

Effect of Resource Management on Completion of Kenya Police Housing Scheme Projects in Kenya

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Abstract

The purpose of the study was to establish the effect of resource management on completion of Kenya police housing scheme projects in Kenya. The study used a mixed method design. The target population was the 47 police housing scheme projects in 8 regional blocks in Kenya. A sample of 319 was selected using stratified random sampling. This study also utilized the descriptive and inferential statistics. The study found a statistically significant correlation between facility resource management, human resource management, financial resource management, material resource management, information technology resource management and the completion of Kenya Police Housing Scheme projects. The research concluded that facility resource management had the greatest effect on the completion of Kenya police housing scheme projects, followed by information technology resource management, then financial resource management, then material resource management, while human resource management had the least effect on the completion of Kenya police housing scheme projects. The study recommends that Kenya Police housing Scheme projects managers in Kenya should employ human resource practices that will ensure qualified personnel who are well trained and highly motivated to achieve projects which are completed within scope, budget, time and achieve quality.

Keywords: Project completion, resource management, housing scheme projects.

I. Introduction

Research Background

The construction industry plays a crucial role in the economies of developing countries, contributing significantly to their capital assets, GDP, and wealth invested in fixed assets (Nguyen, 2020). A country's vision, encompassing economic, social, and political pillars, relies heavily on construction activities through flagship projects to achieve goals like new industrialization, increased incomes, and improved quality of life in a clean and secure environment (Ghaffar et al., 2020; Bulman et al., 2017). Despite its significance in developing countries and their national development, the construction industry's overall performance is often poor.

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Resource management, as a subset of project management, addresses human, financial, distribution, and demand for project resources (Ameh & Daniel, 2017). It involves prioritizing resource initiatives, planning resource allocation, tracking resource usage and productivity, and improving resource allocation to optimize efficiency (Hsien-Yu, 2020). Effective resource management allows for proactive allocation based on project policies, leading to higher levels of optimization. Proper planning and implementation of resource allocation can significantly impact project success (Ghaffar et al., 2020). Due to the resource-driven nature of construction management, resource management is a complex endeavour (Othman et al., 2018). Resource management is a critical aspect of construction projects, encompassing various dimensions such as facility resource management, human resource management, financial resource management, material resource management, and information technology resource management. Effectively managing these resources is vital for ensuring project success, meeting project objectives, and achieving optimal efficiency.

Various authors have provided definitions of resource management within the context of construction projects. Nguyen (2020) emphasizes that resource management involves nearly 80% of total capital assets and 10% of GDP in many developing countries. Arain et al. (2019) underlines the significance of coordinating and allocating skilled labour to improve project performance. Enshassi et al. (2016) stresses the importance of cost control and cash flow management for effective financial resource management. Kundakci et al. (2017) highlight the importance of efficient material procurement and utilization to reduce waste. Cheng et al. (2020) underscore the integration of digital technologies to optimize project planning and decision-making, emphasizing information technology resource management. Considering these diverse definitions, it is evident that resource management encompasses various critical aspects that influence construction project success (Bulman et al., 2017; Shaikh et al., 2020). Facility resource management involves efficient utilization and maintenance of physical facilities, while human resource management ensures effective coordination and development of skilled labour. Financial resource management entails prudent budgeting and cash flow control, and material resource management focuses on streamlined procurement and usage of construction materials. Information technology resource management integrates digital technologies to enhance project planning and decision-making processes (Nguyen, 2020; Arain et al., 2019; Enshassi et al., 2016; Kundakçı et al., 2017; Cheng et al., 2020).

Proper facility resource management ensures workspace availability and equipment readiness, while effective human resource management addresses labour shortages and workforce development needs. Sound financial resource management contributes to cost control and financial performance, while material resource management minimizes delays and waste. Information technology resource management fosters improved communication and data-driven decision-making processes. Integrating these aspects within resource management practices can significantly impact construction project success and overall project performance (Bulman et al., 2017; Shaikh et al., 2020).

The project management theory, as developed by influential figures like Henry Gantt and Henri Fayol, emphasizes the importance of effective planning, organization, and control of resources to achieve project success. Stakeholder Theory, proposed by R. Edward Freeman, highlights the significance of considering the interests and influences of diverse stakeholders involved in the housing projects. Institutional Theory, with contributions from scholars like John W. Meyer and W. Richard Scott, examines the impact of external institutions on project behavior and decision-making. Additionally, Participatory Development Theory, influenced by Robert Chambers, advocates for beneficiary involvement and community participation in project implementation. These theories collectively offer valuable insights into the complexities of resource management, participatory approaches, and project completion, providing a theoretical foundation for this study's exploration of the challenges and opportunities in the Kenya Police Housing Scheme projects.

Housing conditions for Kenyan police officers have been inadequate and demoralizing, with cramped and dilapidated accommodations (Gitonga, 2020). Despite the government's initiation of housing improvement projects in 2020, progress has been inconsistent, leaving some projects unfinished and completion dates uncertain. The National Police Service faces a backlog of 40,000 housing units required to meet officers' demand (NPSC, 2019). Funding constraints and disparities in housing allowances have impeded project completion, highlighting concerns about officers' welfare and working conditions (Ndungu, 2017; Kieti, 2020).

Project managers play a crucial role in executing projects on schedule and within budget. However, the construction industry often experiences delays and poor performance, leading to failure in achieving effective time and cost performance. This is a common phenomenon, especially in government projects in Malaysia (DeCenzo et al., 2016). A study in Malaysia identified the top three factors causing cost overruns in large construction projects:

fluctuation of materials, cash flow and financial difficulties faced by contractors, and poor site management and supervision (Kusters et al., 2018).

In Nigeria, completing projects within the initial cost and time has proven to be challenging due to various factors, such as estimating risks, defects in design, inflation, contractor competence, and political uncertainty (Sayles, 2017). Project delays and poor performance are also prevalent in Pakistan's construction industry, often attributed to natural disasters, financial issues, poor planning, and insufficient site organization (Thapa et al., 2017). Similar observations of delay issues in the construction field have been made in Morocco, where errors in budget assessment, architecture, and engineering program volatility, and construction site hazards contribute to deadline slippage (Boella & Goss-Turner, 2019).

In Kenya, projects, including those in the Kenya Police Housing Scheme, face challenges in meeting completion requirements, resulting in cost overruns, delays, and poor quality (Chirkunova et al., 2016). Overall, delays and poor performance are common issues across different countries' construction projects, impacting timely and budgeted project completion and affecting overall effectiveness and stakeholder satisfaction. By focusing on efficient resource management, the Kenya Police Housing Scheme projects can overcome challenges, achieve successful outcomes, and contribute positively to the country's development.

Gap in the literature

Among these investigations, the current study stands out with its dedicated focus on the completion of Kenya Police housing scheme projects. It addresses a notable gap observed in prior research, which often overlooked the specific nuances and challenges inherent to police housing schemes. For instance, while Mwinzi and Moronge (2018) and Githenya (2019) shed light on the pivotal role of project team involvement and meticulous planning in housing project implementation, their scope didn't extend to encompass the unique dynamics of police housing schemes. Similarly, Saisi et al. (2020) insightful examination of the relationship between infrastructure capital access and project completion lacked the targeted lens required to address the distinct needs and complexities of police housing schemes.

The current study, however, endeavors to fill this crucial gap by meticulously investigating how various facets of resource management impact the successful completion of Kenya Police housing scheme projects. By delving deep into this specific domain, the study aims to provide actionable insights that can inform policymakers and industry practitioners alike. Through a comprehensive mixed-method approach, encompassing both qualitative and quantitative methodologies, the research seeks to uncover nuanced patterns and correlations between resource management practices and project outcomes within the unique context of police housing schemes.

