

**RESOURCE CAPACITY AND IMPLEMENTATION OF
AFFORDABLE RESIDENTIAL HOUSING PROJECTS IN
MACHAKOS COUNTY, KENYA**

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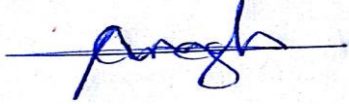
**A RESEARCH PROJECT REPORT SUBMITTED IN PARTIAL
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NAIROBI**

OCTOBER, 2022

DECLARATION

This project is my own work and has not been earlier presented in any other learning institution.

Signature



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This project report has been submitted for purposes of assessment with my consent as the supervisor.

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DEDICATION

This project report is dedicated to my wife, Victoria Mutheu Mutuku and daughters, Sandra Kaluki Mutuku & Sarah Nduku Mutuku. You have really been an instrumental during my study and even during the writing of this project.

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I am grateful to my project supervisor, Dr. Reuben Kikwatha for his patience and guidance during the development of this project. I also wish to thank my moderator Dr. Johnbosco Kisimbii for his immense support and guidance through the whole process of this research development. I also wish to recognize and thank my family led by my dear wife Victoria Mutheu Mutuku and daughters, Sandra Kaluki Mutuku & Sarah Nduku Mutuku for they have provided me ample time and financial resources enabling me to smoothly undertake my course and project without running into a hitch.

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LIST OF ABBREVIATIONS

AHP:	Affordable Housing program
BFAI:	Barriers and Facilitators Assessment Instrument
BNG:	Breaking New Ground
CAHF:	Center for Affordable Housing finance in Africa
DPS:	Dresden Prediction Study
DOPU:	Drop-off and Pick-up
ECCE:	Extra Ordinary Chambers in the Courts of Cambodia
EWS:	Economically Weaker Sections
FA:	Family Accommodation
HBV:	Hepatitis B Virus
ICC:	International Criminal Court
KIWASCO:	Machakos Water and Sewerage Company
KPLC:	Kenya Power and Lighting Company
LIG:	Low Income Groups
MIG:	Middle Income Groups
NACOSTI:	National Commission for Science, Technology, and Innovation
NEMA:	National Environmental Management Authority
OCD:	Obsessive Compulsive Behavior
PA:	Physical Activity
SNQ:	Stroke Nursing Guideline
QIT:	Quality Indicator Tools
UN:	United Nations

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ABSTRACT

The supply of housing for low-income households in Kenya continues to remain behind demand and majority of the urban dwellers live in informal settlements since they cannot afford housing in formal market. The housing policies and strategies put in place over the last 30 years failed to provide adequate and affordable housing to all segments of the urban population and this compelled the Kenyan Government to re-think its policy on housing affordability. In 2017 the Kenyan government launched the Affordable Housing Programme which takes cognizance of the different social economic strata of the population. This study sought to investigate the influence of resource capacity and implementation of affordable housing projects. The study site was Machakos County in Kenya. The exogenous variables of this investigation were: financial resources, human resources and social capital resources. The study was based on three theories: resource based view theory, general system theory and program theory. Descriptive survey research design was employed as the study research design. Moreover, the study population constituted all stakeholders in affordable housing projects specifically in Machakos County. A sample of 297 was drawn from determined target population of 1262. Two research instruments; questionnaire and interview guide were used in this research. Interview guide was used to help collect qualitative data from key informants while questionnaire collected quantitative data. The data was analysed using SPSS version 25.0 software. The model summary showed that there was a positive relationship between the dependent and independent variables with different scores and thus the null hypothesis which stated that there was no significant relationship between resource capacity and implementation of affordable housing project was rejected. Financial capacity had the highest score with human resource capital having the lowest score. The study recommended that the government needs to establish a link between the national government, county government and the financial institutions so that there can be a continued flow of financial resources/reserves which were found to have the highest influence on the implementation of housing project, the county government needs to put up mechanisms for training of the staff who are involved in the implementation of these projects. There is need for inductions for the employees for further career development in their fields and that there is need to have vigorous consultative meetings among the stakeholders so that there is a constant briefing so that each stakeholder has fist hand information on the progress of the project. The study suggested a similar study to be done in other counties where this affordable housing project was done so that the results can be compared with this one. This will give a broad view of the whole phenomenon and a study on monitoring and evaluation be done in order to answer some of the questions which respondents had neutral opinion such as whether the project can borrow and service their loans without a challenge.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

It is essential to human existence that we have a place to live. Based on their economic status, every household strives to have a decent home. Throughout the past decade, the building construction industry has really grown globally. The review of regulatory policies and granting of tax incentives have contributed to the growth of this sector. Due to the increase in population in urban areas, housing demand has increased significantly. In a number of developed nations, housing has grown significantly, but the same has not been true for population growth. The governments have taken deliberate steps to construct residential houses so that they are affordable and accessible to low and middle-income individuals. In terms of economic development of a nation, housing has significant impact on workers, employers, communities, and regional markets (Necesito, 2018). Scholars world over have investigated key drivers to implementation and sustainability of housing project and come up with various findings and recommendations for development. Various countries around the world have seen increasing housing demand in recent years due to factors such as urbanization and population growth (Kim, 2019). Despite the fact that urbanization is encouraged to ensure cities become economically stable, most are ill-equipped to handle the huge influx of residents (Mahamid, 2021). Global urbanization continues to escalate urban challenges, causing them to become increasingly urgent. In addition, there are up surging unemployment issues, environmental degradation issues, poor or limited urban services, insufficient infrastructure, and inadequate and durable housing (Necesito, 2018). As a result of the demand for housing, governments around the world have invested heavily in the construction of residential houses to meet its citizens' needs.

In addition to its global importance, the construction industry is crucial to any country's growth, and its development is directly dependent on the quality of construction projects (Peter and Evelyn, 2015). According to Ahmed, Mohamed, and Omar (2017), the success of the construction industry is closely tied to the quality of its work. Construction is one of the most important factors contributing to the growth of India's economy, which leads to more jobs being created. Construction implementation can be assessed using the execution timetable, cost of finalization, productivity of completed work, and security (Molavi and Barral 2016). India, like major emerging

economies, has experienced urbanization that is accelerating. The country's census outcome in 2001 placed 72 percent of the population to be domiciled in the rural set up and the remainder as urban dwellers. In 2011, the rural population was 69 percent while the urban population was 31 percent. Indeed, the 2011 census revealed that, for the first time since India's independence, urban regions saw a greater increase in population than rural areas (Mahadevan, 2015). Governments in most advanced countries have made a public pledge to provide suitable housing for every household at a cost that is within their means. A rising agreement in China is that everyone should be entitled to a socially imposed minimum level of living (Yan and Jie, 2014). Production capacity and resource consumption are the primary factors influencing the productivity of a construction company in Benin. This shows that the highest level of production is achieved when qualified people are retained and high-quality resources are utilized (Adeleke, Nasidi, and Bamgbade, 2016).

Kenya is certainly making efforts to improve the housing conditions there which are characterized by poverty. A number of policies and resources have been mobilized by the government to address poor housing conditions in line with SDG target 11. As stated in SDG 11 (target 11.1), all responsible agencies, including governments, are required to ensure that "by 2030, all people have access to adequate, safe, and affordable housing and basic services as well as to improve slum conditions". In order to address the issue of slum dwellers' living conditions, the Kenya Slum Upgrading Program (KENSUP) (2005-20) has been developed by the national government. Kensup's interventions include providing infrastructure and housing services, improving tenure security, and promoting participatory planning. "The Big 4" Agenda launched by President Kenyatta in 2017 includes the construction of 500,000 affordable homes by 2022, with a portion of those houses to be built in informal settlements (Kieti, Rukwaro, and Olima, 2020). Despite Kenya's support for community-based housing projects in slums, it is not clear what factors contribute to the success of such initiatives. A report by the Economic and Social Rights Center (2018) indicates that the government plans to build a million housing units over the next five years. As well as these 800,000 units, 200,000 are classified as social housing. Government officials estimate that the actual target is 500,000 units. Accordingly, the social housing target for the next five years is approximately 100,000 units. These projects will be funded so that the government will provide 10% and the National Social Security Fund (NSSF) will provide 30%.

The remaining 60% will come from private sources. The developments are spread out over 7,000 acres of land in five big towns, including Nairobi, Machakos, Eldoret, Mombasa, and Nakuru.

Kenya is faced with housing deficit of 2 million and approximated to expand at 200,000 yearly, and it has prompted its government to crafting an ambitious AHP as part of the Big 4 Agenda. Incoming supply of housing units is estimated at 50,000 housing units annually with a paltry 2% of this being for the low-income segment and it's against the yearly demand of 250,000 units. The rental rate and home ownership in Kenyan urban areas compares unfavorably 21.3 percent as well as 78.7 percent correspondingly. Low house ownership can be attributable to un-affordability of housing units in surging prices, emanating from costly land, costs of construction and professional costs that those developing must necessarily recoup (Center for Affordable Housing finance in Africa , 2021). The housing supply for households with low-income in Kenya remain behind demand and majority of the urban dwellers live in informal settlement because they are unable to afford housing in formal market. The housing policies and strategies put in place over the last 30 years failed to provide adequate and affordable housing to all segments of the urban population and this compelled the Kenya Government to re-think its policy on housing affordability and in 2017 launched the Affordable Housing Programme (AHP) which takes cognizance of the different social economic strata of the population (Kieti, Rukwaro and Olima, 2020)

This study seeks to examine the influence of resource availability on the implementation of low cost housing project in Kenya. The implementation of low cost projects is affected by availability of resources including financial resources, infrastructure and facilities, staffing, social cultural factors relating to the low cost housing. However, this study will focus on availability of financial resources, human resources, capital resources, and social capital resources.

