and other informal settlements. Providing security of tenancy, bettering housing conditions, generating income, and improving physical and social infrastructure are all part of this. By the year 2020, it was actually intended to make 1.6 million people's lives better slum-dwelling 5.3 million households or people, but little has actually been done in that regard (GoK, 2019).

In major towns in Kenya whereby Mombasa County is inclusive, it has been argued that in informal settlements, the only housing alternatives for low-income people are currently accessible shelters. Owing to issues, including a lack of public participation, a scarcity of funding, actor coordination, and poor knowledge, the set housing plans for the needy and poor fail to reaching the intended audiences, and fail to alleviate the affordability needs, and solve the development problem intended. This calls for a novel approach that can address the present issues with top-down policy (Emoyo & Kising'u, 2019); a need as to why one needs to examine the available strategies and score them against project management strategy which cuts across the projects management process and the extent to which it affects these ambitious pro-poor housing projects. Equally, Kimani & Karugu (2020) and Muigai (2019) contend that because of the continued housing shortage and rising domestic demand, there is currently a massive housing deficit whose backlog is difficult to eliminate calling for practical approaches and strategies to handle the housing projects; giving room for project management as a component that needs to be examined against housing projects implementation.

In conclusion, despite the fact that the Kenyan government and other household players are working to address the issue of cheap housing using a variety of strategies including affordable housing projects with the Buxton Housing project in Mombasa being a model project (GoK, 2022), several factors like political interference and poor projects management has significantly affected the timely delivery of these projects. The construction industry places a high value on the use of project management techniques because it is necessary to coordinate the different resources utilized in building on a daily basis (Phua & Rowlinson, 2018). Any project's success is greatly influenced by how quickly it is completed from the outset through the delivery of results. This directly affects management choices including budgets, goals, and standards (Seddon, 2019); a need for examination of project management and performance or implementation of construction project with the affordable housing projects in Buxton Mombasa being a center of focus. Emoyo and Kising'u (2019) have strengthened on the need of project management practices when implementing any housing construction project by confirming that: stakeholders' management, projects team competency, project planning, schedule management, cost management, risk management and contractual management affect the Kenya Property Developers Association is an example of home development project implementation., Despite the fact that Emoyo and Kising'u (2019)'s research was done in Mombasa county Buxton affordable housing construction project, it has formed a foundation for theory and variables that can be used to inform the current study on the various practices of project management.

The Kenyan government in 2017 suggested that affordable housing was one of Kenya's key pillars for fostering sustainable socio-economic development. Through the Affordable Housing Programme (AHP), 500,000 housing units were to be delivered by 2022, with prices ranging from 600,000 Kshs. to three million Kshs, targeting lower- and middle-income demographic segments. The proposed additional houses included 20,000 houses in Makongeni, 5,000 houses for Shauri Moyo, 6,000 houses in Mombasa, and others to be in Mavoko, Machakos County and Starehe, Nairobi. 3,000 houses were to be delivered in the first phase of the scheme, according to Munyae and Odera (2021). Despite the aforementioned possibilities, there are still some challenges. Despite the aforementioned possibilities, Kenya faces a number of obstacles in its efforts to supply

affordable housing and achieve the housing objective. Funding issues, poor contractual arrangements, poor project management, political interference, high construction costs (design/materials/labor), expensive land, a lack of infrastructure (physical & social) in many Kenyan urban centers, poor technology use, poor labor management, poor stakeholder management, etc. are just a few of the issues that serve as the basis for the current study.

1.2 Statement of the Problem

Affordability of things like housing are gradually becoming a global issue due to unprecedented rates of urbanization and population increase. Only 13% of cities in the world, according to UN statistics, have affordable housing (UN HABITAT, 2016). More than 1 billion people now reside in slums or other forms of informal settlements globally, with over 50% of Africans suffering from COVID-19. Despite the fact that UN Habitat (2016) report is founded on secondary data dependent policy papers which rarely adopt research methodologies like the one adopted for the current study, it can be argued that despite the fact that several methods have been developed and treaties adopted to provide affordable housing in urban dwellings in Africa, little is being achieved with evidence of affordable house shortages in countries like Kenya ranging from 200,000 to 450,000 annually. This therefore leaves one to wonder whether these adopted strategies are missing a link which has made the implementation of these affordable projects a dream; a need for the current study.

Kenya is experiencing acute housing shortages and poor housing conditions (UN-Habitat, 2019). This has left a gap that needs to be addressed by finding out some of the issues behind this acute shortage of affordable houses in Kenya. It is worth noting that since Kenya's independence, the attempt has been to build homes via public programs in an effort to sustainably solve thi developmental gap. but still a majority of the house construction projects failed to see the light of day; making this field an interesting area of study. According to the World Bank (2020), Kenya currently has a housing shortage of 200,000 units annually and a production rate of 50,000 units annually. This means that despite the various efforts by the government to implement affordable houses for the disadvantaged Kenya, achievement rates are very low; calling for studies that

address the factors behind such low rates of implementation with poor projects management being proposed as a key factor.

Several research studies in Kenya recognized the important role project management plays in ensuring that construction housing projects are delivered. Emoyo and Kising'u (2019) investigated the impact of projects planning and implementation techniques on the execution of housing projects using the Kenya Property Developer's Association. Despite the fact that the study found out that project management affects housing projects construction, the study was unable to demonstrate how much each project variable affected the other management affects the construction of these housing projects. Further, the study used qualitative data which normally fails to give the statistical trend of associated variables.

Ismail and Nyang'au (2020) examined the Isiolo County public housing construction projects were impacted by project limitations, and it was discovered that better resource management, practices had the biggest impacts. This study however failed to outline project management practices similar to those outlined in the current study in addition to using a cross sectional study design, which doesn't give individual relationship of variables in a linear study. In addition, Kimani and Karugu (2020) examined the approaches and the implementation of housing in Nairobi City County and found that the use of contemporary construction techniques, creative housing financing, and collaborative approaches have impact on the government's delivery of affordable housing. This study however didn't anchor its research on any known theory of project management in addition to using qualitative data, which is normally biased at the point of analysis. It is further worth noting that from aforementioned studies, it is evident that there is no single study that has examined the project management techniques' impact on the implementation of affordable housing projects in Mombasa County.

1.3 The Purpose of the Study

This study's purpose was to investigate practices in project management and their influence the implementation of affordable housing projects in Mombasa County, Kenya.

1.4 Objectives of the Study

This study was guided by the following objective:

i. To establish the influence of stakeholders' participation practice in the implementation of Affordable Housing Projects in Kenya.
ii. To determine the extent to which cost management practice influences the implementation of Affordable Housing Projects in Kenya
iii. To examine the extent to which project scheduling practice influences the implementation of Affordable Housing Projects in Kenya
iv. To assess the extent to which risk management practice influences the implementation of Affordable Housing Projects in Kenya.

1.5 Research Questions

This study was guided by the following research questions :

i. What is the influence of stakeholders' participation practice in the implementation of Affordable Housing Projects in Kenya?
ii. What is the extent to which cost management practice influences the implementation of Affordable Housing Projects in Kenya?
iii. What is the extent to which project scheduling practice influences the implementation of Affordable Housing Projects in Kenya?
iv. What is the extent to which risk management practice influences the implementation of Affordable Housing Projects in Kenya?

1.6 Research Hypothesis

The research tested the following hypotheses at 95% significance level:

Hypothesis one:

H_0: stakeholders' participation practice doesn't have a significant influence on the implementation of affordable housing projects in Kenya.

H_A: stakeholders' participation practice has a significant influence on the implementation of affordable housing projects in Kenya.

Hypothesis two:

H_0: cost management practice doesn't influence the implementation of affordable housing projects in Kenya.

H_A: cost management practice influences the implementation of affordable housing projects in Kenya.

Hypothesis three:

H_0: project scheduling practice doesn't have a significant influence on the implementation of Affordable Housing Projects in Kenya.

H_A: project scheduling practice has a significant influence on the implementation of affordable housing projects in Kenya.

Hypothesis four:

H_0: risk management practice doesn't influence the implementation of affordable housing projects in Kenya.

H_A: risk management practice influences the implementation of affordable housing projects in Kenya significantly.

1.7 Significance of the Study

The findings shall be useful to policy makers cutting across the national government, county governments, and international bodies like UN-Habitat, NGOs, Foundations and pro-poor movements. These policy makers shall get firsthand information in relation to the various practices that have been having an impact on performance and bigger construction project implementation in the all-round sphere. This information shall be used by these policy makers to come up with necessary mitigation measures to challenges outlined, to come up with policies and strategies to help complete affordable houses and better the lives of the citizens. Secondly, it is hoped that the research findings will be used by the study findings shall bring in new theories and methodologies that can be used to study and analyses housing projects construction and the net effect be replicated elsewhere. Researchers and academics will benefit greatly from the study's findings in adding to knowledge, resources, and the academic information already available. They will also call for more study in the relevant domains as well as the original one. These findings will set the reference point

to housing projects locally and globally because the issue of soaring numbers of people across the globe without access to affordable housing is dehumanizing.

1.8 Delimitation of the Study

This study will define itself by collecting the primary data simply through a questionnaire to collect only quantitative information. The development of the research instrument and an evaluation of the literature were the study's sole four objectives. The study delimited itself by considering the scope of study to the housing projects implemented under the Buxton housing plan in Mombasa and those that had the finances allocated from the National Government under the Big 4 Agenda. The project engineers, the contractors and sub-contractors, the project managers, and the financial managers were the only category of respondents who were considered.

1.9 Limitation of the Study

The study had trouble getting access to the respondents (project managers, engineers, contractors) during the data collection period during the campaign and political period. To be specific, thus study area (Buxton Housing project) was purely political and the major contractor was a politician eyeing an elective position in the County Government of Mombasa. Therefore, this made some of the respondents feel that their responses could be used for either political mileage or political downfall and could aim at exaggerating the project's achievement. To handle this, the information would be kept as confidential as possible with no possibility at whatsoever to share the identity of the respondents. The study shall also be faced with a challenge of limited financial resources. With the economic crisis being brought out by the Covid-19 pandemic, the finances of most workers are strained. The study however shall source finances through the banking loaning policy and borrowing from friends.

1.10 Assumption of the Study

The following presumptions persisted during the study period in opposition to the reason they were raised. The study was further conducted under the assumption that the respondents would cooperate, allowing it to provide a clear picture of the situation regarding the implementation of

affordable housing projects and the role that project management has played in this process. The study was further conducted with the presumption that the findings could be applicable to all house construction projects in Kenya and elsewhere, and may be used to post comparable studies, becoming a reference guide for subsequent research.

1.11 Definition of Significant Terms

Cost Management: In this study, the management of labor costs, material costs, cost estimating, and material transport costs were all carefully considered while using project funds.

Project Scheduling: This is planning for project activities and ensuring that timelines for implementation of the project milestones are met as outlined in the timeline of delivery. Activities in the current study include: Work breakdown structures; Sequencing of activities and tasks; Defining activities; and Estimating activity duration

Risk Management: The process of identifying, assessing and recommending solutions to risks of a project life. Finding possible hazards to the project and figuring out how to handle them should they materialize are both steps in the planning process.