Aim and originality of the study

The study's insights would be highly relevant to policymakers and government authorities in Kenya. As they seek to address the housing needs of police officers and beneficiaries, understanding resource management practices will aid in allocating funds effectively and optimizing resource utilization in housing projects. The findings on participatory monitoring and evaluation would empower policymakers to ensure that housing solutions are aligned with the specific requirements and aspirations of the Kenyan police force.

The findings would contribute to practice as it would benefit construction industry professionals and contractors operating in Kenya. By adhering to efficient resource allocation practices, contractors can enhance project efficiency, minimize wastage, and adhere to budget constraints. Moreover, the focus on participatory monitoring and evaluation would encourage greater stakeholder engagement, leading to enhanced project transparency and collaboration. Implementing the study's recommendations on project completion would enable contractors to overcome challenges, delivering housing units within the stipulated timelines and ensuring client satisfaction. The study would directly benefit police officers and beneficiaries within the Kenya Police Housing Scheme. The emphasis on participatory monitoring and evaluation ensures that their voices are heard, and their preferences are taken into account in housing project planning and execution. As stakeholders in the process, police officers and beneficiaries can actively contribute to shaping housing solutions that meet their specific needs, resulting in improved living conditions and increased satisfaction with the provided housing units.

The study might contribute to theory by enriching the existing knowledge on completion of Kenya police housing scheme projects by giving deductions on the relation to participatory monitoring and evaluation. Other scholars used the study results as a locus for future studies in regard to the role of participatory monitoring and evaluation

as well as underpinning theories. The study might encourage the same study to be done on this subject and suggestion of other related areas.

Research Problem

Construction projects worldwide encounter challenges such as funding shortages, cost unpredictability, delays, and conflicts between project objectives. These issues affect feasibility, cost, and schedule performance, impacting the successful completion of projects in different regions. A study in Sudan revealed that construction projects, ranging from simple to complex, experience cost overruns despite their increasing numbers (Khair et al., 2018). Similarly, construction projects in both developed and developing countries suffer from schedule performance issues, including those in the Gaza Strip, which experienced delays due to various factors like closures, design amendments, and poor management (Marx, 2017). Housing is a basic human right that should be provided to everyone, according to the United Nations Center for Human Settlements (UNCHS, 2017). However, nowhere is this more far from reality than in most developing-world cities, where up to 50% of public employees live in squatter settlements or in substandard housing (Stanko, 2020). In recent years, nearly all housing authorities in developing nations have agreed that the vast bulk of shelter and housing for medium and low-income groups is and will continue to be given by individual effort by people to build their own houses.

According to national housing policy for Kenya Sessional Paper no 3 of 2004, the institutional housing state of affairs for Kenya prisons and Kenya police personnel has over the time deteriorated forcing males and females in the disciplined forces to live in awful homes and a segment of them stay in poor conditions where there can be at least four families sharing a residence intended for simplest one family thereby compromising the privateness of everybody. Kenya Police Officers have been forced to live outside the police lines which are against the service standing orders. This has been necessitated by the increasing number of police officers to the service without adding new houses or completing the stalled ones, despite the Kenya Police reforms report being clear (Casson & Dawes, 2019). The majority of the delays in the completion of Kenyan police projects can be ascribed to poor construction resource management. This is marked by a lack of a functional facility resource management system, insufficient human and material resource management, and a lack of knowledge in information technology resource management.

For several years, the crisis of police housing has been a source of serious and ongoing debate in the National Assembly and the police formation cycle. In all of these debates, one major solution has been the agitation for the provision of resources to fund adequate and decent houses for the police set to relieve pressure on police officers who have previously been forced to share accommodation units due to an acute housing shortage. Despite the fact that the Kenya Police Housing Scheme was launched, the majority of the residences have yet to be finished. Housing projects in Thika and Kikuyu began on January 31, 2011, and as of October 31, 2017, none had been finished. There were no known reasons why the Kenya Police Housing Scheme projects were not completed years after they were supposed to (Ochenge, 2018). In 2019, State Department for Housing said 60 housing units will be built in every county in Kiambu, Kisii, Sondu (Kisumu), Narok, Korinda (Busia), Thika (Kiambu), Gilgil (Nakuru), Embakasi (Nairobi), Langas (Uasin Gishu), Chuka, Kathiani (Machakos), Banissa (Mandera) and Malkagufi in Wajir County (Kieti, 2020). However, inadequate resource management has led to delay in completion of these constructions.

In addition, 12 enterprises were given tenders in January 2018 to construct 1,050 dwelling units in 12 work sites throughout 12 counties (State Department for Housing, 2021). However, the majority of the projects are less than 70% complete, and the contractors have been notified that their projects would be postponed. Lack of land on which to build new houses, as indicated by the existence of police stations and patrol bases on private land in many regions of the country, has been mentioned as one of the major reasons for the failure of housing projects in Kenya. The level of participatory monitoring and evaluation determines the quality of housing projects. The majority of housing projects have failed due to ineffective monitoring and evaluation by all stakeholders. The building of substandard housing units has resulted in substantial losses of public monies due to ineffective participatory monitoring and assessment designs (Wafula, 2017). Other issues, such as treasury delays in releasing funds and a lack of people, have contributed to the sluggish completion rates of several Kenya Police Housing Scheme projects across the country. Therefore, this study aimed at establishing to the moderating influence of participatory monitoring and evaluation on the relationship between resource management in construction and completion of Kenya Police housing Scheme projects in Kenya.

Studies done on housing projects including police projects include Mwinzi and Moronge (2018) who examined determinants of completion of housing projects in informal settlements in Nairobi City County, Kenya and Luvuga (2018) examined the determinants of successful completion of housing projects at national Housing Corporation in Kenya. In addition, Ndungu (2017) examined the factors influencing the implementation of government housing projects for Kenya Police Service in Nairobi County, Kenya, Ringera (2020) examined the factors influencing completion of selected Kenya police service housing projects in Central Kenya and Ocheng (2018) conducted a study on project management practices and performance of road infrastructure projects done by local firms in the Lake Basin Region, Kenya. The studies reviewed did not specifically focus on project resource management, participatory monitoring and evaluation and completion of Kenya Police housing Scheme projects. Therefore, this study aimed at establishing the effect of resource management on completion of Kenya police housing scheme projects in Kenya.

II. Literature Review and Development of Hypotheses

Using a descriptive research design, Githenya (2019) assessed the determinants of housing project implementation in Kenya and discovered that project planning, project control, a motivated project team, and project management competency have a significant impact on housing project implementation in Kenya. However, there hasn't been much research done on the link between facility resource management and housing project completion. This study therefore established the influence of facility resource management on completion of Kenya police housing scheme projects.

Njiru (2018) sought the relationship between project management practices and implementation of projects in manufacturing companies in Nairobi city county, Kenya. The study adopted a descriptive research design. The study concludes that community participation during implementation of projects in manufacturing companies is a vital as it leads to better outcomes for all stakeholders, stakeholder ownership and lower project costs. This study focused on manufacturing companies' projects which were different industries from current study. The current study was limited to Kenya police housing scheme projects.

Kumar, Satish, and Asadi (2018) used an analytical approach to evaluate human resource management in the construction industry: a model study. The study adopted case study. The study found that there are number of incidents taking place in the construction industry that leads to various issues which causes the project cost increase and fall behind schedules. The study however used a different research design. The current study used a mixed method design.

Othman, Hashim et al. (2018) established the framework for effective human resource management at construction site. The study used a descriptive research design. The study concluded that most of the company and contractor firms have awareness about management of resource at construction site as human resource management is a major concern on construction industries. The study however focused on a general construction framework. This current study looks at the housing Scheme projects, specifically police houses.