The study will be confined to Machakos County specifically in Machakos town hence some of the findings maybe unique based on the context of the study area and may not be applicable to the remaining sub-counties and also other counties.

1.2 Statement of the Problem

Housing affordability continues to be an issue not only for developing countries like Kenya but also for many developed nations. This problem is exacerbated by factors such as an expanding urban population, high construction and finance costs, and escalating urban land prices. In a bid to build 500,000 affordable houses by 2022 for all Kenyans, Kenya has announced an affordable

housing program as one of the three big agendas. In spite of their importance to economic development, government housing projects face challenges in their implementation (Mahamid, 2021). It is critical to measure the implementation of housing projects in terms of achieving several objectives. These objectives include completing projects on schedule, delivering projects within budget, and ensuring quality throughout the project's entire lifecycle. Moreover, Othieno (2019) stated that residential housing projects are evaluated based on their time, safety, quality, and cost implementation. Kim (2019) notes, however, that most government housing projects around the world are experiencing cost overruns, delays in delivery, and poor quality. For example, Mahamid (2021) indicates that 76% of residential housing projects experience cost overruns with an average of 34.58% and 88% experiencing time overruns. Among the methods of improving project schedule implementation, cost implementation, and quality implementation is the use of monitoring and evaluation, as indicated by Hazhar (2020).

There are numerous hindrances that limit the realization of the housing agenda not only locally, but even globally. Ronoh (2020) observed that out of 10, 9 residential housing projects suffers cost overruns up to 183%. In addition, Kihoro (2017) observed that 48% of building construction projects in Nairobi County are incomplete and 10% of them have stalled completely. The stalling of these projects, delays in delivery as well as increase in cost of construction leads to the persistence in the inadequacy of housing units in Nairobi City County. In addition, Kaniaru (2018) points that failure of these housing projects will result in reduced supply of quality houses as well as injured economy. Elizabeth (2020) also indicates that while most of government residential projects utilize monitoring and evaluation, there is low involvement of stakeholders and poor communication. It is therefore important to understand the influence of monitoring and evaluation practices on implementation of residential housing projects. It is against this backdrop that this study investigates the relationship between the two variables.

1.3 Purpose of the Study

The purpose of this study was to examine the influence of resource availability on the implementation of low-cost housing Projects in Machakos County, Kenya.

1.4 Objectives of the Study

The following objectives were guided this study:

- i. To examine what extent does financial resources influence the implementation of low cost housing Projects in Machakos County, Kenya.
- ii. To establish the influence of human resource on the implementation of low cost housing Projects in Machakos County, Kenya.
- iii. To determine the influence of social capital resource on the implementation of low cost housing Projects in Machakos County, Kenya.

1.5 Research Questions

This study was based on the following research questions:

- i. How does the availability of financial resources influence the implementation of low-cost housing Projects in Machakos County, Kenya?
- ii. To what extent does human resource availability influence the implementation of low-cost housing Projects in Machakos County, Kenya?
- iii. To what extent does social capital resource availability influence the implementation of low-cost housing Projects in Machakos County, Kenya?

1.6 Research hypothesis

This study tested the following hypotheses at the 95% level of significance:

H_{01} Financial resource has no significance influence on the implementation of low-cost housing projects in Machakos County.

H_{02} Human resource has no significance influence on the implementation of low-cost housing projects in Machakos County.

H_{03} Social capital resource has no significance influence on the implementation of low-cost housing projects in Machakos County.

1.7 Value of the study

The study findings of this study will be valuable to the Ministry of Housing in Machakos County in evaluating factors that can enhance implementation of low-cost housing project as the study will establish the factors that enhance the availability of low cost housing project. It is expected that through the findings and recommendations of this study, the Ministry of Housing can develop and

implement various regulations and policies for quality and efficient low-cost housing project in Kenya. The findings of this study will also be instrumental source of information for managers of low-cost housing project bearing in mind that the government of Kenya is determined to offer low-cost houses to its citizens. The findings will show various aspects in low-cost housing projects that affect implementation of these projects. The study is also beneficial to the targeted beneficiaries of the low-cost housing project.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter has concentrated on a general assessment of the literature as well as a theoretical review of several ideas pertinent to this topic. This portion also looked at the empirical review according to the factors, the conceptual framework, and establishing the gaps in study.

2.2 Theoretical Foundation

The research focused on the following theories, resource-based theory, systems theory and the program theory

2.2.1 Resource Based View

Birger Wernerfelt (1984) developed the resource-based theory. This theory suggests that a firm's competitive edge is based mainly on using a combination of the essential capabilities and the resources, both the tangible and the intangible ones, which the firm controls. Colbert (2014) indicates the relationship between firm capabilities and firm resources. According to him, capabilities are unique non-transferable resources of a certain organization. The key responsibility of capability resources is to increase productivity level of other resources owned by the organization. The resources are the assets owned and controlled by a company, while capabilities are the company's capacity to implement the resources. It is the packaging of the resources that improve the capabilities. If an organization has the best and most appropriate stock of resources relevant to its business and strategy, it is more likely to succeed and excel (Teece, Pisano & Shuen, 2017). The firm is largely defined by the resources or information it embodies or commands in the RBV. It incorporates a better understanding of the firm's role into our market knowledge (Hurevicius, 2013).

According to proponents of this view, only exceptional resources can provide a long-term competitive edge. RBV focuses on internal issues that can be controlled rather than external factors beyond their control (Wernerfelt, 1984). A company's strategy is developed by its resources and capabilities, establishing building blocks. The competitive position is determined by its unique connections and resources. Companies operate differently because of distinct tangible and also intangible resources and capabilities.

This study will use RBV theory to evaluate effect of organizational capacity on county governments' water projects' implementation. The water projects' implementation differs since resources have varying levels of inherent efficiency. RBV theory highlights the importance of water projects management to obtain, manage and use resources to improve projects' implementation. The sufficiency, accessibility, and timely release of resources significantly influence County water projects' implementation.

2.2.2 General System Theory (GST)

GST was proposed in 1968 by the biologist Karl Ludwig von Bertalanffy. The theory holds that a system is an ecosystem with different cohesive, interrelated, and interdependent parts developed either naturally or through human effort. The theory asserts that every system has defined geographical and existential boundaries, predisposed to act in a certain way by its environment, described by its purpose and structure, and expressed in its functioning. According to Drack and Pouvreau (2015), the effect of a system that employs synergy and emergent behaviour is more than the sum of its interrelated parts. A change in one part of the system typically impacts other parts and the entire system with predictable behavioural patterns. For systems to be considered self-learning and self-adapting, the adaptation and positive growth will usually depend on how well the system is aligned to its environment. According to Luhmann (2012), the role of some systems is to provide support for other systems by providing a mechanism for maintenance to avert failure.

Theoretically, a system can be open or closed. Within open systems, there is the constant or intermittent exchange of energy, information, or other resources with the external environments, while closed systems do not. The sensitivity to the external environment is the main difference between closed and open systems (Luhmann, 2012). A closed system will ordinarily be insensitive to changes in external environment, while open systems respond to changes in the external environment. Most water projects are open systems because they have to relate with their external environment in order for them to survive. Moreover, water projects rely on their external environment for various necessary resources for their operations.

The open systems theory calls for organizations to take a comprehensive approach to problem-solving by appreciating the interplay between internal structure and external environment (Drack & Pouvreau, 2015). The main assumption of the theory is that organizations are social, given that they are made up of sub-entities that interact with their external environment. The theory also

assumes that there is no single solution to achieving success for an organization because of the dynamic nature of the interaction between a project and its environment (Assche, Valentinov & Verschraegen, 2019). General System Theory will be deployed to examine the influence of continuous improvement and participatory monitoring and reporting on Machakos county governments' water projects' implementation. As open systems, water projects regularly relate with diverse shareholders such as government agencies, community members, donors and community members. The theory emphasizes proper relationships and interaction between diverse stakeholders within the organization or a project. Continuous improvement entails providing feedback through joint reviews, utilising reports for management decision-making, communicating with stakeholders to get their inputs into the project, and improving project quality, systems, and processes.