Stakeholders' Participation: In this study it includes: types of stakeholders considered in a project's lifecycle; levels and frequency of stakeholders involvement; proper communication with stakeholders; and stakeholders conflict management.

1.12 Organization of the Study

Context of the study, its problem statement, the study's goal and objectives, its research questions, its hypotheses, and its underlying assumptions are all included in chapter one. Additionally, the study's restrictions, boundaries, and key terminology have been listed. The study has outlined the literature review in chapter two. The concept of project management practices has been outlined, literature reviewed in relation to the four outlined objectives, the theoretical framework has been outlined and the conceptual framework. The literature gaps have also been outlined plus the summary of the literature. The research approach used to gather and analyze data is presented in Chapter three. This includes, but is not limited to, the sampling procedures, data sources and types,

data collection methods, material analysis, and presentation. The analysis and data interpretation are covered in the fourth chapter and conclusions drawn are covered in the fifth chapter.

CHAPTER TWO:
LITERATURE REVIEW

2.1 Introduction

In Chapter two, recorded literal work is thoroughly discussed how project management techniques affect implementation of affordable housing projects. The idea of project management practices, the documented literature related to project management practices and project execution, the theoretical framework, and the conceptual framework will all be covered in this section. Along with a synopsis of the literature, the gaps in the literature have also been identified.

2.2 Implementation of Affordable Housing

Project implementation includes the process through which "inputs" are turned to "outputs." Implementing affordable housing initiatives can be viewed as: Carrying out the project's activities. The group that planned the project and got funds for it is typically the one that implements it. Co-operating agencies are other organizations that assist in the implementation of the project through collaboration, such as by establishing positive working relationships, providing technical assistance, or devoting a portion of their employees to the project (Frontier, 2019).

Through physical, social, or symbolic characteristics, quality environment portrays a sense of well-being and satisfaction to its residents. It is the finest markers of standards of living and standing in society, according to (Oduwaye, 2018). It serves as a status symbol, a gauge of his success and acceptance by society. Businesses everywhere aim to include a housing component in their consolidated pay since the need for housing is so important packages, housing, or assistance initiatives that enable their staff to find high-quality housing on reasonable terms (Agus, 2020).

The government can intervene in the housing market in a variety of ways (Zhang and Wong, 2019). The most important types of provision are direct, typical options. The most typical is regulation. In order to control the behavior of private businesses and individuals and produce the social outcomes that are desired, regulations involve the direct control or prohibition of particular behaviors as well as the use of incentives and disincentives in the form of taxes, subsidies, and other policies. National housing policy identifies a shortage of money as a major barrier to home

construction. There are few sources of financing for housing that have not effectively reached some target populations. The development of the housing sector has been hampered by inadequate policies and resource mobilization.

2.3 Stakeholders' Participation and the Implementation of Affordable Housing Projects

Early engagement, according to Aapaoja, Haapasalo, and Söderström (2019), makes opportunity for innovative solutions and a vigorous exchange of ideas. As a result, it culminates to phased procedures, which transform the project's value production into holistic value co-creation. According to Nelson (2017), poor stakeholder management is one of the main reasons projects fail, and the use of communication planning, setting up a project management office, and portfolio management are considered some of the best practices in this area. Stakeholders' participation in project management best practices is viewed as stakeholders' management. The methodical selection, examination, preparation, and execution of measures intended to interact with stakeholders. Viably, stakeholder involvement enables project leaders to foster conditions that result in successful stakeholder participation in the project, allowing them to profit from stakeholder involvement in terms of securing resources and harnessing their influence. (Purvis, 2019).

The engagement of all stakeholders, as well as the abilities inherent in a team, is a critical variable, according to Wixom et al (2019). Stakeholders should be allocated roles to enable effective implementation in order to guarantee good communication. It is also critical for team members to have the appropriate set of abilities. Proper and ongoing communication throughout the project requires keeping stakeholders aware of the project's progress, modifications, and goals. This provides stakeholders with a timely opportunity to provide feedback on major project concerns.

It is critical to ensure that the stakeholders recognize the significance of the project and offer the necessary support for its realization (Hyer and Brown, 2019). According to Meredith and Mantel (2019), it is critical that all stakeholders participating in a project are kept up to date on project reporting based on their level of engagement. From project idea until project completion, this

should be an ongoing activity. The project contract agreements should be studied in good time to ensure a clear knowledge of the project's goals, activities, and setbacks.

A case study of public housing in Malaysia, was used in a research by Latiff, Jaapar, and Isa, (2020) on project governance procedures in urban public housing projects. Projek Perumahan Rakyat (PPR), a public housing project in Kuala Lumpur, was the subject of a single case study. Six (6) public officials participated in semi-structured interviews, document analysis, and observation to gather the data for this study. The study's conclusions show that trust, stakeholder management, and collaborative decision-making help the project's actors cooperate well, adding value to the endeavor. This study has thus confirmed that stakeholders' management creates value in the construction sector, which can be measured by quality of projects, timely delivery and cost effectiveness. However, the study has failed to anchor its findings on a given theoretical underpinning, the study took a handful respondents for an interview, the project considered is a single case which is funded by private for business developers, the data is purely qualitative which misses the extent of influence of the various stakeholders' management indicators on the project's performance.

In Africa, although there is a higher percentage failure and delay in completion of housing construction projects, a number of researchers have confirmed that project management practices like stakeholders' managers are to blame. Ewurum (2019) concentrated on stakeholder management strategy for sustainable public housing delivery. Focus group talks and an expert survey were used in the exploratory study to collect data from primary sources. This study however was exploratory in nature, which is at times biased in establishing relationships where other multiple factors affect the performance of the dependent variable. Further, the study hasn't relied on any given theory of project management, stakeholder's management or construction projects implementation.

Neema and Nicholas (2018) are in agreement that stakeholders form a crucial component of housing projects implementation under the PPP. This study that was a desktop in nature and relied

on the information documented in relation to principals of PPP in the government housing projects in Tanzania and the role played by project management practices in their sustainability found out that stakeholders' management plays a moderate role. In the relation to stakeholders' identification and communication, a higher score was confirmed; a moderate score was achieved for stakeholders' conflicts resolution etc. The Project Management Institute identified the following ten key concepts and PMBOK domains, which were covered in the study. Despite the finding that project stakeholders' management influences the PPP housing projects sustainability, its influence in the current study was shallowly focused on; leaving a gap that is to be addressed by the current study.

Emoyo and Kising'u (2019) while zeroing in on the Kenya Property Development Association examined the project management practices affecting the development projects implementation. The Project Management Institute identified the following ten key concepts and PMBOK domains, which were covered in the study. Despite the fact that this study sampled its' respondents from a private sector that is aimed at making profits and has a defined financing structure (mortgage) and hast relied on modern theories of construction projects implementation, it has given a solid foundation of various indicators of stakeholders' management that can be adopted for the current study. Elsewhere, Mwinzi and Moronge (2018) found out that the various factors associated with stakeholders' management like stakeholders Engagement initiatives, stakeholders' sense of Ownership, and stakeholders' Problem solving influences the completion of housing projects as indicated by completion of time taken for projects completion, finishing within budgets and finishing within the scope. This study however was not informed by any theory that touches on stakeholders' involvement/management in any construction project setting.

In Nairobi, Kenya, KeNHA, Nyandika and Ngugi (2019) established the impact of stakeholder involvement on the execution of projects. According to the report, the outcomes of road projects are determined by project contacts, feasibility studies, seminars, and conferences. The study concentrated on road projects, but current research examines the impact of stakeholder involvement on the success of the affordable housing project in Mombasa. In Bondo sub-county,

Siay, Mandala (2018) demonstrated a considerable influence of project implementation by stakeholders on the construction activities in the Bondo Sub County. In this study, a cross-sectional survey design and descriptive research approach were both used. The current study used a descriptive research design.

2.4 Cost Management and the Implementation of Affordable Housing Projects

Resource planning is a step in the cost estimation process that takes into account the possibility of scope changes affecting project tasks and activities, which might result in additional expenses for work that has already begun or has not yet been finished. All of these procedures demand effort and familiarity with project costing. One person may be needed to complete the criteria depending on how difficult the project is, and they may need to be completed more than once (Khwasira, Wambugu & Wanyoike, 2019).

Rugenyi (2019) contends that knowledge domain of cost estimation makes sure the projects stay true to the agreed budget (cost). Although the costs of resources are the focus of this subject area, project managers should also consider other expenditures. Budgeting for project costs can range greatly in complexity. This strategy, often known as "life cycle costing," can lower project costs and raise the caliber of the final product. However, project management should also consider what the project's stakeholders believe about the project's cost. Like examining a brick from a different perspective, they will estimate cost in various ways and at different times. (Muriithi, Makokha & Otieno, 2017).

According to Streimikiene (2020), the time versus cost dynamics of a building project are something that insurance companies, plan owners, contractors, subcontractors, bankers, engineers, and all other stakeholders are interested in. Rojas, (2009) cited in Streimikiene (2020) had seen that effective management and administration of a contract were necessary to prevent project cost overruns and schedule delays. From the global perspective, Golubchiko and Badyina (2019) did a report on sustainable housing projects under the UN-Habitat research agency. The study collected information from various agencies mandated to document the state of housing projects in developing countries by UN-Habitat. The study indicated that there is a massive failure of housing

projects in developing countries in Asia, South America and Africa. Among the determinants of these massive failure of projects is the poor cost management process. For example, the concept of inflation was never considered in initial contractual processes and hedging done in many housing projects which left the final projects being delivered at higher costs against the initial budgets due to increases prices of materials, labour, taxation and compliance costs, changes in levies etc. This study hasn't singled out on specific housing projects not forgetting that there are several players in the housing sector with others aiming at making no proportionate profits through charging exorbitant prices.

Several studies have confirmed that across Africa, cost is among the key determinants of housing projects implementation (AfDB, 2021; United Nations Economic Commission for Europe, 2021; Melton, 2018). In a study conducted in 10 African countries with Nigeria, South Africa and Zambia topping the list, AfDB (2021) pointed out that costs associated with projects go beyond those incurred in the acquisition of materials necessary for their completion. For example, labor costs can add significantly to project costs, hence time estimations should be used to predict variable costs like labor. The report thus emphasized the significance of cost accounting in taking other expenditures, such as those for materials and equipment needed for the project, into consideration. Cost accounting deals with estimating, allocating, recording, and controlling expenses during a project. The significance of this procedure was emphasized by Kihoro and Waiganjo (2018) and Melton (2018), who claimed that the success of a project, depends on how much attention is paid to costs related to its scope.