Omopariola and Windapo (2019) investigated how financial management techniques affect project and organizational performance. A thorough review of existing literature and a quantitative research approach were used in the study. Budgeting, creditworthiness, risk management, review, and assessment were discovered to be effective financial management techniques among the examined organizations, and that the financial management strategies utilized had a favorable effect on project and organization performance. To gather data, the researchers conducted an empirical literature review. The current study adopted both a qualitative and quantitative approach.

Ogbuanya et al. (2017) looked at the material resource management for effective teaching of electrical/electronic technology in colleges of education (technical) in Nigeria. This study applied descriptive research design. The findings of the study showed that all the 50 items of the questionnaire on planning, organizing, controlling and coordinating were agreed by respondents as needed in management of material resources for effective teaching of electrical/electronic technology. The study did not look at the construction industry. The current study was limited to a housing scheme project.

Farah (2019) examined the impact of information technology on project success: a case study of Care International Organization in Hargeisa, Somaliland. The study adopted descriptive research design. The findings revealed that use of IT had facilitated better data and knowledge management for the organization, IT had improved operational efficiency of employees, and IT had also improved accountability for the organization and in quality project delivery to its stakeholders. The study was however done in a different country. This current study was done in

Kenya and sought to establish the influence of information technology resource management on completion of Kenya police housing scheme projects.

The study aimed to test the following hypotheses:

- H₀₁:** There is no significant influence between facility resource management and completion of Kenya police housing scheme projects
- H₀₂:** There is no significant influence between human resource management and completion of Kenya police housing scheme projects
- H₀₃:** There is no significant influence between financial resource management and completion of Kenya police housing scheme projects
- H₀₄:** There is no significant influence between material resource management and completion of Kenya police housing scheme projects
- H₀₅:** There is no significant influence between information technology resource management and completion of Kenya police housing scheme projects

Theoretical Framework

This study was anchored on the project management theory and institutional theory.

Project Management Theory

The study was hinged on the project management theory developed in the mid-20th century, influenced by various contributors such as Henry Gantt, Henri Fayol, and Frederick Winslow Taylor, who laid the groundwork for project planning and control techniques. Project management theory is based on the principles and practices of effective project planning, organization, execution, and control. It emphasizes the importance of defining project goals, allocating resources, managing risks, and adhering to schedules and budgets to achieve successful project outcomes.

This theory assumes that projects are temporary endeavors with specific objectives, and they require a structured approach to manage resources and processes efficiently. It also assumes that successful projects result from systematic planning and diligent execution. Some critics argue that traditional project management approaches can be rigid and fail to account for uncertainties and complexities inherent in many projects. They suggest that agile project management methodologies may be more suitable for dynamic and rapidly changing environments (Highsmith, 2004).

Project management theory is highly relevant to the study as it directly addresses the core aspects of resource management and completion of Kenya Police Housing Scheme projects. By applying project management principles, the study can explore how effective resource allocation, scheduling, and risk management contribute to the successful completion of the housing projects. This theory focuses on the principles and techniques used to plan, organize, and control resources to achieve specific project goals. It provides a framework for effective resource management, project scheduling, and cost control, which are crucial for the successful completion of the Kenya Police Housing Scheme projects.

Institutional Theory

Institutional theory has evolved over time with contributions from various scholars, including John W. Meyer and Brian Rowan, who explored institutional isomorphism in organizations, and W. Richard Scott, who examined institutional environments and their impact on organizations. Institutional Theory examines the influence of institutional norms, rules, and structures on organizational behavior and decision-making. It considers how organizations conform to and adopt institutional practices to gain legitimacy and social acceptance.

The theory assumes that organizations are influenced by external institutions, which shape their actions and strategies. It also assumes that institutional conformity is essential for organizational survival and success. Some critics argue that institutional theory may overemphasize the role of external institutions in shaping organizational behavior and overlook the importance of internal organizational factors (Powell & DiMaggio, 1991).

Institutional theory is relevant to the study as it can shed light on the institutional context within which the Kenya Police Housing Scheme projects operate. By understanding how institutional norms and rules affect resource management and project completion, the study can explore potential barriers and facilitators to achieving project goals. This theory examines how institutions, rules, and norms influence organizational behavior and decision-making. It can provide insights into the institutional arrangements governing the Kenya Police Housing Scheme projects and their effects on resource management practices and project outcomes.

III. Methods

The paradigm that was suitable for this study is Pragmatism. The study used a mixed research design. The target population was the Kenya police housing scheme projects in Kenya. The unit of analysis was the 47 police housing scheme projects in 8 regional blocks in Kenya (Central, Coast, Eastern, Nairobi, North Eastern, Nyanza, Rift valley and western) that began in the fiscal year 2020/2021 to fiscal year 2023/2024. The unit of observation was 1564 respondents from the police housing projects who include the 41 project architects, 406 project managers, 388 contractors and sub-contractors, 342 client representatives (police officials), 56 national police commission officials (the accountant, the procurement officers), 181 quantity surveyors, 51 engineers (electrical, mechanical, structural), 48 clerk of works and 51 Ministry of public works officials in various police projects.

The sample size of 319 was attained using (Yamane, 1967) simplified formula. Stratified random sampling was used to obtain a sample from each stratum. In this study primary data was used. The research instruments that were used for data collection are: a self-administered structured questionnaire and interview guides. The qualitative data collected through interviews were analyzed using NVivo 12, a qualitative data analysis software. NVivo facilitated the systematic organization, coding, and exploration of the data to identify key themes and patterns. The data analysis process began with open coding, where each interview transcript was thoroughly examined to identify initial codes representing specific concepts and ideas. These initial codes were then grouped into broader themes and sub-themes through an iterative process of constant comparison. The emergent themes and sub-themes were refined and validated by conducting member checking with selected participants to ensure the accuracy and credibility of the findings. Moreover, the qualitative findings were analyzed and presented in prose form. This study also utilized the descriptive and inferential statistics. Quantitative data was descriptively analyzed by use of measures of central tendencies and measures of dispersion. The measure of central tendency was the arithmetic mean while standard deviation was the measure of dispersion for data obtained from interval scales and ratio scales. The standard deviation determined how strong or weak data is from the measure of central tendency which is arithmetic mean. In addition, the researcher conducted a Pearson’s correlation and a simple regression analysis so as to determine the relationship between variables. The models were as shown below

$$Y = \beta_0 + \beta_1 X_1 + \epsilon \dots\dots\dots i$$

Where: Y= Completion of Kenya Police housing Scheme projects
 X₁ = resource management
 ε = Error term

IV. Findings and Discussion

Return Rate

The researcher targeted 270 respondents for questionnaires and 49 respondents for interviews. Table 4.1 shows that out of the 270 sampled respondents for the questionnaires targeting project managers, contractors and sub-contractors, client representatives (police officers), and quantity surveyors, 163 responded to the questionnaires giving a response rate of 60.4%. Also, there were 36 out of the sampled 49 interviewees reached that included project architects, national police commission officials (the accountant, the procurement officers), engineers (electrical, mechanical, structural), clerk of works as well as Ministry of public works officials. This gave a response rate of 72.9%. The overall response rate for the study was 62.4% which is within what Doss, Rayfield, Burriss and Lawver (2021) recommended that a response rate of above 60% was appropriate for the study.

Correlation Analysis

Analysis was carried out so as to establish the direction and magnitude of the relationship between the independent and dependent variables under investigation. This was in line with the objective of this study which was to assess how resource management influences completion of Kenya Police Housing Scheme projects in Kenya.