2.2.3 Program Theory

This theory was pioneered by Suchman in the 1960s and it is most times advanced at the planning phase of a new project. The theory can also be established during the implementation phase or at the end of a project. When planning for an assessment, it is imperative to analyze the program theory and go over it to interrogate the cause-and-effect relationship that generates fundamental challenges. The program theory over the years has been utilized to advice on evaluation; it manifests the potentiality of a program to solve a challenge during the needs assessment. It also provides ways of determining parts of project effect in evaluation (Sethi and Phillipines, 2012)

A program is composed of an organization's idea on resources utilization and arranges program activities to ascertain that the marked-out beneficiaries receive the intended interventions (Rossi, 2014). The idea of a program theory is akin to the one used in logical models and baseline studies. This theory, therefore, uses the logical framework technique as its procedure (J-Pal, 2003). The contrast is that the program theory is a comprehensive description of the logic model.

This theory provides an all-inclusive perspective of initial and middle-term changes essential in setting long-term goals (Anderson, 2005). Therefore, it gives a framework on how a project ought to work which can be examined and cleared by monitoring and evaluation. Similarly, Chen (1996) and Donaldson and Preston (2005) think that program-based evaluation is going to be popular and that practically all evaluations should be carried out in this manner. The theory also focuses on the

resource utilization approaches and also scrutinizes how the target population will benefit from the project.

This theory applies to this study as it monitors implementation by applying the input-output model, more so, monitoring and evaluation practices as the primary inputs and if they are well applied they can lead to input processing and in due course yield measurable output. Finally, the program theory provides comprehensive information on how the project activities will benefit the target population, ultimately contributing to the better implementation of a project.

2.3 Empirical Literature

2. 3.1 Implementation of low-cost housing Projects.

Construction industry production processes are impeded through unaffordable housing delivery, unsustainable practices in housing designs, inadequate information on methods and practices for affordable housing delivery (Windapo 2017) Stakeholders are not appropriately enlightened about the uses of construction resources for affordable housing delivery despite the fact that such housing will have a positive effect on society (Attia, Dumbava, and Duquenne, 2014). Sustainable construction seeks to support effective management in efforts to achieve comfortable, safe, productive, and secure housing.

As the years goes by, project implementation measures have broadened beyond measuring against the three cardinal parameters: planned budget, schedule, and scope. Project implementation ought to be measured against the quadruple objectives of scope, time, cost, as well as the quality aspect. Stakeholder satisfaction has placed itself as an essential ingredient of success though remaining a nebulous and complicated concept that might be largely elaborated simply by bringing projects in at cost. The Project Management Institute (2021) categorizes the measures of project implementation in terms of productivity (cost implementation index, trends in cost and trend in schedule), quality (defects, defects removal rate and rework), time (cycle time, average delay time, time of project completion), cost (budget variances, unit costs, delay costs and overhead costs).

In a study evaluating the implementation of residential construction projects in Nairobi City County, Kenya, Ronoh (2020) examined implementation of residential construction projects in terms of completion time, cost and satisfaction. In addition, Ndungu (2017) examined the implementation of government housing projects for Kenya Police Service in Nairobi and measured implementation in terms of timeliness, completion within budget, meeting the objectives as well

as stakeholders level of satisfaction. Further, Onyari (2017) in a study on implementation of government construction projects with a special focus on Kibera Slum housing upgrading measured implementation of projects in terms of stakeholders satisfaction, completion within timeline, number of house units, completion within budget and achievement of the sect objectives. This study will measure implementation of government residential housing projects in terms of budget-completion variances, completion within timeline, quality of projects and number of houses completed.

2.3.2 Financial resources and implementation of low-cost housing Projects.

Defining cost estimates for conceptual alternatives by the owner is very key in determining the construction capital costs so that the owner of the project may provide the necessary funds (Othman et al 2017). According to Gupta & Belinda (2018) the project owner should approve maximum finance budget and formulate throughout on project financing right from the onset. Construction resource allocation is important in planning and allocating resource required like products and materials, construction tools and equipment, human resources, space, subcontractors and finances to meet project objectives of quality and on time completion of projects. (PMI 2021) Project managers need to ensure availability of resources are resource conflict resolution, optimal time, effort and cost management, ensure right skills from workers are available, identify limitations such as site access and weather and track resources utilization to avoid excessive resourcing or underutilization to achieve quality projects. According to Rumane (2018) problems with projects can occur where there is poor resources allocation, and the opposite is positive because construction has grown more technological, the variety of goods and materials has expanded, standards and rules have been stricter and many specialized creators are present, particularly in the early phases of design processes.

According to Kusimo(2018) proper resource allocation by the resource allocation team helps keep projects on schedule at the same time ensuring the need for project activities is fulfilled and maximized.(Desalegn&Jayeskumar 2018) Goods and materials, building tools and facilities, people resources, areas and facilities, subcontractors and funding need project goals and quality integration. The resource allocation team and plan should be able to establish properly defined goals and objectives which are specific,measurable, agreedupon, realistic and timely.(Gupta&Belinda 2018)

According to AbdulRumane(2018) Allocation of resources has a good or negative impact on the ultimate building quality. When resource allocation is done prudently quality is ensured and vice versa. A study by Pamela Wanja(2017) which sought to get factors influencing implementation of projects in NGOs funded by WFP in Kenya noted that resources received needed to be allocated and governed well for projects to perform. Another study by Jeremiah Nairouwa (2018) on factors influencing competitor of building projects in Kajiado highlighted that capital resource, human resource and stakeholder involvement ensure the smooth running of a project. However, this study relegated to the back customer satisfaction, which is the key in any project completion. In her study Vivi Mary Elizabeth (2020) on the influence of monitoring and evaluation on implementation of housing projects in Nairobi County she noted that resource allocation was very key for the project to be handed over on schedule over the project duration. This research stressed on human resource as a key element among capital, and resource plan as critical factors. However, the research failed to bring out the effect of resource allocation on the quality of project.

2.3.3 Human resource and implementation of low-cost housing Projects

Construction industry and production process are significant for the economic growth of a nation, especially if the intent is that of achieving cost-efficient project production. In that case, the use of resources on-site must be proficiently controlled. Effectiveness in the management of cost in construction during housing production hinges on the adequate implementation of the initial construction resources plans on-site (Langford 2014). The high cost of construction and expensive housing delivery call for the need to address issues of affordable housing in South Africa, to ensure availability and affordability of housing to the people irrespective of their income level (Odediran 2014)

Akinyede, Fapohunda and Haldenwang (2020), In South African construction industries, human resources control still remains a huge challenge among the construction managers, with a view to improve productivity rate towards affordable housing delivery for the low-income earners. This idea is considered relevant, because in South Africa housing is regularly delivered at construction cost that is higher than the budgeted cost. In effect, houses are produced and delivered at a costly rate for the people. Other contributing factors like poor skills acquisition and inadequate knowledge in sustainable design approach render the efforts of the construction industry in providing adequate housing to the people unyielding. In that case, the construction manager is expected to be pragmatic enough to develop a technique suitable to manage human resources uses

to stimulate effective production cost, waste reduction, and nurture the capacity to deliver sufficient affordable housing to the people.

Effective management of labour resources is one of the most critical functions affecting the implementation of the construction industry (Wirojanagud 2007). This is particularly true in an industry, where labour cost is high, either because the production operations are labour intensive or require highly skilled labour. Due to this effect, the construction companies are constantly looking for ways to decrease labour cost and having changed their workforce management strategy from the one that implements perfect division of labour to one that takes advantage of various forms of workforce agility (Schallmo 2017). However, among all strategies supporting the construction firm's flexibility and agility, only the development of human resources versatility is guaranteed to yield cost benefits. As a result of the emerging fact that many companies are craving for innovation and increase in productivity, there is thus a need to improve the skill of the personnel working in the construction industry. (Schmiedgen 2017) In support of this claim, the growing need of responsiveness for manufacturing companies that are facing market volatility raises a strong demand for flexibility in their organizations. Since the company personnel are increasingly considered as the core of the organizational structures, the effective management of human resources and skills is essential to improve industrial implementation (2013).

2.3.4 Social capital resource and implementation of low-cost housing Projects

Participatory project design is an approach to design that actively involve all in the design process to ensure that the result meets their needs and is usable. This alone does not guarantee success of such projects as other critical success factors influence the extent to which these projects succeed. One of the key factors that planners should not overlook is the social capital.