Muigai (2019) avers that project cost management is the highest rating project management practice that determines the rate of projects completion in the construction industry. The study aimed to identify best practices in project management that may have an impact on road building projects. The researchers used a descriptive and explanatory research methodologies coupled with a survey. By delivering questionnaires to obtain primary data, 70 respondents, they discovered a link between the successful implementation of building projects on roads relied on best practices. It revealed that cost management methods had an impact on project completion time, as evidenced

by a variety of variables such as budget allocation, defined work plans, and timely approval and payment.

In Kenya's Lake Basin Region, Ochenge (2018) conducted a research to investigate how different project management techniques impacted the success of road infrastructure projects. The study's findings showed that risk management on projects, resource organisation, teams management and project cost management, project monitoring and assessments had impact on performance of infrastructure projects. However, it failed to anchor its findings to a meaningful construction projects management theory in addition to failing on establishing the various components that add up to project cost management that influence the implementation of these projects. Further, the study picked on road construction projects that are very different from the affordable housing projects.

Kimtai (2019) and found out that among other aspects of project management like project planning and resources administration, cost management rank highest in determining the implementation and completion of residential construction projects. The study also discovered that gated community residential building projects continue to perform poorly despite the devoted efforts made to improve project performance. It came to the conclusion that project performance required planning, cost management, project communication, resource allocation, and M&E. This study however did not use primary data and relied on secondary documented data that at times is biased and manipulated to suit the investors' demands. Further, no known theory of modern project management in the construction industry was used in this study.

Onderi, Yusuf, and Iravo (2020) did a research on Project Management Triple Constraints and the Performance of Kenya's Affordable Housing Program. The study's specific goal was to investigate project resource management and the moderating impact of community engagement affect affordable housing initiatives with a sample of 24,000 social housing project units as the target population. Using a basic random selection approach, a sample of 393 social housing project units from the target demographic was chosen. The study discovered that project scope management

and project cost management had a substantial impact on the effectiveness of Kenya's affordable housing program. Project Cost Management in the study was found to affect various factors of suppliers, the materials and transport issues.

2.5 Project Scheduling and the Implementation of Affordable Housing Projects

The project schedule, according to Bernstein et al. (2019), is a tool that conveys what work needs to be done, which organization resources will do the job, and when that work needs to be done. The project timely completion is detailed in the project schedule. Lack of proper planning inhibits the implementers success and accountability of the financial and other resources allocated.

According to NAHB (National Association of Home Builders, 2019), the project schedule is very important in construction projects since It is a project roadmap for tasks and milestones that is updated as the project progresses and is based on the data provided by the individuals carrying out the tasks. Project planning avoids implementation delays brought on by arbitrary deadlines set by outside parties, changing customer demands that are not reflected in the schedule, and occasionally a sincere underestimation of the effort and/or resources needed. Additionally, risks that were not taken into account during the project, technical challenges that were unforeseeable, and any other human challenges that were unforeseeable could all result in delays (Bhatti, 2019).

Yang and Ou (2018) used SEM to examine the connections between the major reasons why building projects are delayed. The study found that there are a lot of reasons that might cause delays, with unexpected site conditions and project timing being two of the most significant. Ling et al. (2018) created a model based on the project management techniques used by Chinese construction businesses to predict project performance in China. The study's findings demonstrated that some project management techniques, such as schedule management, can forecast how well a project will perform in terms of the "iron triangle"—customer satisfaction, profit margin, and efficiency. Five of the 15 hypothese that were employed in the study were validated, while 10 were rejected. Top among the 10 factors, which established a strong relationship were project scope, project schedule, project resources and project communication management. These studies

however were exploratory in nature relying on secondary documented data. The current study shall be descriptive and shall use primary data only.

Clear goals, managerial support, correctly specified project timetables, control mechanisms, and effective communication are among the factors that consistently emerge in surveys on why construction projects succeed (Rozenes, Spraggett & Vitner, 2019). Across Africa, studies conducted in Nigeria, South Africa, Malawi, Niger, Ethiopia, Rwanda, Sudan and Kenya have shown that schedule management influences the implementation of projects in any given sector of the economy. Two separate comparative studies conducted in India and Kenya by Slum (2020) and Tariq et al. (2020) has confirmed that project scheduling influences the completion rates of affordable housing projects more specifically in the slum areas. Even though Slum (2020) and Tariq et al. (2020) have given a number of indicators that may guide the current study in relation to schedule management in projects, their data just came from the documented desktop data type which shall be underscored by the primary data in this study. The study although conducted in the road construction industry, it has given insight of schedule management.

Baraza (2019) conducted research on the effects of planned projects in handling several projects. The results showed that a schedule-driven project management approach might significantly increase the capacity of execution in a sustainable schedule project milestones and lead to noticeable success. Although acquiring resources guarantees timely delivery of the "business-critical" project, the project's timeline is negatively impacted by a lack of human resource ability to perform. The staff's productivity is also impacted by the frequent project switching as more projects are switched between. The study's findings underlined the need for periodic project performance evaluations, project adjustments during implementation, and occasional budget monitoring to compare spending to project budgets. Resource scheduling had an impact on project performance since it made sure that the project was functioning within budget, that adjustments were made to accommodate the projects' dynamic character, and that the employees had what they required for the work.

Ochieng and Nyang'au (2021), interrogation of project planning on implementation of infrastructure improvements in Nairobi public hospitals. Before every project begins, activities must be defined; sequencing of activities; activity length; activity resource estimation; and regulating timetables, among other factors, all have an impact on project execution. This suggests that the implementation of public hospitals in Nairobi City County, Kenya is influenced by project scheduling. The study findings align with Halpin's (2019) conclusions that the fundamental goal of scheduling is to provide time tables for individual tasks that follow the plan. Project Scheduling can be measured by looking at defined activities, estimating activity duration, sequencing activities & tasks etc.

2.6 Risk Management and the Implementation of Affordable Housing Projects

There are formal and informal ways to risk management (Hudin and Hamid, 2019). Regardless of the strategy used, risk management implementation entails proactive planning and successful implementation of such plans, with proper monitoring to guarantee achievement of the desired objectives. Risk management use in management of risks that have the potential to effect project objectives is referred to as risk management implementation (Hudin and Hamid, 2019). Effective risk management increases business performance avoids frequent construction project difficulties such as time and cost overruns, unacceptable project quality, and dangerous working conditions, and improves the quality and confidence of investment decisions (Siang and Ali, 2018).

Construction risk management strategies have generally been found to be dynamic and consistent throughout the life cycle of a project (Chan et al., 2019; Nieto-Morote & Ruz-Vila, 2019). A risk management practice, according to Mark, Cohen, and Glen (2019), is the ability of issues and barriers in regard to project outcomes and the fulfillment of objective. As a result, unmanaged risks pose a danger to project completion. It has been demonstrated that failing to appropriately manage risks causes cost and time overruns in building projects (Andi, 2020). It is hard to remove all dangers in building projects. However, it is widely acknowledged that a risk may be properly managed to reduce its negative implications on project objectives, even though it is unavoidable in all project endeavors.

Wanyona (2019) relates project finance risks to cost consultants' inefficient cost planning and supervision of construction projects. As a result, understanding the degree of possible risk may help managers devise efficient and effective risk-management procedures to improve project completion success. As a result, risk identification is a method of researching problematic regions for programs in order to identify the related risk. In order to prevent project failures, project managers may use brainstorming at this stage to compile a list of issues that may obstruct project success. (Hillson & Murray-Webster, 2018). The authors recommend using the Risk Breakdown Structure (RBS), which aids in the compilation of checklists of potential hazards and the implementation of methods to limit losses, as described by Edwards and Bowen (2019).

Adams (2019) contends the issue of process identification as continuous with the identification and acceptance of appraisal of hazards, which might jeopardize outcomes expected. Skorupka (2017) states that approach such as checklists, brainstorming sessions, prior evaluation of records connected to comparable projects, acquiring past information through questionnaires and interview guides, and SWOT analysis can help to simplify identification procedures and increase project success. According to Turnbough (2019), risk identification, when done effectively, improves risk management and hence project success. In 2019, Pourrostam and Ismail performed research on the dangers and effects of unnecessary project implementation delays in Iran. The study found a statistical correlation between project success and an effective risk identification process, whereas Cruz, Cano, and Cruz's (2020) study found that, as long as processes are immediately established, a lack of a project risk identification process negatively affects project success.

Risk assessment is another component of risk management which influences the performance of projects in any given sphere of projects implementation as measured by many indicators among them being cost, quality, and time of delivery and exceeding stakeholders' expectations. According to Schatteman, Herroelean, Vandvonder, and Boone (2012), once every potential risk has been identified, a qualitative risk assessment should come first. This requires a thorough evaluation by

way of calculating the likelihood of each risk occurring as well as its impact. This stage calls for identifying a number of difficulties, such as the timing of the occurrence of recognized risks, to ensure the project's success (Baker, Murphy & Fisher, 2019).

Risk response has been identified as another level of risk management in projects and is described as the process of developing options and putting in place mitigations that might enhance possibilities and subsequently lessen dangers to projects' success (Berkeley, Humphreys, & Thomas, 2019). Aubry (2021) claims that research shows that the risk response phase is unquestionably the greatest risk management. Such action is essential since it determines the course the project takes and whether it will succeed or fail. In conclusion, Omulo (2019) adds that project risk mitigation, project risk avoidance, projects risks acceptance and project risks transference add up to project risk response stage which has a significant influence on projects implementation.

In a comparative study carried on California and Kenya focusing on affordable government houses, Nzau (2018) found out that projects risk management is a crucial part in projects implementation; although overlooked in Kenya. Among the areas of risk management include: identification, assessment, response and evaluation of risks. Regarding risk assessment, actions such as making informed decisions, adjusting plans and making estimations to counter the risk, and routine monitoring to control foreseeable risks, among others, can be employed.

Anyango (2019) found that identification, assessment, response and evaluation of risks processes had positive relationship with the success of KP projects. The analysis found that while KP used identification, assessment, response and evaluation of risks methods, project failures were nevertheless visible. It was suggested that the KP project team should have the resources necessary to predict when risks will arise and that all project team members should receive frequent, focused risk management training and that the company should regularly and timely evaluate project risks to promote projects’ success rates. Although this study adopted exploratory technique as opposed

to the current one that shall adopt the descriptive research design, it has given a solid background of variables that can be used to measure risk management.

2.7 Theoretical Framework

The study was anchored on Project Management Competency Theory and supported by two theories including: Uncertain Theory and the Theory of Project Implementation.

2.7.1 Project Management Competency Theory

The competency hypothesis was formed by the work of McClelland & McBer, 1980s. Authors claim that proficiency is the fundamental quality of a person connected to effective outstanding performance measured against criteria in a position or circumstance. Since then, various project management institutes have created a number of competency frameworks. Crawford (as cited in Boyatzis, 1982, and Spencer, 1993) suggests a model of competence that combines essential personality traits with knowledge, skills, and demonstrated performance, acknowledging that the latter are challenging to learn and assess through training. She argues that two of the most well-known project management standards, the PMBOK, only address the knowledge portion of competence while a third standard, Australia's National Competency Standards, also relies on knowledge but only places emphasis on verifiable performance. Crawford's (2010) posits that research, project managers "may not necessarily have the needed competence or conduct the entire activities required to promote and implement the changes that they are leading as part of their projects."