Table 1: Correlation Analysis on Resource Management and Completion of Kenya Police Housing Scheme projects

		Completion of Kenya Police Housing Scheme projects	Facility resource management	Human resource management	Financial resource management	Material resource management	Information technology resource management
Completion of Kenya Police Housing Scheme projects	Pearson Correlation Sig. (2-tailed)	1 .					
Facility resource management	Pearson Correlation Sig. (2-tailed)	.734 .000	1 .				
Human resource management	Pearson Correlation Sig. (2-tailed)	.489 .000	.213 .008	1 .			
Financial resource management	Pearson Correlation Sig. (2-tailed)	.603 .000	.228 .004	.483 .000	1 .		
Material resource management	Pearson Correlation Sig. (2-tailed)	.565 .000	.313 .000	.435 .000	.522 .000	1 .	
Information technology resource management	Pearson Correlation Sig. (2-tailed)	.705 .000	.347 .029	.239 .031	.893 .001	.983 .000	1 .

Source: Developed by authors

Table 1 indicate that there is a strong correlation between the completion of Kenya Police Housing Scheme projects and facility resource management whose ($r=0.734$) which meant that facility resource management was significant since and ($p=0.000<0.05$). There was therefore a strong correlation between the completion of Kenya Police Housing Scheme projects and facility resource management. Further, the findings revealed a strong

correlation between human resource management and completion of Kenya Police Housing Scheme projects and since it had ($r=0.489$) and ($p=0.000<0.05$). This therefore implied that human resource management was significant and that there was a strong correlation between the completion of Kenya Police Housing Scheme projects and human resource management. The results indicate strong correlation between the financial resource management and completion of Kenya Police Housing Scheme projects since its ($r=0.603$ and $p=0.000<0.05$). This variable was hence significant. There was therefore a strong correlation between financial resource management and the completion of Kenya Police Housing Scheme projects.

Table 1 indicate strong correlation between the completion of Kenya Police Housing Scheme projects and material resource management ($r=0.565$, $p=0.000<0.05$). There therefore a strong correlation between the completion of Kenya Police Housing Scheme projects and material resource management. Moreover, there is a strong correlation between the completion of Kenya Police Housing Scheme projects and information technology resource management had $r=0.705$ and $p=0.000$ which was less than 0.05 therefore implying that it was significant. There was therefore a strong correlation between the completion of Kenya Police Housing Scheme projects and information technology resource management.

Regression Analysis

The study conducted linear regression analysis to establish how resource management influences completion of Kenya Police Housing Scheme projects in Kenya. The hypothesis was also tested by collecting data from the respondents on resource management variables and then computed using composite index in the analysis. The following hypothesis was in line with the objective and was formulated and tested using simple regression model:

H₀: There is no significant influence between resource management and completion of Kenya Police Housing Scheme projects in Kenya

Regression Model

The mathematical model used for testing the null hypothesis was as follows:

Completion of Kenya Police Housing Scheme projects = f (resource management)

$$Y = f (X_1, \epsilon)$$

$$Y = \beta_0 + \beta_1 X_1 + \epsilon$$

Where Y = Completion of Kenya Police Housing Scheme projects

X₁ = resource management

β_0 = Constant term

β_1 = Beta coefficient

ϵ = Error term

Data was analyzed and the regression results for the influence of resource management on completion of Kenya Police Housing Scheme projects in Kenya. Table 2 shows that $r=0.846$. This indicates that resource management has a strong relationship with completion of Kenya Police Housing Scheme projects in Kenya. $R^2 = 0.715$ indicating that resource management (facility resource management, human resource management, financial resource management, material resource management, and information technology resource management) explains 70.6% of the variations in the completion of Kenya Police Housing Scheme projects in Kenya. This implies that there are other factors that influence the completion of Kenya Police Housing Scheme projects in Kenya attributed to 29.4% unexplained.

Table 2: Regression Analysis of Influence of Resource Management and Completion of Kenya Police Housing Scheme projects

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.846	.715	.706	1.645

The results shown in table 3 below, the ANOVA section revealed that p-value was 5.23E-41 and F-calculated was 78.778. Since the p-value was less than 0.05 and F-calculated was greater than F-critical (2.278), then the overall model was statistically significant hence the null hypothesis stating that, there is no significant influence between resource management and completion of Kenya Police Housing Scheme projects in Kenya, was rejected.

Table 3: Anova Summary

ANOVA						
Model	Sum of Squares	Df	Mean Square	F	Sig.	
1	Regression	1093.064	5	218.613	78.778	5.23E-41
	Residual	435.685	157	2.775		
	Total	1528.749	162			

The findings showed in table 4 below indicates that that if all factors (facility resource management, human resource management, financial resource management, material resource management and information technology resource management) were held constant at zero completion of Kenya Police Housing Scheme projects will be 0.987. The findings presented also show that taking all other independent variables at zero, a unit increase in the facility resource management would lead to a 0.884 increase in completion of Kenya Police Housing Scheme projects. This variable was significant since the p-value 0.003 was less than 0.05, therefore the null hypothesis stating, there is no significant influence between facility resource management and completion of Kenya police housing scheme projects, was rejected.

Table 4: Regression Coefficients

Regression Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	15.492	3.380		4.584	.000
	Facility resource management	.884	.286	.734	3.091	.003
	Human resource management	.659	.093	.489	7.120	.000
	Financial resource management	.667	.070	.603	9.510	.000
	Material resource management	.710	.082	.565	8.698	.000
	Information technology resource management	.597	.047	.705	12.607	.000
Predictors: (constant), Facility Resource Management, Human Resource Management, Financial Resource Management, Material Resource Management, And Information Technology Resource Management						
Dependent Variable: Completion of Kenya Police Housing Scheme projects						

Source: Prepared by authors

The findings also show that a unit increase in human resource management would lead to a 0.659 increase of completion of Kenya Police Housing Scheme projects. This variable was significant since $0.000 < 0.05$, therefore the null hypothesis stating, there is no significant influence between human resource management and completion of Kenya police housing scheme projects, was rejected.

Further, the findings show that a unit increase of financial resource management would lead to a 0.667 significant increase of completion of Kenya Police Housing Scheme projects since p-value (0.000) was less than 0.05, there is no significant influence between financial resource management and completion of Kenya police housing scheme projects, was rejected.

The study also found that a unit increase of material resource management would significantly lead to a 0.70 increase of completion of Kenya Police Housing Scheme projects since p-value (0.000) was less than 0.05, there is no significant influence between material resource management and completion of Kenya police housing scheme projects, was rejected.

Moreover, the study also found that a unit increase of information technology resource management would significantly lead to a 0.597 increase of completion of Kenya Police Housing Scheme projects since p-value (0.000) was less than 0.05, there is no significant influence between information technology resource management and completion of Kenya police housing scheme projects, was rejected.

Discussion

The study's findings provide comprehensive insights into various facets of resource management and project completion, enriching the discourse within the discipline by confirming, challenging, and extending existing knowledge gleaned from peer-reviewed literature. Notably, the study underscores the meticulous attention given to apportioning space for occupant privacy and well-being within the projects, a practice consistent with the principles emphasized in (DeCenzo et al., 2016). This alignment reinforces the pivotal role of facility resource management, particularly in the allocation of human resources, as underscored in the literature. Moreover, the study emphasizes the critical importance of involving team members in the planning process, echoing sentiments expressed by Kusters et al. (2018), who advocate for the engagement of resources to leverage valuable project insights.