Over the years, scientists have offered a number of definitions of social capital. Adler (2009) says that these definitions fall into two broad types depending on whether they focus primarily on the relations an actor maintains with other actors or the relation characterizing the internal structure of an organization, the actions of individual and groups can be greatly facilitated by their membership in social networks, specifically by their direct and indirect links to other actors in their networks. The second perspective is supported by Uphoff & Wijayarathna (2000) definition that social capital refers to the collective value of all 'social networks' and the inclinations that arise from these

networks to do things for each other. Further, he defines social capital as norms, values, attitudes and beliefs that predispose people towards mutually beneficial collective action. Relevance of social capital in participatory project design emerges from this context of collective responsibility as such design highly invokes collective decision making and collective action by the beneficiaries of such projects. Social capital is the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition. Granovetter (1973) summarizes various definitions by arguing that broadly social capital can be seen in terms of five dimensions: first, networks-lateral associations that vary in density and size, and occur among both individuals and groups; second, reciprocity-expectation that in short or long term kindness and services will be returned; third, trust-willingness to take initiatives or risk in a social context based on assumption that others will respond as expected; fourth, social norms-the unwritten shared values that direct behavior and interaction; and fifth, personal and collective efficacy-the active and willing engagement of citizens within participative community. Bourdieu (1986) proposes that the volume of social capital possessed by a person depends on size of the network of connections that he or she can mobilize and on the volume of capital economic, cultural, and symbolic possessed by each person to whom he or she is connected. Thus, Bourdieu's social capital is decomposable into two elements: first, the social relationship that allows the individual to claim resources possessed by the collectivity, and second, the quantity and quality of those resources

Social capital facilitates access to broader sources of information at lower cost which is very crucial in designing a well-informed participatory design. Coleman (1988), in Alder (2009) illustrates this benefit with the example of a social scientist catching up on the latest research in related field through everyday interaction with colleagues. Information benefits at the focal group level can also lead to positive externalities for the broader aggregate. Hussain & Sanders (2012), argue that for participatory design projects to be successful, designers and organizations in charge of product development must have realistic expectations and understand that they will be working under very different circumstances than when doing participatory design in developed countries. They must be aware of the possible challenges and be prepared to deal with them. Burt (1997) views social capital enables brokerage activities that bring information from other actors to the focal actor. Uzzi (1997) finds that transfer of fine grained information among firms help them all better to forecast future demands and anticipate customer preference.

Viewed from the perspective of norms, values, attitudes and beliefs, social capital thus becomes a critical factor of consideration in any participatory design. Hussain & Sanders, (2012) posits that any design project should be based on a strong understanding of the history, culture, and society of where the product will be used and getting an overview of production facilities and technical production constraints thus understanding the local culture was essential for knowing how to approach participants and treat them with respect in accordance with their culture and beliefs. Social capital enhances solidarity where strong social norms and beliefs associated with high degree of closure of social networks, encourage compliance with local rules and customs and reduce the need for formal controls (Alders 2009). This is a conducive environment for people to come together and plan for their destiny in a more participatory approach. Ouch (1980) argues that clan organization with strong shared norms benefit from lower monitoring costs and higher commitment. Nelson (1989) in his study supports this that intergroup ties in organization shows that frequent interaction among groups permits faster dispute resolution and prevents the accumulation of grievances and grudges. This can only be achieved thorough a good understanding of the people way of life and culture. Hussain & Sanders (2012) recommends that designers should recognize that it takes a long time to build a relationship with participants and that before this relationship is built, participatory design activities are not likely to give deep insight into user needs and product requirements. Having profound knowledge of the local culture and society is essential to motivate people to participate and to organize design activities in a culturally appropriate way. Designers should, therefore, set aside enough time to understand the local culture and use this understanding when engaging with participants.

Trust is another key social capital element that project designers needs to focus on. Trust must be building and harnessed among various project stakeholders, beneficiaries, financiers and the government. Morrow & Hansen (2004) argue that with cognitive-based trust, “One party assesses the trustworthiness of another party by weighing the evidence embedded in both the attributes of the transaction and the characteristics of the other party(s) to the transaction.” Therefore, each client-project manager interaction presents an opportunity for cognitive-based trust to be either heightened or eliminated. McAllister (1995) supports this argument by asserting that cognitive-based trust is built on perceptions and self-interest as it pertains to implementation and accomplishments through direct dealings with a partner. The basis of cognitive-based trust is cognitive reasoning For example, if a client is thoroughly impressed with a project manager’s

professional and educational training, experience and past role implementation, the client could tend to develop a cognitive-based trust relationship with the project manager. In comparison, affective-based trust is based upon an emotional bond that often tends to go beyond a business or professional relationship or prior knowledge of implementation.

2.4 Conceptual framework

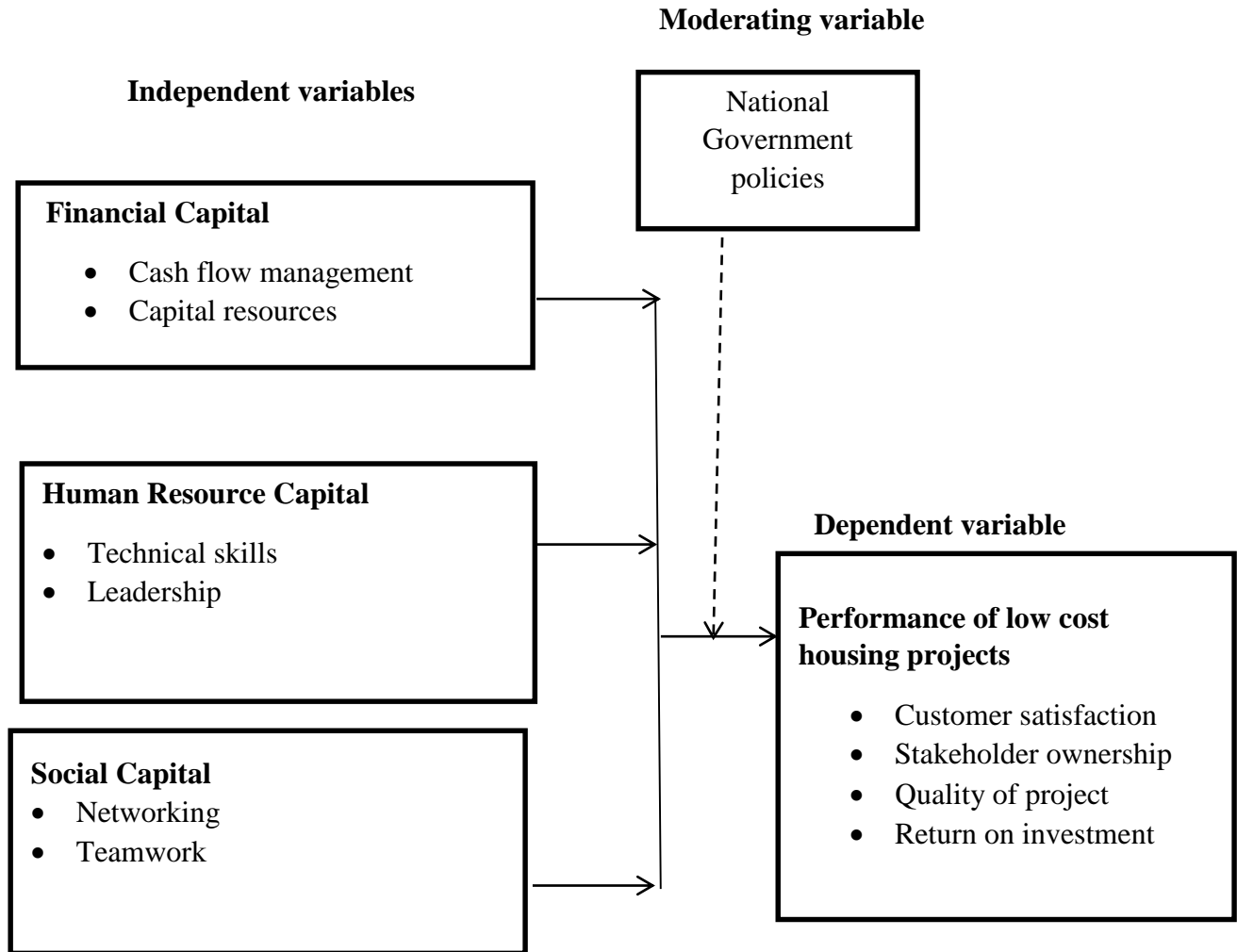


Figure 1: Conceptual framework

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

This chapter discussed the study methodology and highlighted research design, study population, sampling method, data collection tools and data analysis as well as presentation.

3.2 Research Design

The researcher applied descriptive survey research design. In this technique data collection was done by interviewing or questionnaire administration to sampled individuals (Orodho, 2003). This was preferable because the researcher was obtaining information on attitudes, opinions, and habits of people, as well as a range of educational and societal issues (Orodho and Kombo, 2002). Descriptive statistics aims at utilizing numbers to explain information or facts. Descriptive statistics are the properties of groups of numbers that reflect information.

3.3 Target population

Target population can be described as a group of people that intervention intends to conduct research in and craft conclusions there from. Target population consists of complete group of units that the research data is to be utilized to make inferences. We can postulate that the target population is restricted to those units for which study findings will be generalized. To have a cost-effective analysis, characteristics of the target population and any subgroups should have very clear description (Lavrakas, 2008). In this study the target population was the active stakeholders in implementation of affordable housing projects. They included County Government, Ministry of housing at national level, financial institutions directly involved in funding the projects

Table 3.1 Target Population

Designation	Number
County government officials	920
Ministry of housing Officials	84
Financial institutions	258
Total	1262

3.4 Sample Size and Sampling Procedure

Sampling procedure and sample size for this research was dictated by the following:

3.4.1 Sample Size

Kothari 2004 defines sample size as a sub-set of entire population which helps in giving a general view of the study population. Determination of sample size is the key to any researcher as it assists in bringing out reliable representation of the population. In descriptive survey study, the researcher used Krejcie and Morgan table of 1970. Moreover, a sample of 297 was ideal from the above target population of 1262. The key informants were sampled purposefully while the remaining population was selected using stratified random sampling.