The interest in project management competency stems from the logical and widely accepted belief that successful projects and organizations arise from competent project managers and project workers. (Beer, 1990; Smith, 1976). On the other hand, competence is often regarded as including knowledge, skills, attitudes, and behaviors that are directly linked to higher work performance. Crawford (as referenced in Boyatzis, 1982 & Spencer, 1993) noted that professional competence in project management is accomplished by a mix of information gained through training and its subsequent application, as well as other abilities gained through work experience.

Past management studies examined how competence affects performance. For construction project managers, Dainty (2004) argued that a total of nine performance indicators for PM competency have been generated after an evaluation of management behavior input. This theory therefore shall be used to guide stakeholders' participation practice, cost management practice, and project scheduling practice, risk management practice and implementation of affordable housing projects in the current study.

2.7.2 Uncertainty Theory

Due to the generalization of the domain of uncertainty, Liu (2010) established the concept of uncertainty. Li and Liu (2010) used uncertainty theory to apply uncertain logic, where the truth-value is defined as the uncertain measure that the statement is true. In addition, Liu created the concept of uncertain entailment, which is a way for determining the truth-value of an uncertain formula given the truth-values of other uncertain formulae. Project management does, of course, still use the concept of uncertainty. The possibility of task length variation was acknowledged during the early stages of the development of activity network approaches in the 1950s, such as the Program Evaluation and Review Technique (PERT). In the 1960s, these methods were expanded to incorporate probabilistic branching, such as the Graphical Evaluation and Review Technique. In order to help project managers plan for uncertainty, qualitative methodologies like the Synergistic Contingency Evaluation and Review Technique and Analysis of Potential Problems were created (Henriksen & Uhlenfeldt, 2010).

This thorough body of project planning literature, which describes well-known methods like the critical path method, has advanced our understanding of job scheduling in difficult and unpredictable projects (CPM). There is also substantial knowledge of how to manage relationships with stakeholders using methods like force field analysis, responsibility charts, contract formalization and enforcement, and conflict management. Uncertain but identified influences in project management are anticipated uncertainties. The way that project management should take to stakeholder management is also impacted by uncertainty risk. One of the project teams in this study's samples enjoyed using the phrase "proactively occupy the white spaces in the contract."

This meant that by proactively writing in the contingencies reflecting these uncertainties, they could forge ahead and stake out a claim before other parties had done so. The identification of possible risks that might harm the project, the preparation of preventative measures to block unfavorable occurrences, and several contingent courses of action that are subsequently activated by the events are all necessary due to the predicted unpredictability. (Young & Jordan, 2012).

Monitoring progress necessitates keeping an eye on both the project's accomplished tasks and its unfinished ones. The project manager must function as a proactive consolidator of what has been completed up to a certain point in the project in addition to troubleshooting. Project stakeholders must be kept fully informed of any hazards, environmental issues, or specific project work results. In the decision tree, flexible contingent actions that depend on the results of important influence parameters should be predicted (Zwikael & Ahn, 2011). According to this view, all risks result from unknowns that are anticipated during the execution of a project. Therefore, the theory supports project scheduling, cost management, and risk reduction for the construction project related to design, legal, contract, and actual project implementation.

2.7.3 Theory of Project Implementation

In the middle of the 1990s, Fugate and Knapp had mastered the theory of project implementation. According to Fugate and Knapp (1996), the single most crucial characteristic separating a profession from a craft is an excessive focus on theoretical factors. According to Koskela and Howell (2002), the theory as it is now applied is based on a limited and implicit theory that explains other project management issues such frequent project failures, a lack of commitment to project management practices, and a sluggish rate of methodological renewal. Therefore, the most significant and important issue for the future of the project management profession is a clear theory.

Implementation is a series of actions planned by accountable organizational actors to elicit the cooperation required to install changes (Nutt, 1996). Managers use this theory to bring about deliberate changes and planning of organizations by developing settings where those changes may

endure and take root. However, because project implementation is universal, it has been challenging to define the specific stages involved. According to project implementation philosophy, implementation must be successful (Slevin and Pinto, 1987). This theory is pertinent to the study since it will be utilized to guide the dependent variable, as well as the four independent variables (stakeholder participation, cost management, project scheduling, and risk management) (implementation of housing projects).

2.8 Conceptual Framework

When conducting a study, a conceptual framework should be created, according to Chepkwei (2019), to demonstrate the relationship between the independent factors and the dependent variables.

Figure 1 below shows the relationship between the independent and dependent variables that interact to show the extent to which project management practices influence the implementation of affordable housing projects.

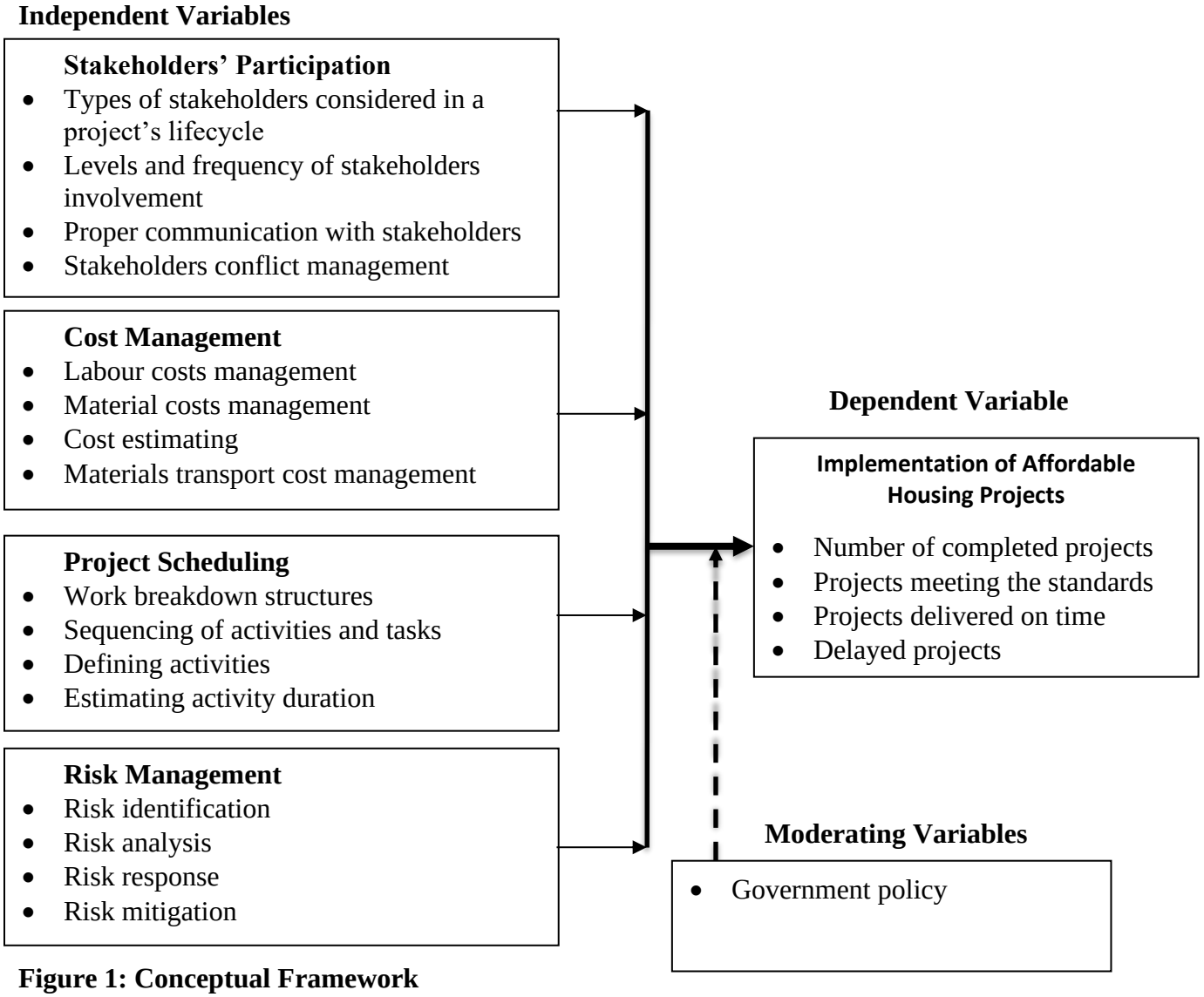

Figure 1: Conceptual Framework

2.9 Summary of the Chapter

Chapter two has basically outlined the documented information in relation to project management practices and their large influence on the implementation of affordable housing projects from the global, continental, regional and local levels. The concept of affordable housing projects implementation has been reviewed. The various variables that influence the implementation of affordable projects, the three theories guiding the study and the conceptual framework have been outlined. Finally, the research gaps table has been included.

2.10 Research Gaps

Table 2.1 has outlined the literature reviewed in a nutshell and has outlined the gaps that haven't been addressed. It has also outlined the ways through which these gaps shall be addressed.

Table 2. 1 Research Gaps

Author	**Study area**	**Findings**	**Gaps**	**How the gaps shall be addressed**
Pinto & Dominguez (2018)	Project management practices	The most crucial project management practices are thought to be project scope management and project procurement management, whereas project risk management and project integration management are thought to be the least crucial.	Failed to outline the various indicators that add up to project management practice variables No specific theory of construction projects guided the study	Four project management practices were examined in detail with the relevant indicators of measure being outlined. Three project management theories were used to inform the study
Latiff, Jaapar and Isa (2020)	Stakeholders' management	Stakeholders' management creates value in the construction sector which can be measured by quality of	The study has failed to anchor its findings on a given theoretical underpinning, the study took	The study was anchored on three project management theories, the study population included all the individuals

		projects, timely delivery and cost effectiveness	a handful respondents for an interview, the project considered is a single case which is funded by private for business developers, the data is purely qualitative which misses the extent of influence of the various stakeholders' management indicators on the project's performance	involved in housing projects implementation, the qualitative and quantitative data was collected, all the indicators of stakeholder's involvement and management were considered
Ochenge (2018)	Cost management	The study emphasizes the significance of project management methods for project performance, particularly project resource mobilization, cost management, group dynamics management, and M&E.	This study failed to anchor its findings to a meaningful construction projects management theory in addition to failing on establishing the various components that add up to project cost management that influence the implementation of these projects. The study picked on road construction projects that are very different from the affordable housing projects	The current study was anchored to three key theories of project management and all the variables making up the four variables of project management practices were examined in detail. The study took a case study of housing project in Mombasa county that is funded by the national government and other agencies for community empowerment that were very different from the road projects.
Chen et al. (2019)	Project scheduling	Top among the 10 factors which established a strong relationship with projects	The study was exploratory in nature relying on secondary documented data.	The current study was descriptive and shall use primary data only.

		implementation were project scope, project schedule, project resources and project communication management.	Further, no specific housing projects addressed. The study was carried out in China which has a very different socio-economic environment	The study was carried out considering affordable housing projects in Mombasa county.
Anyango (2019)	Risk management	The study found out that risk identification, risk assessment, risk response and risk evaluation processes had positive relationship with the success of KP projects.	The study just employed exploratory research design that at times is biased	The current study used purely primary data collected by use of descriptive research design

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

The strategy for gathering and analyzing data is described in this chapter. The research design, target population, sample size, and sampling technique are all covered in detail in this chapter. Additionally covered in this chapter are data collection techniques, instrument reliability and validity, data processing techniques, ethical considerations, and operational definitions of variables.