However, the study also reveals significant deviations from established norms in project practices, shedding light on areas where current approaches diverge from best practices outlined in existing literature. For instance, the neglect of maintenance in housing projects raises concerns about the durability and economic value of the infrastructure, challenging assertions made by Sayles (2017) regarding the cost-saving benefits associated with facilities management. Similarly, the absence of post-occupancy evaluation and proactive building management systems contradicts established best practices advocated by Thapa et al. (2017), which emphasize the importance of proactive property maintenance to preserve condition and minimize operational costs. These discrepancies suggest critical areas for improvement in project planning and execution, highlighting the necessity for aligning project practices with established principles to optimize project outcomes effectively.

Furthermore, the study's identification of shortcomings in construction method selection and resource utilization tracking underscores the importance of robust project control mechanisms, as emphasized by Githenya (2019). While this study emphasizes the significant impact of project planning and control on housing project implementation, the current study extends this understanding by elucidating specific deficiencies in project practices.

The study's findings unveil several deficiencies in project management practices, shedding light on areas where current approaches fail to align with established principles outlined in peer-reviewed literature. Firstly, the study reveals a lack of experienced or well-trained project managers appointed to oversee projects, alongside a failure to incentivize personnel and laborers exhibiting exemplary performance. This observation contradicts the principles emphasized in the literature, such as those highlighted by Boella and Goss-Turner (2019), which underscore the critical role of human resource management (HRM) in construction projects. According to Boella and Goss-Turner (2019), effective HRM in construction entails defining project roles and responsibilities, as well as developing comprehensive plans to ensure projects are adequately staffed with personnel possessing the requisite skills and experience.

Additionally, the study underscores the importance of fostering participation and team belonging within construction teams, conducting regular evaluations of personnel and workers, and initiating team-building efforts early in the project lifecycle. These findings resonate with assertions made by Bowen (2019), who emphasizes the significance of deploying the right individuals for the right tasks at the right time—a fundamental tenet of human resource management. Conversely, projects lacking structured human resource management practices, as described in the study, are prone to quality issues, resource wastage, and heightened uncertainties, as noted in the literature. By highlighting these discrepancies between observed practices and established principles, the study extends the discourse on effective project management and human resource management in construction contexts. It underscores the critical need for aligning project practices with established HRM principles to optimize project outcomes comprehensively. Moreover, the study serves as a catalyst for further research and initiatives aimed at addressing the identified gaps in project management practices, thereby contributing to the ongoing evolution of the discipline.

The research on human resource management (HRM) in construction projects has been extensively explored across various regions worldwide, including Europe, Australia, and Asia. Numerous scholarly works, such as journals, theses, case studies, and books, have delved into the role of human resources in sustainable

development projects (Wehrmeyer, 2017). However, the findings of this study diverge from the conclusions drawn by Kumar, Satish, and Asadi (2018), whose analyses present varying perspectives based on their unique experiences and research methodologies. While their focus remains on the impact of HRM on sustainable development projects, their study fails to conclusively demonstrate the efficacy of HRM and associated improvement strategies, contrasting with the insights unearthed in the current research.

Moreover, the research uncovers several shortcomings in the budgeting process within the project, highlighting a lack of inclusivity and wide consultations. Additionally, designers and contractors often miss opportunities to enhance overall project quality by providing financial management and consulting services. Furthermore, there is a failure to project costs at project completion and ensure that unbilled committed costs are accounted for in these projections. These findings contrast with the assertions made by Kadzikano and Chishawa (2016), who emphasize the critical role of financial capital as the cornerstone for the acquisition, use, and upkeep of all other forms of resources. They underscore the importance of a strong financial foundation for generating goods and services of sufficient quality and quantity, stressing the significance of fund availability in driving productive processes and ensuring the quality of products and services within any organization or institution. In essence, these findings contribute to the ongoing discourse on HRM in construction projects and financial management practices, offering new insights while challenging existing assumptions. By identifying discrepancies between observed practices and established principles, the study opens avenues for further research and underscores the importance of aligning project practices with established norms to optimize project outcomes effectively.

The study's findings shed light on various aspects of financial management within Police housing Scheme projects, revealing critical insights into budget allocation processes, capitalization, and construction accounting systems. Specifically, the study highlights the importance of informed budgeting practices, where past budgets and actualizations inform future budget allocations. Adequate financial support for initial activities is identified as a crucial step, as insufficient capitalization can lead to adverse impacts such as staffing shortages, delivery delays, equipment failures, or material shortages, all of which hinder the project's ability to deliver quality service. Furthermore, the study emphasizes the necessity of establishing and maintaining proper construction accounting systems to ensure financial transparency and efficiency. These findings resonate with the observations made by Omopariola and Windapo (2019), who identified budgeting, creditworthiness, risk management, review, and assessment as effective financial management techniques contributing to improved project and organization performance.

Financial management practices are integral not only for project success but also for reducing exposure to financial risks across various institutions, enterprises, organizations, and commercial entities. Kusters et al. (2018) stress the importance of financial management in enhancing performance and mitigating financial risks. Similarly, Schwindt and Zimmermann (2020) highlight the primary goal of financial management: ensuring the most efficient and effective utilization of funds available. They underscore the necessity for project managers to maximize the use of limited financial resources to achieve institutional goals while guarding against issues such as embezzlement, diversion of funds from priority initiatives, and misappropriation resulting from poor financial management practices. In essence, these findings corroborate existing literature on the significance of financial management in project execution and organizational performance. By aligning with established principles and identifying best practices, the study contributes to a deeper understanding of effective financial management strategies within the context of Police housing Scheme projects, offering valuable insights for practitioners and policymakers alike.

The findings of the study illuminate several deficiencies in materials management practices within Police housing Scheme projects. Specifically, the absence of a stock information system prevents effective tracking of materials usage and storage, hindering decision-making regarding safety stock levels. Moreover, the material management process fails to ensure the appropriate selection of materials and lacks robust quality control procedures to guarantee the use of high-quality materials in construction. Additionally, there is a failure to ensure timely availability of materials and to monitor actual usage during project execution using technologies such as barcode systems. These observations contradict the findings of Ndungu (2017), who highlighted successful inventory control as a crucial factor in ensuring effective project implementation. Similarly, Patel (2020) emphasized the significant role of proper materials management in enhancing productivity, cost efficiency, and timely project completion.

The materials management system, as envisaged, aims to address these shortcomings by ensuring the identification, procurement, delivery, and handling of materials on-site in a timely and cost-effective manner. Materials management, as defined by Bringezu and Bleischwitz (2017), involves planning and controlling efforts to ensure the correct quality and quantity of materials are specified, purchased at a fair cost, and available at the point of use when required. Therefore, effective materials management becomes integral to project management, as it directly impacts project costs. Lowering procurement costs, as highlighted by Othman et al. (2018), contributes to reducing overall project expenses. This comprehensive approach to materials management encompasses identifying required materials, calculating quantities, conducting material quality assurance, and maintaining inventory control, all of which are essential for project success. In light of these findings, it becomes imperative for Police housing Scheme projects to overhaul their materials management practices to align with established principles and best practices outlined in the peer-reviewed literature. Implementing robust materials management systems can enhance project efficiency, reduce costs, and ensure the timely completion of construction projects. Moreover, the implications extend beyond individual projects to broader considerations of resource optimization and project sustainability within the construction industry.

The study's findings underscore the significance of efficient material management practices in Police housing Scheme projects. Notably, material management plays a crucial role in ensuring the appropriate selection of materials, a process that must be initiated early in the planning phase to optimize project outcomes. However, the absence of material inventory control mechanisms impedes effective stock monitoring, hindering informed decision-making regarding material ordering, delivery, and storage arrangements. Despite this, the study highlights the potential for substantial cost savings through efficient materials management, as it reduces on-site overheads stemming from materials delays, thereby improving project completion. These observations align with Luvuga's (2018) findings, which emphasized the positive influence of material resource management on project success.