Table 3.2: Total sample size for project beneficiaries

Designation	Sample size	Percentage %
County government officials	89	30
Ministry of housing Officials	128	43
Financial institutions	80	27
Total	297	100

3.4.2 Sampling Procedure

Study sample indicate number of participants selected from study population. The aim of sampling emanates from the fact that for a large target population it is not plausible to obtain data from the whole universe for accurate accomplishment of the study objectives. Sekaran (1992) and (Kothari, 2004) argue that sampling is deemed ideal to represent study population and to lead to similar results at lowest possible time and cost. The sample is drawn from the project site. Respondents were chosen using a stratified proportionate random sampling method which was unbiased way of dividing a heterogeneous population of the study into homogenous subgroups and then picking from each subset to ensure representativeness. Moreover, the true purpose of stratified random sampling was to attain the required representation of the population's various sub-groups.

According to Creswell & Creswell (2017), subjects are chosen in a manner that population's sub-groups are represented in the sample.

3.5 Research instruments

This study employed questionnaires to gather data. The data was collected from all the implementing partners and beneficiaries of affordable housing projects in Machakos town. The questionnaire was administered with a view of testing the rating of diverse attributes which enabled the researcher limit the total number of similar responses to achieve more diverse responses. Interview guide was also be used with the key informants to gain insight in the expert knowledge of the most significant players in the implementation of the projects. The research tool was keenly designed and was tested on few members of study population for improvement. Structuring of the research tool was done in diverse segments depending on the research objectives. The structuring was relevant in promoting the validity and accuracy of the data that was gathered. Drop-off and pick-up method (DOPU) was employed to administer the questionnaires. The interview guide was structured in a way that the study objectives were adequately captured and was administered face-to-face with the respondents as notes were taken on their responses.

3.5.1 Pilot testing of the research Instruments

To be able to achieve useful results using a questionnaire, there must be validity and reliability. Validity is defined as the ability of a questionnaire in actual sense test what it is intended to test. Reliability is a measure of relevance. According to Kumar (2005), Pilot testing involves subjecting the instruments to a test in a different study environment though enjoying related characteristics with population to be studied. 10 research tools were disseminated to the mock respondents who were randomly selected. After just a day, respondents were asked to respond to similar questions but would not get notification in advance. This helped in determining any variations in responses to the first as well as second test. Pilot testing is critical in research as it helps identify and correct vague questions as well as unclear instructions. Additionally, it gives an opportunity to get participants' suggestions and comments. This would lead to improving the efficiency of the instruments. The process may be repeated by the researcher till she or he is convinced of absence of variations or vagueness in the questions. For this study the alternative pilot area was done in Athi river town in Machakos County.

3.5.2 Validity of Research Instruments

Validity is defined as a meaningfulness and accuracy of inferences that emanate from study findings. It is the extent to which the findings from analyzed data represent phenomena being studied. Borg and Gall (1989) argue that validity means the extent to which a test will measure that which it claims to measure. Face validity is a case in which a question is misinterpreted or misunderstood. Cooper and Schindler (2006) suggest that face validity can be minimized by pre-testing instruments in view of clearing the ambiguous and unclear questions. Content validity is defined as the extent to which the used measure represents social construct. Content validity in this study was achieved through consulting experts in the field particularly the supervisor.

3.5.3 Reliability of Research Instruments

Kothari (2004) argues that reliability of a research instrument is gauged by how it provides consistent findings over duration of time. The test-retest method was employed in determination of the consistency of the questionnaires that was used. Reliability can also be stated as the degree to which specific instrument yield consistent findings at all the repeated trial. With this, authenticity of the findings obtained is ensured while avoiding any distortions. Content reliability was determined by the application of Cronbach's Alpha test whereby an amount of 0.7 and above was put into consideration.

3.6 Data Collection Procedures

In this study primary data was utilized. Primary data refers to the data gathered for the first time. Moreover, primary usage data is encouraged by Sounders, Lewis & Thornhill (2007). The type of data collected was determined by the research objectives. After defending the proposal successfully, the researcher obtained a research permit from NACOSTI. All the potential respondents were identified by their physical addresses and the researcher thereafter delivered the questionnaires to them for completion. The questionnaires were then collected at an agreed later time. For the key informants, the researcher booked appointments with each and physically visited them for the interviews. Notes were taken in shorthand regarding the responses given.

3.7 Data Analysis Techniques

Mugenda and Mugenda (2013) opine that it is impossible to interpret the raw data that has been gathered from the field. The data should undergo cleaning, coding, keypunching and be analyzed. The raw data was tabulated and analyzed for enhancement of clarity, with the support of SPSS

software- a computer generated program applied for purposes of statistical analysis and it has statistical presentation capability with inbuilt formulae for easy of interpretation. The qualitative data collected from key informants was analyzed by content analysis.

A multi-variant regression model was employed to determine comparative advantage of each independent variable. Regression model was presented as below:

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

Where;

Y is dependent variable (implementation of affordable housing projects). The coefficients

β_0 is constant

$\beta_1, \beta_2, \beta_3, \beta_4$ are slopes of regression equation.

X_1 is financial capital.

X_2 is Human resource.

X_3 Social capital

α is the error term assumed to be zero.

3.8 Ethical Issues

In the process of research, there are some obligations and considerations that researcher was bound to ensure. In preparation of the data collection all the organizations to participate were formerly requested for an opportunity to collect data. Formal letters were then written directed to the authorizing officers to allow and facilitate the process. The study objectives were clearly stated to dispel any misconceptions. Consent forms were prepared and given to the respondents to read and sign for the data collection to commence. The study targeted only those that have attained majority age. Confidentiality of the respondents was guaranteed throughout by not sharing individual responses in their raw form. Only aggregate data was shared.

3.9 Definition of Study Variables

Operational definitions of independent and dependent study variables are presented in the table below:

Table 3.1: Operational Definition of study Variables

Objective	Variable	Indicators	Measurement Scale	Method of Data Analysis
	Independent Variables	<ul style="list-style-type: none"> • Cash flow management • Capital resources 	Interval	Descriptive analysis Inferential Analysis
Influence of financial capital on implementation of Affordable Housing Projects	Financial capital			
Influence of Human resource capital on Implementation of Affordable Housing Projects	Human resource capital	<ul style="list-style-type: none"> • Technical skills • Leadership skills 	Interval	Descriptive analysis Inferential Analysis
Influence of Social capital on Implementation of Affordable Housing Projects	Social capital	<ul style="list-style-type: none"> • Networking • Team work 	Interval	Descriptive Analysis Inferential Analysis.
	Dependent Variable Implementation of Affordable Housing Projects	<ul style="list-style-type: none"> • Customer Satisfaction • Stakeholder ownership • Quality of the project • Return on investment 	Interval	Descriptive Analysis Inferential Analysis

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND DISCUSSION

4.0 Introduction

Chapter four dealt with data analysis, presentation and discussion of the data from the field. The data was cleaned, coded and entered in the SPSS software for the purposes of analysis. The presentation starts with the questionnaire return rate, demographic analysis of the respondents, analysis of the dependent and independent variables in terms of means, percentages and standard deviation. Regression analysis and test of the hypothesis is done at the end of this chapter in order to determine the relationship between the dependent and independent variable of the study.

4.1 Questionnaire return

The percentage of questionnaire return rate is determined by dividing the returned questionnaires with those which were given to the respondents then multiplied by 100%. The response rate is very important in this study as it gives the researcher to authority to make inferences from the data collected so long as it meets the threshold which has been put across by various researchers. In this study, the sample size was 297 and out of this sample size, 202 questionnaires were fully filled and returned translating to 68.01% which is approximately 68% return rate. This return rate is deemed adequate to make data analysis and inferences in accordance with Jack (2008) who observed that the goal is to have a rate above 60%.

4.2 Demographic information of the respondents

The demographic information of the respondents sought in this study includes the house which they belong to, gender orientation of the respondents and age of the respondents.

4.2.1 House which the respondents belong

In this category, the researcher sought to establish the house bloc in which the respondents belonged to. The respondents were given a questionnaire in which they were to tick the house bloc in which they belonged to. Their responses were tabulated in table 4.1

Table 4.1: Housing project to which you belong

Please tick the housing project to which you belong

House	Frequency	Percent
Kibuye	120	59.4
Anderson	82	40.6
Total	202	100.0

The results in table 4.1 shows that majority of the respondents were in Kibuye bloc with 120(59.4) and 82(40.6) live in Anderson house. The house in which the respondents live was sought to enable the research to distribute questionnaires uniformly in order to avoid being bias by giving many questionnaires to a bloc with few occupants.

4.2.2 Distribution of respondents by gender

The gender of the respondents sought was based on their sex orientation. The respondents were given a questionnaire and asked to indicate their gender by ticking their gender in the spaces provided. Their responses were tabulated in table 4.2

Table 4.2 Gender of the respondents

Please indicate your sex by ticking appropriately

Gender	Frequency	Percent
Male	170	84.2
Female	32	15.8
Total	202	100.0

The results in table 4.2 shows that 170(84.2) of the respondents were male and women were 32(15.8). The higher number of male respondents can be attributed to the fact that in the construction industry, men are the predominant in this sector even though women are now joining men in this sector. Still, it was noted that since these houses are meant for public servants only, majority men had left their wives at home or their wives are employed elsewhere hence do not live together.