3.2 Research Design

In a descriptive survey, a large group of people is contacted by phone, mail, or in person with questions in the form of a questionnaire (Ponto, 2015). The primary advantage of descriptive survey research is its capacity to produce a significant volume of data gathered from a large sample of respondents. This research design found its significance in the creation of affordable housing projects; Ochieng' and Nyang'au (2021), who investigated the impact of project planning on the execution of infrastructure projects at public hospitals in Nairobi County, and Githenya and Ngugi (2019), who examined the factors influencing the execution of housing projects in Kenya, among others.

3.3 Target Population

The 241 respondents in chosen registered Affordable Housing Projects in Buxton linked to government financing and wider property developers in Mombasa County were the research's target demographic. As a result, a total population of 241 comprising of: project managers, project quantity surveyors, tendering committee chairmen, contractors, and other personnel were the research's responders. These respondents were considered since they were the best candidates to answer the questions that came from the study goals owing to the knowledge they possess.

Table 3. 1 Target Population

Category Of Respondent	Target Population (N)	Percentage
Project Managers	31	13%
Project Quantity Surveyors	42	17%
Tendering Committee Chairmen	27	11%
Contractors /sub-contractors	67	28%
Other Personnel (Operations And Contractual Employees)	74	31%
Total	**241**	**100%**

Source Buxton Housing Project Main Contractor Mombasa (2022).

3.4 Sample Size and Sampling Procedure

Due to the study population's vast dispersion throughout Mombasa County, the nature of the housing developments, and vested interests, the researcher was unable to reach all study participants for this project. In order to conduct the study, a sample of the population was chosen. Two types of sampling procedures were applied. First, all the respondents were placed in strata comprising of project managers, project quantity surveyors, tendering committee chairmen, contractors, and other personnel in Mombasa County's Buxton Affordable Housing Projects. Later on, a simple random sampling was applied to selected exact respondents from each stratum. The ideal sampling method, according to Sekaran (2010), is simple random sampling when every participant must be given an equal chance to participate in the study. The sample size was established using the Yamane formula (Singh, 2014). The error level is 0.05 if you use a 95% confidence interval. Using the Yamane approach, the minimal sample size was determined as follows:

$$n = \frac{N}{1 + N(e)^2}$$

Where: n=the sample size; N=the population size; e=the acceptable sampling error; confidence level (0.05) which adds up to 0.05

Therefore, sample size of 150 respondents was calculated as follows:

$n=241/1+241(0.05)^2$ =150 respondents

Table 3. 2 Sampling Table

Category Of Respondent	Target population (N)	Sample size (N/241 times 150)
Project Managers	31	19
Project Quantity Surveyors	42	26
Tendering Committee Chairmen	27	17
Contractors /sub-contractors	67	42
Other Personnel (Operations And Contractual Employees)	74	46
Total	**241**	**150**

3.5 Research Instruments

A questionnaire was employed by the study to gather primary data. In this study, questionnaires were taken into consideration since they are appropriate for studies because they gather data that is not readily apparent by asking about people's feelings, motives, attitudes, accomplishments, and experiences (Mellenbergh, 2008). There were just closed-ended questions on the survey. According to Saunders (2003), a questionnaire is helpful in gathering objective data because volunteers are not in any way coerced by the study. Questionnaires offer the added benefit of being less expensive and time-consuming as instruments of data gathering, according to Saunders (2003). The questionnaire comprised of two sections i.e. section A which sought to gather the basic background information and section B which was purely the detailed questions in relation to the objectives of the study.

3.5.1 Test of Research Instrument

The research carried out a test-retest on 15 respondents in Mombasa County who did not participate in the final study. The 15 respondents were centered based on the argument by Mugenda and Mugenda (2003) that 10% of the sample size can be used as a pilot study population. The pilot study was repeated after two weeks and the information given was useful in checking on reliability and the validity of the research instrument.

3.5.2 Validity of the Research Instrument

Validity is the ability of a data collection device to measure what it is designed to measure. The validity of an instrument is determined by whether or not it can be used to make meaningful and helpful inferences (Creswell, 2003). The instruments were examined by the supervisor and other research specialists to guarantee content validity. The content validity of an instrument offers a logical judgment as to whether it covers what it is designed to cover. To minimize misunderstandings, content validity guarantees that all respondents interpret the questions on the questionnaire in the same way. For the majority of the questions, response alternatives must be offered to guarantee that the responses produced are in line with the research topics they are supposed to measure.

3.5.3 Reliability of the Research Instrument

The degree to which research instruments produce consistent outcomes is referred to as reliability (Babbie, 2013). In this study, reliability was obtained by integrating numerous related items on a measure and examining a varied group of persons using similar testing techniques. In this study, 15 respondents from the Affordable Housing Project in Mombasa County (not included in the final study) were piloted to examine the dependability of the research tools. Cronbach's Alpha statistics was used to assess the consistency of the study equipment. According to Mugenda (2008), a coefficient of 0.7 is typically recognized as a good sign of dependability, and the research in this study tried to attain a reliability score within the specified range. In the study a mean alpha coefficient for all the four independent variables was 0.85. This means that all the independent

variables (stakeholders' participation practice, cost management practice, project scheduling practice, and risk management practice) influence the implementation of projects.

3.6 Data Collection Procedure

Before obtaining a NACOSTI permit to enable her to gather data in the field. Three research assistants were hired by the researcher to help with data collecting. Questionnaires were issued to the respondents face-to-face. In some instances where the respondents were not available for immediate response, drop and pick later method were used while emails and telephone calls were made in some cases where the respondents were comfortable with it.

3.7 Data Analysis Techniques

Data was cleaned, coded, inputted, and analyzed using the Statistical Package for Social Science (SPSS, Version 25.0). Editing, categorizing, classifying, and tabulating obtained data as part of data processing enabled analysis (Kothari, 2007). The variables and aims of the study were taken into consideration when analyzing the data. Descriptive statistics were used to analyze, visualize, and comprehend data. To construct values between the dependent and independent variables used in the inquiry, descriptive statistics required the use of frequency distribution tables and cross tabulation. Quantitative data were examined using descriptive statistics, such as frequency distribution tables. The study will also employ inferential statistics to determine the link between the dependent and independent variables, including linear regression analysis, coefficient of correlation, and coefficient of determination.

The relationship equation was represented by the linear equation below:

$Y = \alpha + \beta_1 X_1 + \mu$

Y=Implementation of Affordable Housing Projects

α = Constant

μ= Error

β= Coefficient of the independent variables

X_1= Stakeholders' management

X_2= Cost management

X_3= Project scheduling

X_4= Risk management

3.8 Ethical Considerations

While conducting the study, the researcher made sure that research ethics were upheld. The study's participation was completely optional. Confidentiality and privacy were protected. Respondents were informed of the objectives of the study and given the assurance that the data they provided would only be used for academic research.

3.9 Operational Definition of Variables

This section presents a summary of the study by indicating the various objectives, the various independent variables, their indicators, scales of measure and the types of data analysis.

Table 3. 3 Operationalization Definition of Variables

Objective	**Independent Variables**	**Indicators**	**Measurement Scale**	**Types of analysis**
i. To establish the influence of stakeholders' participation in the implementation of Affordable Housing Projects in Kenya.	**Stakeholders' Participation**	• Types of stakeholders considered in a project's lifecycle • Levels and frequency of stakeholders involvement • Proper communication with stakeholders • Stakeholders conflict management	Ordinal Scale (Likert)	Descriptive Statistics

ii. To determine the extent to which cost management influences the implementation of Affordable Housing Projects in Kenya	**Cost Management**	• Labour costs management • Material costs management • Cost estimating • Materials transport cost management	Ordinal Scale (Likert)	Descriptive Statistics
iii. To examine the extent to which project scheduling influences the implementation of Affordable Housing Projects in Kenya	**Project Scheduling**	• Work breakdown structures • Sequencing of activities and tasks • Defining activities • Estimating activity duration	Ordinal Scale	Descriptive Statistics
iv. To assess the extent to which risk management influences the implementation of Affordable Housing Projects in Kenya.	**Risk Management**	• Risk identification • Risk analysis • Risk response • Risk mitigation	Ordinal scale (Likert)	Descriptive Statistics

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATIONS

4.1 Introduction

Descriptive statistics and inferential statistics were used in the study of the questions included in the research instrument after the data was entered into SPSS version 25.0. The analyzed data was displayed using frequency tables and the mean, standard deviation, percentage, and frequency totals were considered. The chapter summarizes the findings and the degrees of acceptance or rejection of the tested hypotheses, which were used to test the study's hypotheses using linear regression analysis.

4.2 Return Rate

Table 4.1 confirms that out of the 150 questionnaires distributed, only 99 were fully filled, returned and became useful in the study.

Table 4. 1 Response Rate

Questionnaire	Frequency	Response Rate
Returned	99	66%
Unreturned	51	34%
Total	**150**	**100%**

Based on Kothari (2014) arguments, a return rate of 50% is always acceptable but when it is more than half, it is good to be used for analysis. The same was used by other researchers including Theuri (2015) and Namusonge (2019) among others in their studies for analysis of various projects implemented in Mombasa County.

4.3 Demographic Information and Respondents Profiles

The section outlines the information in relation to the respondents starting with their gender, level of education, and work experience.

Table 4. 2 Gender of the Respondents

Gender	Description	Frequency	Percentage

	Male	55	55.56%
	Female	44	44.44%
Total	**Male**	**99**	**100%**

Majority of the respondents were male at 55 rate and 55.56% response rate. The female however closely followed at 44.44%. This is in agreement to a report by the Council of Governors (2018) confirming that the tendering process in the government and employment patterns in marginalized counties like West Pokot, Mombasa and Kwale has been achieved to a greater extent.

Table 4. 3 Academic Qualifications

Category	Description	Frequency	Percentage
Highest education	Diploma	15	15.15%
	Bachelor degree	77	77.78%
	Master degree	07	7.07%
	Phd	00	00%
Total		**99**	**100%**

Majority of the respondents had a bachelor degree level of education as communicated in table 4.3 with a percentage score of 77.78%. This is followed by respondents with a diploma education level as indicated by a score of 15.15% while the rest had a master degree as indicated by a mean of 7.07%.