Efficient material management practices can yield significant cost savings for projects, as noted by Rabadi (2016). Delaying material procurement until necessary can prevent capital from being tied up unnecessarily and mitigate the risk of excess inventory leading to additional costs. Moreover, effective inventory control measures are crucial for preventing material decay or theft during storage, which could otherwise result in financial losses and project delays. The availability of materials when needed is critical for project progress, as delays due to material unavailability can lead to increased costs and time overruns. Performance measures serve as indicators of how well a function operates, with specific metrics varying across systems (Ghaffar et al., 2020). In light of these findings, it becomes evident that optimizing material management practices is essential for enhancing project efficiency, reducing costs, and ensuring timely project completion. Implementing robust inventory control mechanisms and adhering to efficient procurement processes can mitigate risks associated with material delays and excess inventory, contributing to overall project success. Moreover, the implications extend beyond individual projects to broader considerations of resource optimization and project sustainability within the construction industry.

The study's findings highlight the transformative impact of Information Technology (IT) tools and services on various aspects of Police housing Scheme projects. Notably, the adoption of IT has significantly enhanced the data collection process by field officers, facilitated widespread access to computing devices among employees, and reduced the workload associated with personnel functions, thereby lowering head-office overheads linked to HRM activities. Moreover, the provision of unlimited Internet access for communication purposes and the implementation of e-HR tools have led to the redesign and streamlining of HR processes, with automation of basic administrative tasks and IT-supported managerial decision-making further optimizing operational efficiency. These outcomes resonate with the observations of Nguyen (2020), who noted the ubiquitous utilization of IT in contemporary projects, spanning areas such as software development, business process reform, and research and development.

The effective management of information resources to align with agency missions and enhance organizational performance is a cornerstone of Information Resources Management (IRM), as articulated by Rogito et al. (2020). By standardizing and centralizing resources, IRM enables their sharing and utilization across the agency, fostering collaboration and efficiency beyond individual users or programs. This approach not only facilitates the reduction of public information gathering burdens but also promotes the effective leveraging of information assets to drive organizational success.

In light of these findings, it becomes evident that embracing IT tools and services is paramount for enhancing project efficiency, streamlining administrative processes, and improving decision-making within Police housing Scheme projects. Moreover, the principles of Information Resources Management offer a framework for optimizing the utilization of information assets to support agency missions and drive performance improvements. By recognizing the strategic value of information resources and investing in IT infrastructure and capabilities, organizations can unlock opportunities for innovation, collaboration, and sustained success.

The study further revealed that the absence of IT infrastructure for processing and controlling employee records and performance data, coupled with inadequate network infrastructure, hinders the quality of project deliverables to stakeholders. Additionally, the lack of IT utilization for communication with beneficiaries and partners, as well as the failure to provide timely information to line managers, impedes rapid resourcing decisions during projects. Furthermore, inadequate communication with employees results in a lack of understanding regarding the collection and use of e-HR data. These findings contrast with the insights provided by Farah (2019), who demonstrated that IT usage facilitated better data and knowledge management, improved operational efficiency, and enhanced accountability for organizations, leading to higher-quality project delivery.

In contrast, Tzanakis (2018) highlighted the significant impact of IT in resolving project lifecycle problems through the implementation of project management software, which reduces time and expenses. Moreover, the adoption of information technology introduces transformative changes in HR functions, requiring HR professionals to acquire new skills in HRIT and focus on technology-supported transformational activities. This shift towards network and knowledge-based HR functions signifies a paradigm shift in the management of human resources, with IT serving as a critical enabler for organizational efficiency and effectiveness. These findings underscore the critical role of information technology in project management and HR function transformation. By leveraging IT solutions, organizations can streamline processes, enhance communication, and improve decision-making, ultimately leading to better project outcomes and organizational performance. However, to realize the full potential of IT, organizations must invest in infrastructure, provide adequate training, and foster a culture of digital literacy and innovation.

V. Conclusion

The study findings have shown the significance of human resource management practices as key performance factors when implementing Kenya Police housing Scheme projects. It is recommended that those implementing Kenya Police housing Scheme projects need to consider these when implementing the projects. The government can also establish registration that would see avenues created for sharing and storage of human resource management practices to improve research and learning either in the counties or nationally. This would help avoid duplication of efforts more so in baseline evaluations.

On financial resource management, the study recommends that project management need to adhere to cost estimation, cost budgeting and cost controlling management practices in order to enhance performance of Kenya Police housing Scheme projects. It is therefore recommended that proper cost estimation need to be carried out based on project scope in order to come up with a project budget that is more accurate. It is also important that the management of Kenya Police housing Scheme projects establish appropriate strategies for cost controlling in order to foster project performance.

The study recommends that project materials which form a very significant resource if well planned and monitored can help in managing project cost to a big degree, more so Class A materials. Once the procedures of material ordering are correctly and efficiently followed in a housing construction project, total material cost of the project can greatly be reduced. The study also recommends that there should be a central place for managing and co-ordinating material handling operations from the site and the head office and a call for of resourceful Management Information System (MIS) that will help in material controlling and ensure project completion.

Research Implications

In addition to developing and documenting techniques for proper human resource planning, recruitment, and motivation, it is recommended that a comprehensive policy framework be established at the national level. This framework should outline standardized practices for human resource management in Kenya police housing scheme projects, with a focus on recruiting and retaining highly qualified project managers and personnel. It should also address strategies for aligning project employee motivation with project objectives and societal goals.

For future research, it is advised to consider not only the pragmatism paradigm but also explore other research paradigms, such as interpretivism or positivism, to gain different insights into the subject matter. This diversity in research paradigms can provide a more holistic understanding of resource management in the context of Kenya police housing scheme projects.

Moreover, the incorporation of a longitudinal study design can offer a deeper insight into the long-term impact of various resource management practices on project completion. Longitudinal studies can track the evolution of projects over time and capture changing dynamics in resource management and project outcomes.

Additionally, mixed-methods research approaches should be extended to involve not only quantitative and qualitative data but also consider ethnographic research techniques, such as participant observation or in-depth interviews, to provide a more nuanced understanding of the challenges and successes in resource management in these projects.

Limitations of the Study

This study covered sensitive information of public interest; therefore, respondents were unwilling to disclose the information fearing it might be used against them therefore they were assured of the confidentiality of their responses. There were inadequate data on projects that were completed. In the course of obtaining data, the study encountered information that had many gaps. This was overcome through the application of triangulation methods of data collection in which data was collected from many sources and then collated to authenticate its accuracy. Data collection was affected due to the Covid19 pandemic that restrict movement of people. This was overcome however by using Google forms to administer the questionnaires and conducting phone interviews.

Suggestions for Further Research

Further research is encouraged to investigate the influence of various dimensions of resource management, such as financial resource management, material resource management, and human resource management, on the completion of Kenya police housing scheme projects. A comprehensive study that delves into the multifaceted aspects of resource management can provide a more holistic understanding of their impact on project outcomes. To offer deeper insights into regional disparities and localized factors affecting project completion, future research should consider specific counties as units of analysis. By comparing the practices and outcomes of Kenya police housing scheme projects in different counties, researchers can identify region-specific challenges and best practices that may guide county-level policy and implementation strategies. Extending beyond the construction sector, future studies could explore the influence of resource management practices on project completion in diverse domains. This cross-sectoral approach can help in identifying commonalities and differences in resource management challenges and solutions across various project types, including infrastructure development, healthcare initiatives, and educational programs.

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Author (s) Contribution Statement

All authors contributed to manuscript revision, read, and approved the submitted version. Specifically, Sir. Nathan Stephen Mwangangi developed and revised the main manuscript; edited and made sure the manuscript followed the recommended guideline. Prof. Angeline Mulwa Sabina was involved in restructuring and approving the manuscript for submission and Prof. Dorothy Ndunge Kyalo participated in reviewing and approving the manuscript for academic structure. Finally, Dr. Thomas Ombati reviewed and approved the research design, data analysis and the outcome of the research.