4.2.3 Age of the respondents

The researcher sought to get the age of the respondents in order to establish their age distribution. The respondents were given a questionnaire with 5 categories in which they were to choose from. Their responses are given in table 4.3

Table 4.3: Age of the respondents

Please tick your appropriate age bracket

Age	Frequency	Percent
28-37 years	40	19.8
38-47 years	62	30.7
48-57 years	75	37.1
more than 58	10	5.0
Total	202	100.0

Results in table 4.3 shows that majority of the respondents 75(37.1) were aged between 48-57 years, 62(30.7) were between the age of 38-47 years, 40(19.8) were between the age of 28-37 years and the rest 10(5) of the respondents were aged 58 years and above. These findings show that majority of the people involved in the housing project are aged between 38-57 years of age.

4.3 Implementation of low-cost housing Projects.

In this study, implementation of low-cost housing project was considered as the dependent variable. The researcher sought to get opinion from the respondents on the implementation of this low-cost housing project and was given a questionnaire rated on a five likert scale where the respondents were to choose from. Opinions and attitude of individuals can be obtained through likert scale where the respondent is given a range of scale in which he/she can tick or indicate the extent to which they agree or disagree with statements. The respondents were given questions to respond to and this section presents analysis for the likert scale from the dependent variable.

Table 4.4 Implementation of low-cost housing project

Statement	S.D	D	N	A	S.A	M	S.D
	F	F	F	F	F		
	%	%	%	%	%		
There is a high number of housing units that are purchased under affordable housing projects in Machakos	20 (9.9)	110 (54.5)	10 (5.0)	57 (28.2)	5 (2.5)	2.59	1.076
The affordable housing projects in Machakos County are cost effective	20 (9.9)	59 (29.2)	88 (43.6)	20 (9.9)	15 (7.4)	2.76	1.015
There is timely completion in affordable housing projects in Machakos County	10 (5.0)	30 (14.9)	70 (34.7)	67 (33.2)	25 (12.4)	3.33	1.034
There is customer satisfaction resulting from affordable housing projects in Machakos County	15 (7.4)	45 (22.3)	40 (19.8)	62 (30.7)	40 (19.8)	3.33	1.231
Total Scores						3.60	0.926

From the table 4.4 show the following observations:

Majority of the respondents disagreed that there is high number of housing units that are purchased under affordable housing projects having a score of 110(54.5) and a mean of 2.59 and standard deviation of 1.076. The respondents pointed that Machakos was selected as a pilot project and thus the government constructed only three blocs with each bloc having 18 units translating to 54 units which might not be enough to cater for the ever-growing demand of houses.

“These houses were built by the national government in conjunction with the county government and this was a pilot study in which the government wanted to establish whether this project is viable and thus the issue of the units being of higher number is not satisfactorily because even these houses have not housed all the county staff meaning there is need for more houses”

Majority of the respondents 88(43.6) had a neutral opinion on the statement that the affordable housing projects in Machakos County are cost effective. Respondents pointed out that these houses even though are relatively cheap, other costs associated with the day to day running of the houses and compound such as garbage collection, cleaning services and repair amount to a reasonable amount of money which cannot be overlooked. *“You see these houses are relatively cheap compared to those others in the market but I can tell you the other costs such as garbage collection, water bills, electricity and minor repair do cost us some reasonable amount of money which in my opinion think it’s quite reasonable amount which cannot be excluded in the calculation of the rent paid but you see these houses are in a conducive environment and this is something we really appreciate and there is ample parking, so generally the project is good but for now I cannot tell you whether the houses are cheap or not. Maybe with time we will be able to quantify and have a unique figure.”*

On whether there is timely completion in affordable housing projects, majority of the respondents 70(34.7) were neutral on that statement. The respondents pointed out that the fact that these current houses have been completed in time could be so due to the fact the government was just doing a trial to see if the project is viable and so it is not easy to comment certainly that one the project is rolled out in the whole will be completed in a timely manner and this one given that the running of a large project like this in various counties can be demanding hence the project may either be completed within the stipulated time or there can be a time spill over due to various unforeseen factors.

Majority of the respondents 62(30.7) were in agreement with the statement that there is customer satisfaction resulting from affordable housing projects with a mean of 3.33 and a standard deviation of 1.231 whereby they pointed that the houses were situated in a serene area with gated community and security at the gate at all time, ample parking, plenty of water, clean environment and the units are spacious which serve the clients well.

Discuss along the way, bring other studies

4.4 Resource Mobilization and Implementation of Low-Cost Housing Project

Resource mobilization was identified as the independent variable in this study which influences the implementation of the low-cost housing project. The independent variable had three variables which were financial capital, human resource, and social capital. This section presents analysis for all these three variables from the data collected from the field.

4.4.1 Financial Capital and Implementation of Low-Cost Housing Project

Financial capital was the first variable which was identified to have an influence on how the low-cost housing project performed. The respondents were given positive statements where they were to give their opinion to the extent to which they agreed or disagreed with them, and the responses are given in table 4.5

Table 4.5 Financial capital

Statement	S.D	D	N	A	S.A	M	S.D
	F	F	F	F	F		
	%	%	%	%	%		
Project generate adequate funds to run operational cost of the project	15 (7.4)	147 (72.8)	20 (9.9)	20 (9.9)		2.254	1.112
There is adequate cash reserves to run the project	10 (5.0)	49 (24.3)	113 (55.9)	24 (11.9)	6 (3.0)	2.98	2.297
Books are kept appropriately and readily available	5 (2.5)	25 (12.4)	125 (61.9)	37 (18.3)	10 (5.0)	3.11	0.771
Project team has the financial management skills and knowledge	10 (5.0)	15 (7.4)	37 (18.3)	123 (60.9)	17 (8.4)	3.60	0.926
The project can borrow finances for expansion without any problem	22 (10.9)	73 (36.1)	40 (19.8)	52 (25.7)	15 (7.4)	2.83	1.152
Project can service loans and other financial commitments							
Total Scores						3.77	0.984

Results on financial capital indicate that majority of the respondents 147(72.8) disagreed with the statement that the project generate adequate funds to run operational cost of the project, 113(55.9) were neutral on the statement that there is adequate cash reserves to run the project and that books are kept appropriately and are readily available with 125(61.9). 73(36.1) of the respondents disagreed with the statement that the project can borrow finances for expansion without any problem. The respondents were for the view that since this is a national government project, the county government may find it difficult to borrow finances as the counties have to rely on national government until this program is decentralized to the counties that is the only time the county governments can borrow to expand the project. On whether the project can service loans and other financial commitments, the respondents were neutral to this statement with 80(39.6) even though the other responses were evenly distributed towards the positive side.

4.4.2 Human Resource Capital and Implementation of Low Cost Housing Project

Human resource capital was the second dependent variable which influences the implementation of low cost housing project. Respondents were given a questionnaire and asked to rate the statements on their own opinion. Their responses are presented in table 4.6

Table 4.6: Human resource capital

Statement	S.D F %	D F %	N F %	A F %	S.A F %	M	S.D
The county employees under housing project have the required knowledge and skills that produce economic potential for the completion of affordable houses	15 (7.4)	27 (13.4)	30 (14.9)	120 (59.4)	10 (5.0)	2.49	0.984
Employee implicit knowledge; employee intellect in terms of work at the housing sector	20 (9.9)		69 (34.2)	113 (55.9)	0	2.76	0.619
The project Leadership has leadership abilities, management skills, professional skills, problem-solving skills and creative abilities which are very important in running the project	10 (5.0)	8 (4.0)	132 (65.3)	52 (27.5)	0	3.12	0.695

Results in table 4.6 shows that majority of the respondents 120(59.4) agreed with the statement that the county employees under housing project have the required knowledge and skills that

There has been 10 39 20 95 38 3.55 1.196
improvement/accumulation of employee (5.0) (19.3) (9.9) (47.0) (18.8)
competence through education

Total Scores **2.88 0.864**

produce economic potential for the completion of affordable houses. The respondents pointed out that there were different personnel during the construction period which range from the unskilled to the skilled with their specific specializations. 113(55.9) agreed that employee implicit knowledge, employee intellect in terms of work at the housing sector. 132(65.3) of the respondents had a neutral opinion on the statement that the project Leadership has leadership abilities, management skills, professional skills, problem-solving skills and creative abilities which are very important in running the project. 95(47.0) of the respondents agreed with the statement that there has been improvement/accumulation of employee competence through education

4.4.3 Social capital and implementation of low-cost housing project

The researcher sought to establish the influence of social capital on the implementation of low cost housing project. The respondents were given questionnaire with a likert scale where they were to choose by ticking the appropriate option. Their responses are tabulated in table 4b .7

Table 4.7 Social capital

Statement	S.D F %	D F %	N F %	A F %	S.A F %	M	S.D
There is a great degree of collaboration among the stakeholders in implementation of affordable housing projects in Machakos County	0	44 (21.8)	123 (60.9)	35 (17.3)	0	2.66	1.157
There is a high level of dialogue among the stakeholders in implementation of affordable housing projects in Machakos County.	20 (9.9)	30 (14.9)	32 (15.8)	100 (49.5)	20 (9.9)	2.96	0.625
There is a great extent of coordination among the stakeholders in implementation of	5 (2.5)	35 (17.3)	97 (48.0)	65 (32.2)		3.10	0.766

affordable housing projects in Machakos County

There is a great extent of non-competition among the stakeholders in implementation of affordable housing projects in Machakos County.