Table 4. 4 Work Experience

Category	Description (years)	Frequency	Percentage
Work Experience	0-5	07	7%
	5-10	21	21.2%
	10-15	36	36.4%
	Above 15	35	35.4%
Total		**99**	**100%**

Table 4.4 indicates that majority of the respondents (36.4%) had over 10-15 years' work experience span period, followed by those who had over 15 years' experience (35.4%), while those of between 0-5 years, and 5-10 years scored 7% and 21.2% respectively. In his study conducted by Odede (2019), he found out that majority of the project managers and implementers charged with the mandate of implementing mega projects have work experience dating above 10 years.

4.4 Respondents' Awareness of Project Management practices

In a separate general question requiring a nominal scale rated response, respondents were asked to indicate whether thy supported the idea of whether they had come across the following practices of project management: stakeholders' participation practice, cost management practice, project scheduling practice, and risk management practice.

Table 4. 5 Awareness Rate about Project Management Practices

Practice	Yes	No
Stakeholders' Participation practice	71.72%	28.28%
Cost Management practice	81.81%	18.18%
Project Scheduling practice	65.6%	34.4%
Risk Management practice	95.96%	4.04%

As indicated in table 4.5 above, risk management practice is the most popular practice among the respondents (95.96%) that affects the performance of the affordable housing project in Mombasa County. This is followed by cost management practice (81.81%), stakeholders' participation practice (71.72%), and project scheduling practice (65.6%). On average, a percentage of 80.12% of those who were aware of the various outlined project management practices (stakeholders participation, cost management, project scheduling, and risk management) argued that these practices have a significant influence on the implementation and general performance of these projects as measured against time, scope, budget, specifications, and stakeholders' expectations.

4.5 Stakeholders' Participation Practice

Respondents were asked various questions in relation to stakeholders' management or involvement and the implementation of the Affordable Housing Project in Mombasa County, Kenya. In all Likert rated scale questions, the interpretation of result values was guided by the recommended scale weights as supported by Musyoka, Gakuu and Ndunge (2017). The three claim that the scoring on a five-point Likert scale would be as follows: strongly agree (SA) 4.2SA5.0; agree (A) 3.4A4.2; neutral (N) 2.6N3.4; disagree (DA) 1.8DA2.6; and severely disagree (SDA) 1.0SDA1.8. Equidistant on the scale is given as 0.8. This weighting factor was used in this study's data analysis of Likert-type data. Nganga (2014) and Namusonge (2014) both utilized the same scale with success (2019). In the questionnaire, the respondents were asked to give their level of support towards the argument that stakeholders' participation practice influences the implementation of Affordable Housing projects in Mombasa County. The scale of rating was: 1= Strongly Disagree (SD) 2= Disagree (D) 3= Average (AV) 4= Agree (A) 5= Strongly Agree (SA). The results were as shown in table 4.6

Table 4. 6 Extent of Stakeholders' Participation

Statement	1	2	3	4	5	Mean	SD
Stakeholders are involved at in this project's lifecycle	4	2	7	33	54	4.33	.958
Stakeholders have been and are still being involved at any step of this housing project since its inception	8	7	17	34	33	3.78	1.217
Levels of stakeholders' involvement in the project correspondents to their immediate influence on project implementation	4	12	16	25	42	3.90	1.199
There has been and still is proper communication with stakeholders in this housing project.	7	4	20	27	41	3.92	1.192

Stakeholders conflict management as being used as one strategy of involving projects in implementing the project	11	6	13	16	53	3.95	1.388

Majority of the respondents strongly agreed that stakeholders are involved in the project life cycle (m=4.33, sd=0.958). Equally, majority of the respondents agreed with the ideas that: stakeholders had been and were still being involved at any step of the affordable housing project since its inception (m=3.78, sd=1.271); levels of stakeholders' involvement in the project correspondents to their immediate influence on project implementation (m=3.9, sd=1.199); there has been and still is proper communication with stakeholders in the housing project (m=3.92, sd=1.192); and, stakeholders' conflict management was being used as one strategy of involving projects in implementing the project (m=3.95, sd=1.388).

4.5.1 Testing the First Hypothesis

Stating the hypothesis:

***H_0**: stakeholders' participation practice doesn't have a significant influence on the implementation of Affordable Housing Projects in Kenya.*

***H_A**: stakeholders' participation practice has a significant influence on the implementation of Affordable Housing Projects in Kenya.*

A linear regression analysis was conducted to establish the relationship between stakeholders' participation practice and the implementation of Affordable Housing Projects in Mombasa, Kenya and the results are follows:

Table 4. 7 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.180[a]	.171	.168	1.162

a. Predictors: (Constant), stakeholders' participation

b. Dependent Variable: implementation of affordable housing project

From the model summary in table 4.7, it is clear that the adjusted R^2 was 0.171 indicating that stakeholders' participation explained 17.1% of the variation in affordable housing project implementation.

Table 4. 8 Analysis of Variance

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.315	1	1.315	2.975	.000[b]
	Residual	130.866	97	1.349		
	Total	**132.182**	**98**			

a. Dependent Variable: implementation of affordable housing project

b. Predictors: (Constant), stakeholders' participation

The overall standard linear regression model (the model that assumes constant, stakeholder participation) is clearly significant in predicting how stakeholders' participation affects the implementation of affordable housing projects in Mombasa County, as shown by the table 4.8

above that has provided the ANOVA calculated values. A strong degree of fit for the regression model is demonstrated by an adjusted R2 of 0.171 (F = 2.975; P = 0.000 0.05).

Table 4. 9 Regression Coefficients

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.143	.453		6.932	.000
	stakeholders' participation	.115	.117	.100	.987	.000

a. Dependent Variable: implementation of affordable housing project

Table 4.9 presents the regression results on how stakeholders' participation determines implementation of affordable housing project in Mombasa County. The linear regression equation was that: $Y= \beta_0+\beta_1X_1 + \varepsilon$ *and* the linear regression equation became:

$Y =3.143 +0.115X_1$. As depicted in table 4.9, there was positive and significant influence of stakeholders' participation on the implementation of affordable housing project ($\beta = 0.100$; $t = 0.987$; $p < 0.05$).

Based on these findings, the null hypothesis was rejected and the positive hypothesis accepted. Therefore, stakeholders' participation practice has a significant influence on the implementation of Affordable Housing Projects in Kenya.

4.6 Cost Management Practice

Respondents were asked various questions in relation to cost management practice and the implementation of the Affordable Housing Project in Mombasa County, Kenya. In all Likert rated scale questions, the interpretation of result values was guided by the recommended scale weights as supported by Musyoka, Gakuu and Ndunge (2017). Table 4.10 displays the outcomes.

Table 4. 10 Cost Management Practice

Statement	1	2	3	4	5	Mean	SD
In this project, labor cost management has been linked to the lifecycle of the project implementation	9	9	21	36	24	3.58	1.213
The management of the construction materials cost has been capitalized on in this affordable housing project's lifecycle	2	5	37	32	23	3.70	.952
The estimation of the project cost has been conducted and is still being conducted at any given department by relevant authorities	7	11	19	40	22	3.60	1.160
The cost of construction materials management has been centered on in order to see the project be successful	7	12	12	42	26	3.69	1.192

In relation to cost management practice, majority of the respondents agreed that: labor cost management has been linked to the lifecycle of the project implementation (m=3.58, sd=1.213); the management of the construction materials cost has been capitalized in the project's lifecycle (m=3.7, sd=0.952); estimation of the project cost has been conducted and is still being conducted at any given department by relevant authorities (m=3.60, sd=1.160); and, the cost of construction materials management has been centered on in order to see the project be successful (m=3.69, sd=1.192).

4.6.1 Testing the Second Hypothesis

Stating the hypothesis:

H_0: *cost management practice doesn't influence the implementation of Affordable Housing Projects in Kenya.*

H_A: *cost management practice influences the implementation of Affordable Housing Projects in Kenya.*

A linear regression analysis was conducted to establish the relationship between cost management practice and the implementation of Affordable Housing Projects in Mombasa, Kenya and the results are follows:

Table 4. 11 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.430[a]	.421	.418	1.001

a. Predictors: (Constant), cost management practice

b. Dependent Variable: implementation of affordable housing project

From the model summary in table 4.11, it is clear that the adjusted R^2 was 0.418 indicating that cost management practice explained 41.8% of the variation in affordable housing project implementation.

Table 4. 12 Analysis of Variance

ANOVA[a]

Model	Sum of Squares	df	Mean Square	F	Sig.

1	Regression	1.401	1	1.411	4.005	.001[b]
	Residual	131.002	97	1.399		
	Total	**132.403**	**98**			

a. Dependent Variable: implementation of affordable housing project

b. Predictors: (Constant), cost management practice

The overall standard linear regression model (the model that incorporates constant, cost management practice) is clearly significant in predicting how cost management practice determines the implementation of affordable housing projects in Mombasa County, as can be seen from the table 4.12 above that has provided the ANOVA calculated values. An adjusted R2 of.418 (F = 4.005; P =.001b 0.05) indicates that the regression model fits the data quite well.

Table 4. 13 Regression Coefficients

Coefficients[a]

Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
		B	Std. Error	Beta		
1	(Constant)	2.101	.953		7.991	.001
	cost management practice	.419	.175	.199	3.987	.001

a. Dependent Variable: implementation of affordable housing project

The regression findings are shown in Table 4.13 and show how cost management techniques affect how an affordable housing project is implemented in Mombasa County. Y= 0 + 2 X 2 + was the linear regression equation, and it changed to:

$Y = 2.101 + .419X_2$. As depicted in table 4.13, there was positive and significant influence of cost management practice on the implementation of affordable housing project ($\beta = .199$; $t = 3.987$; $p < 0.05$).

These results led to the rejection of the null hypothesis and the acceptance of the positive hypothesis. As a result, cost management techniques have an impact on how Kenyan affordable housing projects are implemented.

4.7 Project Scheduling Practice

Respondents were asked various questions in relation to project scheduling practice and the implementation of the Affordable Housing Project in Mombasa County, Kenya. In all Likert rated scale questions, the interpretation of result values was guided by the recommended scale weights as supported by Musyoka, Gakuu and Ndunge (2017). The results were as shown in table 4.14

Table 4. 14 Project Scheduling Practice

Statement	1	2	3	4	5	Mean	SD
Work breakdown structures has been adopted as a strategy of ensuring that each project objective/work is allocated times of achievement	2	7	13	25	52	4.19	1.047
There has been an outlined sequencing of activities and tasks together with expected immediate outcomes	4	7	19	36	33	3.88	1.081
Activities that needs to be undertaken at any segment of implementing the project have been clearly defined	0	3	15	14	67	4.46	.861
The duration each activity that adds up to the project work has been clearly estimated and documented	5	10	12	21	51	4.04	1.228

Majority of the respondents strongly agreed that activities that needed to be undertaken at any segment of implementing the project had been clearly defined (m=4.46, sd=.861). In relation to

other indicators of project scheduling practice, majority of the respondents agreed that: work breakdown structures had been adopted as a strategy of ensuring that each project objective/work was allocated time of achievement (m=4.19, sd=1.047); there has been an outlined sequencing of activities and tasks together with expected immediate outcomes (m=3.88, sd=1.081); and, the duration each activity that adds up to the project work had been clearly estimated and documented (m=4.04, sd=1.228).