References

- Ameh, O. J. & Daniel, E. I. (2017). Human resource management in the Nigerian construction firms: Practices and challenges. *Journal of Construction Business and Management*, 1(2), 47-54. <https://doi.org/10.5281/zenodo.1234567>
- Arain, H., Han, L., & Meo, M. S. (2019). Nexus of FDI, population, energy production, and water resources in South Asia: a fresh insight from dynamic common correlated effects (DCCE). *Environmental Science and Pollution Research*, 26, 27128-27137. <https://doi.org/10.1007/s11356-019-05575-1>
- Boella, M. J. & Goss-Turner, S. (2019). *Human resource management in the hospitality industry: A guide to best practice*. Milton Park: Routledge. <https://www.routledge.com/Human-Resource-Management-in-the-Hospitality-Industry-A-Guide-to-Best-Practice/Boella-Goss-Turner/p/book/9781138338883>
- Bowen, G. A. (2019). Document analysis as a qualitative research method. *Qualitative Research Journal*, 9(2), 63-79. <https://doi.org/10.1108/QRJ-D-19-00038>
- Bringezu, S. & Bleischwitz, R. (Eds.). (2017). *Sustainable resource management: global trends, visions and policies*. Milton Park: Routledge. <https://cir.nii.ac.jp/crid/1130282272816115968>
- Bulman, D., Kolkma, W. & Kraay, A. (2017). Good countries or good projects? Comparing macro and micro correlates of World Bank and Asian Development Bank project performance. *The Review of International Organizations*, 12(3), 335-363. <https://doi.org/10.1007/s11558-017-9285-9>
- Casson, D. & Dawes, G. (2019). Reflections on a successful sustainable partnership between police and researchers: Responding to violent assaults against police project in north Queensland. *James Cook UL Rev.*, 25(1), 107-119. <https://search.informit.org/doi/10.3316/ielapa.007360042273441>
- Cheng, M. Y., Kusoemo, D., & Gosno, R. A. (2020). Text mining-based construction site accident classification using hybrid supervised machine learning. *Automation in Construction*, 118, 103265. <https://doi.org/10.1016/j.autcon.2020.103265>
- Chirkunova, E. K., Kireeva, E. E., Kornilova, A. D. & Pschenichnikova, J. S. (2016). Research of instruments for financing of innovation and investment construction projects. *Procedia Engineering*, 153(4), 112-117. <https://doi.org/10.1016/j.proeng.2016.08.254>
- DeCenzo, D. A., Robbins, S. P. & Verhulst, S. L. (2016). *Fundamentals of human resource management*. New York: John Wiley & Sons. [https://books.google.co.ke/books?id=V4BCgAAQBAJ&lpg=PP18&ots=dXeyEflIFk&dq=DeCenzo%2C%20D.%20A.%2C%20Robbins%2C%20S.%20P.%20%26%20Verhulst%2C%20S.%20L.%20\(2016\).%20Fundamentals%20of%20human%20resource%20management.%20New%20York%3A%20John%20Wiley%20%26%20Sons.&lr&pg=PP18#v=onepage&q&f=false](https://books.google.co.ke/books?id=V4BCgAAQBAJ&lpg=PP18&ots=dXeyEflIFk&dq=DeCenzo%2C%20D.%20A.%2C%20Robbins%2C%20S.%20P.%20%26%20Verhulst%2C%20S.%20L.%20(2016).%20Fundamentals%20of%20human%20resource%20management.%20New%20York%3A%20John%20Wiley%20%26%20Sons.&lr&pg=PP18#v=onepage&q&f=false)
- Doss, W., Rayfield, J., Burris, S., & Lawver, D. (2021). A quantitative content analysis of survey research methods over a 40-year time period in the Journal of Agricultural Education. *Journal of Agricultural Education*, 62(3). <https://jae-online.org/index.php/jae/article/view/1584>
- Enshassi, A., Ayyash, A., & Choudhry, R. M. (2016). BIM for construction safety improvement in Gaza strip: awareness, applications and barriers. *International Journal of Construction Management*, 16(3), 249-265. <https://doi.org/10.1080/15623599.2016.1181661>
- Farah, A. Y. (2019). *The Impact Of Information Technology On Project Success: A Case Study Of Care International Organization In Hargeisa, Somaliland*. Masters Thesis, Admas University. https://www.academia.edu/download/64991462/THE_IMPACT_OF_INFORMATION_TECHNOLOGY_ON_PROJECTS_SUCCESS.pdf
- Ghaffar, S. H., Burman, M. & Braimah, N. (2020). Pathways to circular construction: An integrated management of construction and demolition waste for resource recovery. *Journal of Cleaner Production*, 244 (2), 1187-10. <https://www.sciencedirect.com/science/article/pii/S0959652619335802>
- Githenya, M. S. (2019). Assessment of the determinants of implementation of housing projects in Kenya. *European journal of business management*, 11(11), 230-253. <https://doi.org/10.1016/j.jclepro.2019.118710>
- Gitonga, T. (2020). *Influence of employee welfare projects on police officers' motivation to work: a case of police housing project in Nairobi County, Kenya* (Doctoral dissertation, University of Nairobi). <http://erepository.uonbi.ac.ke/handle/11295/93796>
- Highsmith, J. (2004). *Agile project management: Creating innovative products*. Pearson Education. <https://dl.acm.org/doi/abs/10.5555/1594896>
- Hsien-Yu, S. (2020). Human Resource Practitioner Professional Ability, Achievement Motivation and Management System Construction. *International Journal of Asian Social Science*, 10(9), 496-506. <http://dx.doi.org/10.6007/IJARBS/v10-i7/7397>
- Kadzikano, G. & Chishawa, A. (2016). *Sharing our Experience on CBNRM: Developing Stakeholder Level Participatory Monitoring and Evaluation Systems*. Doctoral dissertation, University of Nairobi. <https://doi.org/10.18488/journal.1.2020.109.496.506>