15	30	25	99	23	3.52	1.151
(7.4)	(14.9)	(12.4)	(49.0)	(16.3)		

Total Scores	4.85	0.876
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From table 4.7, majority of the respondents 123(60.9) had a neutral opinion on the statement that there is a great degree of collaboration among the stakeholders in implementation of affordable housing projects. The respondents pointed out that since this is pilot study, it is early to make conclusions based on the speed under which the project took place. Respondents agreed that there is a high level of dialogue among the stakeholders in implementation of affordable housing projects in that there was constant consultation between the county government and the national government. 97(48.0) of the respondents had a neutral opinion on the statement that there is a great extent of coordination among the stakeholders in implementation of affordable housing projects with a mean of 3.10 and a standard deviation of 0.766

4.5 Inferential statistics

The inferential statistics was done to determine the relationship between the independent variable (resource mobilization) and the dependent variable (implementation of low-cost housing projects). The inferential statistics include model summary, analysis of variance ANOVA and regression analysis. The results are presented in table 4.8, 4.9 and 4.10 respectively.

Table 4.8: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.334 ^a	.112	.094	1.096

These results in table 4.8 show the manner in which this model fits the data which was collected from the field and analysed and it can help to fit the data into the equation. The R is .334^a and R squared is .112 meaning that R squared can be used to provide the predictive power of the model and this shows if used, it can provide 11.2% variations in the implementation of low cost housing project. This variation can be explained by the changes in financial capital, human resource capital and social capital.

Table 4.9: Analysis of Variance ANOVA

Model	Sum of Squares	Df	Mean Square	F	Sign.
Regression	29.772	4	7.443	61.96	.000
Residual	236.649	197	1.201		
Total	266.421	201			

The results in table 4.9 show that a P-Value of 0.000 shows that the model was significant at predicting the manner in which changes in financial capital, human resource capital and social capital could be used to bring change in the implementation of low-cost housing project. The F calculated is 61.96 which is greater than the critical one (1.467) at 5% significance level and this implies that the model was significant.

Table 4.10: Regression Coefficients

	Unstandardized		Standardized	T	Sig
	Coefficients		Coefficients		
	B	Std. Error	Beta		
(Constant)	0.4016	0.555		7.239	.000
Financial capital	0.229	0.770	0.214	2.967	.003
Human resource capital	0.124	0.085	0.112	1.473	.142
Social capital	0.210	0.064	0.124	3.269	.001

The results in table 4.10 show that when these results are used, the equation will be as follows:

$$Y=0.403+0.214X_1+0.112X_2+0.124X_3+ \varepsilon$$

These results review that independent variable would be held constant at zero, then the implementation of low-cost housing project in Machakos County would be 0.403. Also, a unit increase in financial capital would lead to 0.214 (21.4%) increase in the Implementation of low-cost housing project. The variable was significant since $p=0.028$ is less than 0.05; hence, null hypothesis that presumed that there was no significant influence of financial capital and implementation of low-cost housing project in Machakos County, was rejected.

A unit increase in human resource capital would lead to 0.112 (11.2%) increase in the implementation of low-cost housing project in Machakos County. The variable was significant since $p=0.007$ is less than 0.05; hence, null hypothesis that presumed that there was no significant influence of human resource capital and Implementation of low-cost housing project in Machakos County, was rejected

A unit increase in social capital would lead to 0.124 (12.4%) increase in the Implementation of low-cost housing project. The variable was significant since $p=0.002$ is less than 0.05; hence, null hypothesis that presumed that there was no significant influence of social capital and Implementation of low-cost housing project in Machakos County, was rejected

CHAPTER FIVE

SUMMARY OF FINDINGS, DISCUSSION, CONCLUSIONS, RECOMMENDATIONS AND SUGGESTIONS FOR FURTHER STUDIES

5.1 Introduction

Chapter five presents the summary of the findings from the analyzed data, discussion of the findings and triangulation of the findings to the literature review, recommendations and then suggestions for further studies.

5.2 Summary of the findings

The present study examined the influence resource mobilization on the implementation of affordable housing project in Machakos County, Kenya. This purpose was achieved through three research objectives and hypotheses. The linear relationships between variables were computed by means of Pearson's Correlation Method. Hypotheses were established through regression analysis at 95% confidence interval using F test. The ANOVA tested the models' fitness in estimating the dependent variables given the independent variables.

Results on financial capital indicate that majority of the respondents disagreed with the statement that the project generate adequate funds to run operational cost of the project, 113(55.9) were neutral on the statement that there is adequate cash reserves to run the project and that books are kept appropriately and are readily available with 125(61.9). 73(36.1) of the respondents disagreed with the statement that the project can borrow finances for expansion without any problem. On whether the project can service loans and other financial commitments, the respondents were neutral to this statement with 80(39.6) even though the other responses were evenly distributed towards the positive side.

Majority of the respondents agreed with the statement that the county employees under housing project have the required knowledge and skills that produce economic potential for the completion of affordable houses. They also agreed that employee implicit knowledge, employee intellect in terms of work at the housing sector. However, the respondents had a neutral opinion on the

statement that the project Leadership has leadership abilities, management skills, professional skills, problem-solving skills and creative abilities which are very important in running the project.

The third objective was to look at the influence of social capital on the implementation of low cost housing project. The results indicate that majority of the respondents had a neutral opinion on the statement that there is a great degree of collaboration among the stakeholders in implementation of affordable housing projects. Respondents agreed that there is a high level of dialogue among the stakeholders in implementation of affordable housing projects in that there was constant consultation between the county government and the national government. Respondents had a neutral opinion on the statement that there is a great extent of coordination among the stakeholders in implementation of affordable housing projects.

5.3 Discussion of the findings

This section presents discussion of the results from the data collected and analysed. The discussion is based on the three independent variables i.e financial capital, human resource capital and social capital.

5.3.1 Influence of financial capital on the implementation of affordable housing project

Financial capital was the first independent variable under this study. The following findings should in regression analysis show that financial capital has a significance influence on the implementation of the affordable housing project and it had the highest score. Descriptive statistics showed that the respondents disagreed with almost all the parameters that project generate adequate funds to run operational cost of the project and that project can borrow finances for expansion without any problem. The respondents noted that this project was just a pilot study, the government had budgeted for it and chances are high that the project was completed in time to show the donors that the project is visible. *“This project was completed within the stipulated time because it was a pilot study and the national government had allocated funds for it and so the project was completed in time. But this cannot be used to conclude that the project if rolled out in other counties will be the same because I think when it is down in all counties, the government will have to spread the little money they have to these projects and thus completion will be an issue still on whether the project can be able to generate enough money, I think it is very early for us to comment about this since this project was completed barely four months ago so if we comment on that issue basing our argument on this, then I might mislead you and that is why I have no comment*

on it but with time like two to three years, then we can comfortably access if the project can raise enough money and even the county be able to borrow money using them as the security ”

These findings are in agreement with those of Kusimo (2018) who noted that proper resource allocation by the resource allocation team helps keep projects on schedule at the same time ensuring the need for project activities is fulfilled and maximized. Since the national government reimbursed the money in time, there was good and efficient flow of materials and workers were paid in time and this made the project to be completed within the stipulated time and within the budget. The findings are also in agreement with Vivi Mary Elizabeth (2020) who did a study on the influence of monitoring and evaluation on performance of housing projects in Nairobi County and noted that resource allocation was very key for the project to be handed over on schedule over the project duration.

5.3.2 Influence of human resource capital on implementation of affordable housing project

Human resource plays a crucial role in the implementation of any project. The human resource includes both the skills and unskilled personnel who work hard to make sure the project is completed within the stipulated time. Analysed data showed that the respondents noted that county employees have the required skills that produce economic potential for the completion of affordable housing and that project leadership has the leadership abilities, management skills, professional skills, problem solving skills and creative abilities which are very important in running the project. The inferential statistics also showed that there is positive relationship between human resource capital and implementation of affordable housing project. *“This project was the most well-coordinated one I have ever managed if I may say. The governor himself would come here to see the progress of this project every two weeks and the county engineers never missed to be seen here for at most three days and this shows you how important this project was. The project was done by different people both skills and unskilled. The unskilled were the casuals whose job was just to provide materials near to the masons and then there were engineers such as electrical ones, those who were involved in plumbing works, landscaping and so much and so forth so I say without doubt that this project had the best group of human resource and this is why this project was completed within the time. I think if all other county and national projects would be coordinated like this, surely this country could be far”* These findings are in agreement with those of (Wirojanagud 2007), who noted that effective management of labour resources is one of the most critical functions affecting the performance of the construction industry. These findings are

also in line with those of Schallmo 2017, who said that among all strategies supporting the construction firm's flexibility and agility, only the development of human resources versatility is guaranteed to yield cost benefits.