4.7.1 Testing the Third Hypothesis

These results led to the rejection of the null hypothesis and the acceptance of the positive hypothesis. Therefore, project-scheduling procedures have an impact on how affordable housing projects are implemented in Kenya.

Stating the hypothesis:

H_0: project scheduling practice doesn't have a significant influence on the implementation of Affordable Housing Projects in Kenya.

H_A: project scheduling practice has a significant influence on the implementation of Affordable Housing Projects in Kenya.

A linear regression analysis was conducted to establish the relationship between project scheduling practice and the implementation of Affordable Housing Projects in Mombasa, Kenya and the results are follows:

Table 4. 15 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.331[a]	.321	.318	1.192

a. Predictors: (Constant), project scheduling practice

b. Dependent Variable: implementation of affordable housing project

From the model summary in table 4.15, it is clear that the adjusted R^2 was 0.418 indicating that project scheduling practice explained 31.8% of the variation in affordable housing project implementation.

Table 4. 16 Analysis of Variance

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.611	1	1.352	3.115	.003[b]
	Residual	129.101	97	1.292		
	Total	**130.712**	**98**			

a. Dependent Variable: implementation of affordable housing project

b. Predictors: (Constant), project scheduling practice

It is clear from table 4.16 above, which presents the results of the ANOVA calculations, that the overall standard linear regression model (the model that accounts for constant project scheduling practice) is significant in predicting how project scheduling practice affects the implementation of affordable housing projects in Mombasa County. A high degree of fit for the regression model is demonstrated by an adjusted R2 of.318 (F = 3.115; P = .003b 0.05).

Table 4. 17 Regression Coefficients

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.001	.753		5.081	.002
	project scheduling practice	.319	.205	.201	2.998	.002

a. Dependent Variable: implementation of affordable housing project

The regression results on how project-scheduling procedures affect the delivery of affordable housing projects in Mombasa County are shown in Table 4.17. Y= 0 + 3 X 3 + was the linear regression equation, and it changed to:

Y =1.001+.319X3. As depicted in table 4.17, there was positive and significant influence of project scheduling practice on the implementation of affordable housing project ($\beta = .201$; $t = 2.998$; $p < 0.05$).

4.8 Risk Management Practice

Respondents were asked various questions in relation to risk management practice and the implementation of the Affordable Housing Project in Mombasa County, Kenya. In all Likert rated scale questions, the interpretation of result values was guided by the recommended scale weights as supported by Musyoka, Gakuu and Ndunge (2017). The results were as shown in table 4.18

Table 4. 18 Risk Management Practice

Statement	1	2	3	4	5	Mean	SD

Project team utilize risk identification breakdown structures (RBS) as a checklist tool for enlisting potential risks	8	11	18	39	23	3.59	1.195
Project team is well equipped to determine the timing of risk occurrences	5	11	27	31	25	3.61	1.132
Contingency plans are used in order to avoid any situation that may cause delays in projects	2	7	17	30	43	4.06	1.038
The project team has identified a number of strategies that mitigates the risks associated with this project	6	11	12	33	37	3.85	1.215

The majority of respondents concurred that the project team uses risk identification breakdown structures (RBS) as a checklist tool for listing potential risks (m=3.59, sd=1.195); that the project team is well-equipped to determine the timing of risk occurrences (m=3.61, sd=1.132); that the project team uses contingency plans to avoid any situation that could cause delays in projects (m=.06, sd=1.038); and that the project team has a risk management plan of (m=3.85,sd=1.215).

4.8.1 Testing the Fourth Hypothesis

Stating the hypothesis:

H0: risk management practice doesn't influence the implementation of Affordable Housing Projects in Kenya.

HA: risk management practice influences the implementation of Affordable Housing Projects in Kenya significantly.

In order to determine the association between risk management practice and the delivery of affordable housing projects in Mombasa, Kenya, a linear regression analysis was done. The findings are as follows:

Table 4. 19 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.281[a]	.280	.279	1.091

a. Predictors: (Constant), risk management practice

b. Dependent Variable: implementation of affordable housing project

From the model summary in table 4.19, it is clear that the adjusted R^2 was 0.279 indicating that risk management practice explained 27.9% of the variation in affordable housing project implementation.

Table 4. 20 Analysis of Variance

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.411	1	1.452	2.819	.000[b]
	Residual	132.001	97	1.402		
	Total	**133.412**	**98**			

a. Dependent Variable: implementation of affordable housing project

b. Predictors: (Constant), project scheduling practice

From the table 4.20 above that has given the ANOVA calculated values, it is evident that the overall standard linear regression model (the model that involves constant, risk management practice) is significant in predicting how risk management practice determine affordable housing

project implementation in Mombasa County. The regression model achieves a high degree of fit as reflected by an adjusted R^2 of .279 (F = 2.819; P = .000[b] < 0.05).

Table 4. 21 Regression Coefficients

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.693	.998		4.901	.001
	risk management practice	.281	.711	.278	1.979	.000

a. Dependent Variable: implementation of affordable housing project

Table 4.21 presents the regression results on how risk management practice determines implementation of affordable housing project in Mombasa County. The linear regression equation was that: $Y= \beta_0+\beta_4X_4 + \varepsilon$ *and* the linear regression equation became:

$Y =1.693+.281X_4$. As depicted in table 4.21, there was positive and significant influence of risk management practice on the implementation of affordable housing project (β = .278; t = 1.979; p < 0.05).

Based on these findings, the null hypothesis was rejected and the positive hypothesis accepted. Therefore, risk management practice influences the implementation of Affordable Housing Projects in Kenya.

CHAPTER FIVE
SUMMARY OF THE RESEARCH FINDINGS, DISCUSSIONS, CONCLUSIONS AND RECOMMENDATION

5.1 Introduction

Chapter five contains an analysis of the data garnered from the research instruments administered. The chapter continues to discuss the findings, linking them to the literature reviewed and draws conclusions and recommendations based on the findings.

5.2 Summary of the Study Findings

The purpose of this study was to evaluate the impact of project management techniques on the execution of affordable housing projects in Mombasa County, Kenya. Given that the study was conducted during a political era and that the initiative had a political bent, the response rate of 66% was thought to be favorable.

5.2.1 Stakeholders' Participation Practice and Implementation of Affordable Housing Projects

The first objective was to determine the impact of stakeholder participatory practices in the implementation of affordable housing projects in Mombasa, Kenya. The results showed that most respondents (71.72%) were aware that stakeholder participation practices impact the implementation of affordable housing projects. Furthermore, most, clearly agreed that stakeholders are involved in the project lifecycle (m=4.33, sd=0.958). The same trend further confirmed that the majority of respondents agreed with these thoughts: stakeholders had been and were still being involved at any step of the affordable housing project since its inception (m=3.78, sd=1.271); levels of stakeholders' involvement in the project correspondents to their immediate influence on project implementation (m=3.9, sd=1.199); there has been and still is proper communication on the housing project (m=3.92, sd=1.192); and, stakeholders' conflict management was being used as one strategy of involving projects in implementing the project (m=3.95, sd=1.388). Using linear regression analysis to test the hypothesis, there was a positive and significant effect of stakeholder engagement on affordable housing project implementation

(β=0.100; t=0.987; p<0.05). Based on these findings, the null hypothesis was rejected and the positive hypothesis was accepted. Stakeholder participatory practices therefore have a significant impact on the implementation of affordable housing projects in Kenya.

5.2.2 Cost Management Practice and the Implementation of Affordable Housing Projects

Regarding the second objective, which was to determine the extent to which cost management practices affect the implementation of affordable housing projects, majority of the respondents (81.81%) were aware of cost management practice and did confirm that it influences the implementation of the affordable housing project. Additionally, a majority of respondents agreed agreed that: labor cost management has been linked to the lifecycle of the project implementation (m=3.58, sd=1.213); the management of the construction materials cost has been capitalized in the project's lifecycle (m=3.7, sd=0.952); estimation of the project cost has been conducted and is still being conducted at any given department by relevant authorities (m=3.60, sd=1.160); and, the cost of construction materials management has been centered on in order to see the success of the project (m=3.69, sd=1.192). After testing the hypothesis, there was a positive and significant effect of cost control practices on affordable housing project implementation ($\beta = 0.199$; $t = 3.987$; $p < 0.05$). Based on these findings, the null hypothesis was rejected in favor of the positive hypothesis. Cost control practices will therefore influence the implementation of affordable housing projects in Kenya.

5.2.3 Project Scheduling Practice and Affordable Housing Projects Implementation

A third objective of the study was to identify the extent to which project planning practices influence the implementation of affordable housing projects in Kenya. As a result, the majority of respondents (65.6%), agreed that they were aware of project scheduling practice and its influence on the implementation of housing projects. Moreover, majority of the respondents strongly agreed that activities that needed to be undertaken at any segment of implementing the project had been clearly defined (m=4.46, sd=.861). In relation to other indicators, most of the respondents agreed that: work breakdown structures had been adopted as a strategy of ensuring that each project objective/work was allocated time of achievement (m=4.19, sd=1.047); there has been an outlined

sequencing of activities and tasks together with expected immediate outcomes (m=3.88, sd=1.081); and, the duration each activity that adds up to the project work had been clearly estimated and documented (m=4.04, sd=1.228). Therefore, project scheduling practice influences the implementation of Affordable Housing Projects in Kenya.

5.2.4 Risk Management Practice and Affordable Housing Projects Implementation

The results indicated that this practice was the most famous to the respondents as supported by 95.96% of the respondents. On average, it was supported by 88.7% of these respondents as a major determinant practice in affordable housing projects implementation in Mombasa County. Regarding various indicators of risk management practices, the majority of respondents agreed that: The project team was well equipped to judge the timing of risk emergence (m=3.61, sd=1.132). Contingency planning was used to avoid situations that could lead to project delays (m=.06, sd=1.038). The project team identified a number of strategies to mitigate risks associated with the project (m=3.85, sd=1.215). When testing the hypothesis, there was significant positive influence of risk management practice on the implementation of affordable housing project (β = .278; t = 1.979; $p < 0.05$). Based on these findings, the null hypothesis was rejected and the positive hypothesis accepted.

5.3 Discussions of the Research Findings

5.3.1 Stakeholders' Participation Practice and Implementation of Affordable Housing Projects

On participation practices in the implementation of projects in Mombasa, most respondents (71.72%) were aware that stakeholders' participation practice influences the implementation of affordable housing project. Most respondents strongly agreed that stakeholders were involved in the project life cycle (m=4.33, sd=0.958). When testing the hypothesis using linear regression analysis, there was seen to be positive influence of stakeholders' participation on the implementation of affordable housing project ($\beta = 0.100$; t = 0.987; $p < 0.05$). This is consistent with Ewurum's (2019) study, which examined the use of stakeholder management strategies to deliver sustainable public housing in South East Nigeria and discovered that these strategies were

significant in determination of the sustainability of public housing projects in that region. Furthermore, stakeholder identification was a significant predictor; we found that stakeholder conflict management played an important role such as its role in facilitating social housing provision in southeastern Nigeria through mutual problem solving (9.299).