- Khair, K., Mohamed, Z., Mohammad, R., Farouk, H. & Ahmed, M. E. (2018). A management framework to reduce delays in road construction projects in Sudan. *Arabian journal for science and engineering*, 43(4), 1925-1940. <https://doi.org/10.1007/s13369-017-2955-1>
- Kieti, R. M. (2020). Affordable Housing in Kenya. *Africa Habitat Review*, 14(1), 1677-1687. <https://uonjournals.uonbi.ac.ke/ojs/index.php/ahr/article/view/376>
- Kumar, D. P., Satish, A. & Asadi, S. S. (2018). Evaluation of human resources management in construction industry using analytical approach: a model study. *International Journal of Mechanical Engineering and Technology*, 9(2), 3-44. <https://sdbindex.com/documents/00000002/00000-46634.pdf>
- Kundakçı, M., Mantarcı, A., & Erdoğan, E. (2017). Growth and characterization of GaN thin film on Si substrate by thermionic vacuum arc (TVA). *Materials Research Express*, 4(1), 016410. <https://doi.org/10.1088/2053-1591/aa91ff>
- Kusters, K., Buck, L., de Graaf, M., Minang, P., van Oosten, C. & Zagt, R. (2018). Participatory planning, monitoring and evaluation of multi-stakeholder platforms in integrated landscape initiatives. *Environmental management*, 62(1), 170-181. <https://doi.org/10.1007/s00267-017-0899-3>
- Luvuga, L. L. (2018). Determinants Of Successful Completion Of Housing Projects At National Housing Corporation In Kenya. *International Journal of Entrepreneurship and Project Management*, 4(1), 71-84. <https://doi.org/10.1038/nmeth.4402>
- Marx, V. (2017). Structural biology: doors open at the European XFEL. *Nature methods*, 14(9), 843-846. <https://www.nature.com/articles/nmeth.4394>
- Mwinzi, A. M. & Moronge, M. (2018). Determinants of completion of housing projects in informal settlements in Nairobi City County, Kenya. *Strategic Journal of Business & Change Management*, 5(2), 1493-1519. <https://http://www.strategicjournals.com/index.php/journal/article/view/737/744>
- National Police Service Commission (NPSC), (2019). *Annual report for FY 2012/2018: transforming the police service*. Nairobi: NPSC. <https://www.npsc.go.ke/annual-reports/>
- Ndungu, A. G. (2017). *Factors Influencing The Implementation Of Government Housing Projects For Kenya Police Service In Nairobi County, Kenya* (Doctoral dissertation, University of Nairobi). <http://hdl.handle.net/11295/102149>
- Nguyen, N. T. (2020). Performance evaluation in strategic alliances: A case of Vietnamese construction industry. *Global Journal of Flexible Systems Management*, 21(1), 85-99. <https://doi.org/10.1007/s40171-019-00232-7>
- Njiru, S. G. (2018). *Project management practices and implementation of projects in manufacturing companies in Nairobi City County, Kenya*. Masters Thesis, Kenyatta University. <https://ir-library.ku.ac.ke/bitstream/handle/123456789/19232/Project%20Management%20Practices%20and%20Implementation%20of%20Projects%20in%20Manufacturing%20Companies%20in%20Nairobi%20City.pdf?sequence=1>
- Ochenge, M. D. (2018). *Project management practices and performance of road infrastructure projects done by local firms in The Lake Basin Region, Kenya* (Doctoral dissertation, Doctoral thesis, Kenyatta University). <https://ir-library.ku.ac.ke/bitstream/handle/123456789/19290/Project%20management%20practices%20and%20performance%20of%20road%E2%80%A6.pdf?sequence=1>
- Ogbuanya, T. C., Nweke, J. N. & Ugwoke, S. C. (2017). Material resource management for effective teaching of electrical/electronic technology in colleges of education (Technical) in Nigeria. *International Journal of Applied Engineering Research*, 12(18), 7238-7253. https://www.researchgate.net/publication/320427672_Material_Resource_Management_for_Effective_Teaching_of_ElectricalElectronics_Technology_in_Colleges_of_Education_Technical_in_Nigeria
- Omopariola, E. D. & Windapo, A. (2019). Financial management strategies that influence project and organisation performance. *Financial Management Strategies*, 2(1), 476-485. https://www.researchgate.net/profile/Noorsaidi-Mahat/publication/360484447_Sustainable_construction_and_residential_building_developers_in_Malaysia_factors_affecting_the_adoption/links/627a065b973bbb29cc70b518/Sustainable-construction-and-residential-building-developers-in-Malaysia-factors-affecting-the-adoption.pdf#page=467
- Othman, I., Hashim, Z., Mohamad, H. & Napiiah, M. (2018). The Framework for Effective Human Resource Management at Construction Site. In *MATEC Web of Conferences* (Vol. 203, p. 02002). EDP Sciences. <https://doi.org/10.1051/mateconf/201820302002>
- Patel, K. V. (2020). Construction materials management on project sites. In *National Conference on Recent Trends in Engineering & Technology*, 6(2), 1-5. <https://www.bvmengineering.ac.in/misc/docs/published-20papers/civilstruct/Civil/101002.pdf>
- Powell, W. W., & DiMaggio, P. J. (Eds.). (1991). *The new institutionalism in organizational analysis*. University of Chicago Press. <https://works.swarthmore.edu/alum-books/4182>

- Rabadi, G. (Ed.). (2016). *Heuristics, metaheuristics and approximate methods in planning and scheduling* (Vol. 236). London: Springer. https://digitalcommons.odu.edu/emse_books/15
- Ringera, J. K. (2020). *Factors influencing completion of selected Kenya police service housing projects in Central Kenya* (Doctoral dissertation, University of Nairobi). <http://erepository.uonbi.ac.ke/handle/11295/90631>
- Rogito, O., Maitho, T. & Nderitu, A. (2020). Capacity Building in Participatory Monitoring and Evaluation on Sustainability of Food Security Irrigation Projects. *Journal of Engineering, Project & Production Management*, 10(2), 33-42. https://www.academia.edu/download/105146313/ID_247_10_2_94_102.pdf
- Saisi, E. A., Ngahu, S. M. & Kalio, A. (2020). Financial factors influencing successful completion of construction projects in public universities: a case of Egerton university, Kenya. *International Journal of Economics, Commerce and Management*, 3(5), 1465-1476. <https://www.google.com/url?sa=t&source=web&rct=j&opi=89978449&url=https://ijecm.co.uk/wp-content/uploads/2020/05/3596>
- Sayles, L. R. (2017). *Managing large systems: organizations for the future*. New York: Routledge. <https://www.taylorfrancis.com/books/mono/10.4324/9780203786437/managing-large-systems-leonard-sayles>
- Schwindt, C. & Zimmermann, J. (Eds.). (2020). *Handbook on project management and scheduling vol. 1*. Manhattan: Springer International Publishing. <https://link.springer.com/book/10.1007/978-3-319-05915-0>
- Shaikh, H. H., Zainun, N. Y., & Khahro, S. H. (2020, May). Claims in construction projects: A comprehensive literature review. In *IOP Conference Series: Earth and Environmental Science* (Vol. 498, No. 1, p. 012095). IOP Publishing. <https://iopscience.iop.org/article/10.1088/1755-1315/498/1/012095/meta>
- Stanko, B. (2020). The ill at ease or the uneasy fit? Mapping knowledge onto policy onto practice within a political maelstrom: Betsy Stanko laces the contributions of this section together and encourages us to continue to take the opportunity to influence policy and practice. *Criminal Justice Matters*, 72(1), 12-13. <https://doi.org/10.1080/09627250802057872>
- State Department for Housing. (2021). *Department of Housing and Urban Development*. <https://housingandurban.go.ke/>
- Thapa, P., Ngwenya, P. & Kaufmann, B. (2017). Participatory Monitoring and Evaluation: a tool for making farmer groups function better. *Appropriate Technology*, 44(4), 43-45. https://www.researchgate.net/profile/Pamela-Richardson-5/publication/324587903_Participatory_Monitoring_and_Evaluation_a_tool_for_helping_farmer_groups_to_function_better/links/5ad734c3458515c60f572c8e/Participatory-Monitoring-and-Evaluation-a-tool-for-helping-farmer-groups-to-function-better.pdf
- Tzanakis, M. (2018). Social capital in Bourdieu's, Coleman's and Putnam's theory: empirical evidence and emergent measurement issues. *Educate~*, 13(2), 2-23. <http://www.educatejournal.org/index.php/educate/article/view/366>
- United Nations Centre for Human Settlements. (2017). *The State of the World's Cities, 2001* (Vol. 27). UN-HABITAT. <https://unhabitat.org/sites/default/files/download-manager-files/State%20of%20the%20World%E2%80%99s%20Cities%2020082009%20-%20Harmonious%20Cities.pdf>
- Wafula, E. F. (2017). *Factors influencing road projects performance in Kenya: A case of road contractors in Machakos County* (Doctoral dissertation, University of Nairobi). <http://hdl.handle.net/11295/101762>
- Wehrmeyer, W. (Ed.). (2017). *Greening people: Human resources and environmental management*. London: Routledge. <https://doi.org/10.4324/9781351283045>