5.3.3 Social capital and implementation of affordable housing project

Social capital focuses on stakeholders who may include the end users, project financiers and even the government. The study findings showed that there is positive relationship between social capital and implementation of affordable housing project. The respondents agreed that there is high level of dialogue among the stakeholders in implementation of affordable housing projects. *“This project was completed within the timeframe due to constant dialogue between the stakeholders and when the project was completed, all members of staff of both the national government and county government were notified and we had a meeting where we agreed on various matters touching on how these units will be rented and how they will be distributed so that no staff will be disadvantaged. This was done to ensure that there is openness and thus the houses were occupied through a competitive way and payment is uniform to all the tenants and this ensures that each occupant is satisfied. The tenants do collaborate very well with the management on the matters of managing the units like garbage collection, parking, security and keep the compound in a serene condition. This is something we are really proud of”*. These finding agrees with Morrow & Hansen (2004) who argued that with cognitive-based trust, “One party assesses the trustworthiness of another party by weighing the evidence embedded in both the attributes of the transaction and the characteristics of the other party(s) to the transaction.” Therefore, each client-project manager interaction presents an opportunity for cognitive-based trust to be either heightened or eliminated. Also these finding are in agreement with those of McAllister (1995) who asserted that cognitive-based trust is built on perceptions and self-interest as it pertains to implementation and accomplishments through direct dealings with a partner.

5.4 Recommendations

Based on the results from the data analysis and conclusions, this study recommends the following:

- i. The government needs to establish a link between the national government, county government and the financial institutions so that there can be a continued flow of financial resources/reserves which were found to have the highest influence on the implementation of housing project. Without firm financial resources, the project may be faced with

difficulty in its implementation, and this leads to what has been referred to as ghost project. The study observed that the respondents had no clear information concerning the books of account and whether they were kept appropriately and their readiness for access. These books are very important for they form the basis for accountability and thus, the banks should not be the only entities keeping these books but also each department in the county government needs to have a copy of the same.

- ii. Human resource forms the backbone for the implementation of any construction project. Even though the respondents agreed that there were highly qualified individuals who were working in this project, the respondents who had a contrary opinion such as disagree and strongly disagree should not be overlooked and thus the study recommends that the county government needs to put up mechanisms for training of the staff who are involved in the implementation of these projects. There is need for inductions for the employees for further career development in their fields.
- iii. Social capital is very important in the implementation of the housing project hence the good relationship between the stakeholders plays a key role on the continuation of the project. This study recommends vigorous consultative meetings among the stakeholders so that there is a constant briefing so that each stakeholder has first hand information on the progress of the project. There is also need to establish an office which will be liaising with the stakeholders in different levels so that there is constant flow of information in all the levels.

5.5 Suggestions for further study

- i. Since the pilot study was not done in Machakos County only, a similar study should be done in other counties where this affordable housing project was done so that the results can be compared with this one. This will give a broad view of the whole phenomenon.
- ii. There is need for a study to be done on monitoring and evaluation in order to answer some of the questions which respondents had neutral opinion such as whether the project can borrow and service their loans without a challenge.

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APPENDIX I: QUESTIONNAIRE

SECTION A: DEMOGRAPHIC INFORMATION

1. Please tick the Housing project to which you belong

(1) Kibuye (2) Anderson

2. Please indicate your sex by ticking appropriately

1) Male 2) Female

3. Please tick your appropriate age bracket

(1) 18 - 27years

(2) 28 -37years

(3) 38- 47years

(4) 48 -57 years

(5) More than 58

SECTION B: FINANCIAL CAPITAL

In this section, please rate the following statement using your own opinion

1)-Strongly Disagree 2)-Disagree 3)-Neutral 4)-Agree 5)-Strongly Agree

	Statements	SD	D	N	A	SA
		1	2	3	4	5
	Project generate adequate funds to run operational cost of the project					
	There is adequate cash reserves to run the project					
	Books are kept appropriately and readily available					
	Project team has the financial management skills and knowledge					

	The project can borrow finances for expansion without any problem					
	Project can service loans and other financial commitments					

SECTION C: HUMAN RESOURCE CAPITAL

In this section, please rate the following statement using your own opinion

1)-Strongly Disagree 2)-Disagree 3)-Neutral 4)-Agree 5)-Strongly Agree

	Statement	1	2	3	4	5
	The county employees under housing project have the required knowledge and skills that produce economic potential for the completion of affordable houses					
	Employee implicit knowledge; employee intellect in terms of work at the housing sector					
	The project Leadership has leadership abilities, management skills, professional skills, problem-solving skills and creative abilities which are very important in running the project					
	There has been Improvement/accumulation of employee competence through education					

SECTION D: SOCIAL CAPITAL

S In this section, please rate the following statement using your own opinion

1)-Strongly Disagree 2)-Disagree 3)-Neutral 4)-Agree 5)-Strongly Agree

	Statement	1	2	3	4	5
	There is a great degree of collaboration among the stakeholders in implementation of affordable housing projects in Machakos County					
	There is a high level of dialogue among the stakeholders in implementation of affordable housing projects in Machakos County.					
	There is a great extent of coordination among the stakeholders in implementation of affordable housing projects in Machakos County.					
	There is a great extent of non-competition among the stakeholders in implementation of affordable housing projects in Machakos County.					

SECTION E: IMPLEMENTATION OF AFFORDABLE HOUSING PROJECTS

In this section, please rate the following statement using your own opinion

1)-Strongly Disagree 2)-Disagree 3)-Neutral 4)-Agree 5)-Strongly Agree

	Statement	1	2	3	4	5
	There is a high number of housing units that are purchased under affordable housing projects in Machakos					
	The affordable housing projects in Machakos County are cost effective					
	There is timely completion in affordable housing projects in Machakos County					
	There is customer satisfaction resulting from affordable housing projects in Machakos County					

APPENDIX II: KREJCIE AND MORGAN TABLE

Table 3.1									
<i>Table for Determining Sample Size of a Known Population</i>									
N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	346
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	354
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	191	1200	291	6000	361
45	40	170	118	400	196	1300	297	7000	364
50	44	180	123	420	201	1400	302	8000	367
55	48	190	127	440	205	1500	306	9000	368
60	52	200	132	460	210	1600	310	10000	370
65	56	210	136	480	214	1700	313	15000	375
70	59	220	140	500	217	1800	317	20000	377
75	63	230	144	550	226	1900	320	30000	379
80	66	240	148	600	234	2000	322	40000	380
85	70	250	152	650	242	2200	327	50000	381
90	73	260	155	700	248	2400	331	75000	382
95	76	270	159	750	254	2600	335	1000000	384

Note: N is Population Size; S is Sample Size *Source: Krejcie & Morgan, 1970*

Table 4: Krejcie and Morgan table

APPENDIX III: LETTER OF TRANSMITTAL



UNIVERSITY OF NAIROBI
FACULTY OF BUSINESS AND MANAGEMENT SCIENCES
OFFICE OF THE DEAN

Telegrams: "Varsity",
Telephone: 020 491 0000
VOIP: 9007/9008
Mobile: 254-724-200311

P.O. Box 30197-00100, G.P.O.
Nairobi, Kenya
Email: fob-graduatestudents@uonbi.ac.ke
Website: business.uonbi.ac.ke

Our Ref: **L50/39211/2021**

30th August 2022

National Commission for Science, Technology and Innovation
NACOSTI Headquarters
Upper Kabete, Off Waiyaki Way
P. O. Box 30623- 00100
NAIROBI

RE: INTRODUCTION LETTER: GREGORY MUTUKU NTHENGE

The above named is a registered Master of Arts In Project Planning And Management candidate at the University of Nairobi, Faculty of Business and Management Sciences. He is conducting research on "**Resource Capacity And Performance Of Affordable Residential Housing Projects In Machakos County, Kenya**".

The purpose of this letter is to kindly request you to assist and facilitate the student with necessary data which forms an integral part of the Project.

The information and data required is needed for academic purposes only and will be treated in **Strict-Confidence**.

Your co-operation will be highly appreciated.

PROF. JAMES NJIHIA
DEAN, FACULTY OF BUSINESS AND MANAGEMENT SCIENCES

JN/pgf

APPENDIX IV: RESEARCH PERMIT



REPUBLIC OF KENYA



NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION

Ref No: **297820**

Date of Issue: **06/September/2022**

RESEARCH LICENSE



This is to Certify that Mr.. Gregory Nthenge Mutuku of University of Nairobi, has been licensed to conduct research in Machakos on the topic: RESOURCE CAPACITY AND PERFORMANCE OF AFFORDABLE RESIDENTIAL HOUSING PROJECTS IN MACHAKOS COUNTY KENYA for the period ending : 06/September/2023.

License No: **NACOSTI/P/22/20123**

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Director General
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