5.3.2 Cost Management Practice and the Implementation of Affordable Housing Projects

On the second objective, most respondents (81.81%) were aware of cost management practice and confirmed that it influences the implementation of affordable housing projects. Additionally, majority of the respondents agreed that labor cost management has been linked to the lifecycle of the project implementation (m=3.58, sd=1.213). Testing the hypothesis revealed a significant positive influence on cost management practices on the implementation of affordable housing project ($\beta = .199$; $t = 3.987$; $p < 0.05$). This is consistent to Muigai (2019) who avers that project cost management is the highest rating project management practice that determines the rate of projects completion in the construction industry. This study also found a connection between several project management best practices and the efficient execution of road construction projects (planning, administration cost; scope creep management; monitoring and evaluation). Similar findings were made by Kimtai (2019 on the impact of project management outcomes of residential construction in Nairobi City. Among other factors like planning and resource administration, cost management came out on top for influencing the implementation and completion of residential construction projects.

5.2.3 Project Scheduling Practice and Affordable Housing Projects Implementation

The third study objective was to determine how much project scheduling technique has an impact on how affordable housing projects are implemented in Kenya. Most of respondents, according to the results, (65.6%), agreed that they were aware of project scheduling practice and its influence on the implementation of housing projects. Moreover, most respondents strongly agreed that activities that needed to be undertaken at any segment of implementing the project had been clearly defined (m=4.46, sd=.861). There was significant positive influence of project scheduling practice on the implementation of affordable housing project ($\beta = .201$; $t = 2.998$; $p < 0.05$). Mata & Ashkenas (2019) did a study in the UK and found out that project schedules are significant in the

outcomes of implementation of projects. Similar to this, Ouru (2019) in his study aimed at developing best practices in project management that can influence. Resource scheduling had an impact on this project's performance because it made sure that it was on budget, that adjustments were made to accommodate the projects' dynamic character, and that the personnel had what they needed to do their jobs Resource scheduling had an impact on how well the project performed because it made sure that it was on budget, that adjustments were made to accommodate the projects' dynamic nature, and that the staff had everything they needed to do their jobs.

5.3.4 Risk Management Practice and Affordable Housing Projects Implementation

The ultimate goal was to determine how much risk management practices affect how affordable housing projects are implemented. Most respondents (88.7%) supported the idea that risk management practice is a major determinant of affordable housing projects implementation in Mombasa County. The majority of respondents also concurred that risk identification breakdown structures (RBS) are used by project teams as a checklist tool for listing potential risks (m=3.59, sd=1.195); the project team is well-equipped to determine when risk occurrences will occur (m=3.61, sd=1.132); and contingency plans are used to prevent any circumstance that could result in project delays (m=.06, sd=1.038); and, the project team had identified a number of strategies that mitigates the risks associated with the project (m=3.85,sd=1.215). The risk management technique had a favorable and significant impact on the implementation of the affordable housing project, according to the test results ($\beta = .278$; $t = 1.979$; $p < 0.05$). In agreement to these findings is Nzau (2018) found out that projects risk management is a crucial part in projects implementation; although overlooked in Kenya.

5.4 Conclusions

Based on the result findings, we can conclude that in the affordable housing project being implemented in Mombasa County, the project implementers are aware of the various project management practices including: stakeholders' participation practice, cost management practice, project scheduling practice, and risk management practice. The practice of stakeholders' participation in the development of housing projects can also be concluded to have a substantial

impact on that process. Similarly, the researcher concludes that cost management practice has a significant influence on projects implementation. Among the components of cost management practice that have a significant influence on affordable projects implementation are: project labour costs management, cost of materials management, project cost estimation, etc. Moreover, the researcher draws the conclusion that project scheduling practice influences the implementation of affordable housing projects. Work breakdown structures, sequencing of activities and tasks, definition of activities, and estimation of activities timeframes rank among the top indicators of project scheduling practice. Utilization of risk breakdown structure in identifying risks, contingency plans in risk avoidance, risk mitigation strategies among others form crucial components of risk management in projects.

5.5 Recommendations

The researcher recommends an introduction of various rules and regulations requiring all the contractors, project managers and other project implementers to have prior knowledge of various project management practices before being allowed to handle the various sensitive projects in the country including the housing projects. The researcher further recommends for well laid down procedures of inclusivity in stakeholders' management and participation in the project cycle. The various types of project stakeholders should be identified and proper communication done with fair and equal participation opportunities being awarded to all. In the same note, the researcher recommends that all the individuals involved in handling the various activities that add up to the final affordable housing projects implementation be tailed on project cost management. This cuts across all the cadres of project handlers and the training should involve the materials and non-material components of projects. In relation to project scheduling, the project managers and implementers should assign each task at the start and end period with strict penalties being tied to time overruns unless unavoidable risks befall the project life cycle. Finally, the project managers should put in place well known and understood risk management strategies and plans in order to bring everyone onboard so as to easily handle associated risks. Scientific methods of risk identification, expertise be utilized in risk management planning, the avoidable risks be avoided and those that can be reduced be reduced.

5.6 Suggestions for Future Studies

Mombasa County was the site of this study. With the implementation of the Big4 Agenda-recognized affordable housing project in Kenya, a comparable study might be done in the counties where the initiative has already begun. Furthermore, a research analyzing the viability of this inexpensive housing project across Kenya's counties needs to be done. The execution of this affordable housing project in Mombasa County and other counties has to be monitored and evaluated, as well as the effects of other project management techniques not covered in the current study.

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APPENDICES

Appendix I: Letter of Introduction

Linah Kana Mwendwa

University of Nairobi,

Department of Extra-Mural Studies

Tel: 0700276989

Email: kanamwendwa@gmail.com

To the Respondent,

RE: REQUEST FOR YOUR PARTICIPATION

I am a postgraduate student at the University of Nairobi, carrying out a research on the influence of **Project Management Practices on the Implementation of Affordable Housing Projects in Mombasa County, Kenya.** The results of this study will assist the government in evaluation of performance of housing projects. This may help in making effective and efficient decision by project managers. The data will be used for academic purposes only and will be treated with confidentiality it deserves. The respondents are highly encouraged and persuaded to respond to the questions or statements in this questionnaire in the most truthful and objective way possible. Your participation in facilitating this study is highly appreciated

Kindly tick in the spaces provided the correct answer or fill in the required information. Thank you for your participation.

Yours faithfully,

Linah Kana Mwendwa

Appendix II: Research Questionnaire

Please answer all the questions in all the sections as indicated by either ticking or filling in the blank space provided

SECTION A: Background Information

1) What is your gender? Male ( ) Female ( )

2) Age category. Below 20 years ( ), 21-30 years ( ), 31-40 years ( ) above 41 years ( )

3) What is your highest level of education? Secondary ( ) Tertiary college ( ) University graduate ( ) University postgraduate ( ) other (please specify) ( )

4) What is your work specification? ----------

5) What is your work experience? Below 5 years ( ), 5-10 years ( ), 10-15 years ( ) Above 15 years ( )

Section B: Questions as per the Objectives

6(a) Have you ever come across the following practices of project management in the life cycle of this affordable housing project?

Practice	**Yes**	**No**
Stakeholders' Participation		
Cost Management		
Project Scheduling		
Risk Management		

6(b) If your answer in question 6(a) is yes, kindly tick whether you support the idea that the following project management practices influence the implementation of affordable housing projects

Practice	**Yes**	**No**
Stakeholders' Participation		
Cost Management		
Project Scheduling		
Risk Management		

7) Identify how you agree or disagree with the following statements by replacing the box to the right of the number with an X. The agreement scale ranges from 1-5 where 5= Strongly Agree (SA), 4= Agree (A), 3=Neither Agree nor Disagree (N), 2=disagree (D), and 1=Strongly Disagree (SD)

Indicators of stakeholders' involvement	**1**	**2**	**3**	**4**	**5**
i. Stakeholders are involved at in this project's lifecycle					
ii. Stakeholders have been and are still being involved at any step of this housing project since its inception					
iii. Levels of stakeholders' involvement in the project correspondents to their immediate influence on project implementation					
iv. There has been and still is proper communication with stakeholders in this housing project					

v.	Stakeholders conflict management as being used as one strategy of involving projects in implementing the project					

8) Identify how you agree or disagree with the following statements by replacing the box to the right of the number with an X. The agreement scale ranges from 1-5 where 5= Strongly Agree (SA), 4= Agree (A), 3=Neither Agree nor Disagree (N), 2=disagree (D), and 1=Strongly Disagree (SD)

Elements of cost management		**1**	**2**	**3**	**4**	**5**
i.	In this project, labor cost management has been linked to the lifecycle of the project implementation					
ii.	The management of the construction materials cost has been capitalized on in this affordable housing project's lifecycle					
iii.	The estimation of the project cost has been conducted and is still being conducted at any given department by relevant authorities					
iv.	The cost of construction materials management has been centered on in order to see the project be successful					

9) Identify how you agree or disagree with the following statements by replacing the box to the right of the number with an X. The agreement scale ranges from 1-5 where 5= Strongly Agree (SA), 4= Agree (A), 3=Neither Agree nor Disagree (N), 2=disagree (D), and 1=Strongly Disagree (SD)

Elements of Project Scheduling	**1**	**2**	**3**	**4**	**5**

i.	Work breakdown structures has been adopted as a strategy of ensuring that each project objective/work is allocated times of achievement					
ii.	There has been an outlined sequencing of activities and tasks together with expected immediate outcomes					
iii.	Activities that needs to be undertaken at any segment of implementing the project have been clearly defined					
iv.	The duration each activity that adds up to the project work has been clearly estimated and documented					

10) Identify how you agree or disagree with the following statements by replacing the box to the right of the number with an X. The agreement scale ranges from 1-5 where 5= Strongly Agree (SA), 4= Agree (A), 3=Neither Agree nor Disagree (N), 2=disagree (D), and 1=Strongly Disagree (SD)

Elements of Risk Management	**1**	**2**	**3**	**4**	**5**
• Project team utilize risk identification breakdown structures (RBS) as a checklist tool for enlisting potential risks					
• Project team is well equipped to determine the timing of risk occurrences					
• Contingency plans are used in order to avoid any situation that may cause delays in projects					
• The project team has identified a number of strategies that mitigates the risks associated with this project					

11) Identify how you agree or disagree with the following statements by replacing the box to the right of the number with an X. The agreement scale ranges from 1-5 where 5= Strongly

Agree (SA), 4= Agree (A), 3=Neither Agree nor Disagree (N), 2=disagree (D), and 1=Strongly Disagree (SD)

Elements Housing Projects Performance	**1**	**2**	**3**	**4**	**5**
• The projects are completed within a given time frame					
• The projects are completed within budget (project costs)					
• Completed projects adheres to standard quality					