

Project Resource Management and Implementation of Housing Construction Projects in Nakuru City County, Kenya

Antony Njuguna Njenga ^{1*}, Dr. Elizabeth Nambuswa Makokha (PhD) ^{1,2},

^{1*} College of Human Resource Development, Department of Entrepreneurship and Procurement Leadership and Management. Jomo Kenyatta University of Agriculture and Technology, P.O. Box 62000 - 00200, Nairobi Kenya

² College of Human Resource Development, Department of Entrepreneurship and Procurement Leadership and Management. Jomo Kenyatta University of Agriculture and Technology, P.O. Box 62000 - 00200, Nairobi Kenya

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Abstract: The purpose of this study was to examine the influence of project resource management on implementation of housing construction projects in Nakuru City County, Kenya. The study was guided by the following specific objectives as; to determine the influence of resource planning on implementation of housing construction projects in Nakuru City County, Kenya. The study adopted the following theories related to the study, Resource based view theory, contingency theory and resource dependency theory. The study applied a descriptive research design. The target population for the study was 5 housing projects in Nakuru city county, Kenya, comprising of the technical staff from the housing and infrastructure department, contractors and quantity surveyors and structural engineers. The study worked with entire population since the target population is small. The main data collection instruments were questionnaires. Pilot study was carried out to test the reliability and validity of the data collection instrument. Descriptive statistics data analysis method was applied to analyze data aided by Statistical Package for Social Sciences (SPSS) to compute responses frequencies, percentage mean and standard deviation results. Finally Multiple Linear Regression model was employed to establish the significance of the independent variables on the dependent variable. The findings were presented using tables. In conclusion basing on the study findings, the study came up with the following conclusions; a unit increase in resource planning, will lead to an increase in Implementation of housing construction projects in Nakuru City County, Kenya when all other independent variables are held constant. The study came up with the following recommendation; The management of housing construction projects should determine the required resources to deliver projects and allocate and schedule the work based on team capacity by identifying project objectives, scoping work, allocating resources, scheduling tasks, and developing strategies to achieve. They should match available resources to prioritized project tasks based on required skills, time constraints, and budget, ensuring maximum utility of both tangible and intangible assets since misallocation can affect the quality of construction if resources are stretched too thin or if unqualified personnel are assigned to technical roles.

1.0 INTRODUCTION

Before embarking on any construction project, it is essential to clearly define the project's scope and objectives (Kerzner, 2022). This includes determining project deliverables, timelines, and required resources. By having a comprehensive understanding of the project requirements, it becomes easier to allocate resources strategically (Merrow, 2024). Project resource management plays a critical role in the successful implementation of housing construction projects (Hindarto, 2023). It involves the efficient planning, allocation, and utilization of various resources namely human resources, materials, equipment, time, and finances to ensure the project is completed within the set scope, budget, and timeline (Aumayr, 2023).

The process begins during the planning phase, where a resource management plan is developed to outline the types and quantities of resources required, their availability, and how they will be acquired and deployed. Accurate estimation of resource needs is essential to avoid shortages, wastage, or over-expenditure, all of which can derail the progress of the construction project (Kravtsov et al., (2024).

The housing sector is a fundamental component of the construction industry, contributing nearly 10% to global GDP (Wuni, & Shen, 2020). Approximately 50% of total investment in construction is allocated to housing projects (Morrow, 2024). The global significance of this sector underscores the necessity for effective cost management in housing projects to ensure their success (Cross, 2023). Project resource management plays a pivotal role in the successful implementation of housing construction projects, as it directly influences cost control, timelines, quality, and overall project delivery (Zhu & Huang, 2022). Effective resource management involves the strategic planning, allocation, and monitoring of all necessary inputs such as labour, materials, equipment, and financial resources to ensure that construction activities proceed efficiently and without interruption. In housing projects, where multiple phases such as site preparation, foundation work, structural construction, and finishing are tightly interlinked, poor resource coordination can lead to delays, budget overruns, and compromised workmanship (Anwar et al., 2021). Shortages or mismanagement of resources, especially skilled labor or critical materials, often results in rework or idle time, increasing costs and reducing productivity (Nasri, et al.,2022). Moreover, in contexts where demand for housing is high, such as in many urban and peri-urban areas of Kenya, resource management becomes even more critical to scale up delivery without sacrificing quality (Thaddee, et al., 2020). Project managers must therefore adopt integrated systems for tracking resource use, forecasting needs, and ensuring transparency and accountability throughout the project lifecycle (Thaddee, et al., 2020). Ultimately, strong project resource management enhances the efficiency, quality, and sustainability of housing construction, contributing to the timely and successful completion of projects that meet client and community expectations.

Construction projects are inherently large, complex, and dynamic, taking place in changing environments and often under tight budget and time constraints (Myers, 2022). To navigate these challenges, project managers rely on planning and control techniques, particularly project resource management, which involves the strategic allocation of both human and non-human resources to ensure timely, cost-effective, and high-quality project completion (Ngo & Hwang, 2022; Zhu & Huang, 2022). Effective resource management enhances productivity and mitigates risks through proactive planning, monitoring, and adaptation (Sabini & Alderman, 2021). Project implementation plans are essential during the execution phase, which consumes the most time and resources, often leading to conflicts and delays (Chai, 2022; Aumayr, 2023). Globally, resource management has been studied in various sectors, such as the UK energy sector, where key skills include scheduling, communication, risk, and stakeholder management (Pieterse et al., 2022), and in Iran's construction industry, where multi-project scheduling models reduce transportation costs (Cheraghi et al., 2023). In Indonesia, enterprise architecture enhances holistic resource planning (Hindarto, 2023).

The implementation of housing construction projects is a complex and multi-phased process that requires careful coordination of activities, resources, and stakeholders to ensure the successful delivery of quality housing within budget and time constraints (Aumayr, 2023). It begins with the planning and design phase, where architects, engineers, and developers collaborate to create detailed blueprints, cost estimates, and schedules based on the project's scope and client requirements. This is followed by the mobilization phase, where resources such as labour, materials, equipment, and permits are acquired and prepared for execution. During the execution phase, construction activities are carried out in sequential stages, including site preparation, foundation laying, structural work, roofing, finishing, and installation of utilities such as water, electricity, and sewage systems. Each phase must adhere to technical standards and regulatory requirements to ensure structural safety and habitability (Kravtsov et al., (2024). Project management tools and techniques, such as Gantt charts, progress tracking, and quality assurance systems, are essential during implementation to monitor milestones, address delays, and control costs. Additionally, stakeholder engagement especially with clients, regulatory authorities, suppliers, and local communities is critical throughout implementation to minimize conflict, ensure compliance, and promote transparency (Cross, 2023). In the context of public or low-income housing projects, social and environmental considerations such as sustainability, inclusivity, and community needs must also be integrated into the implementation process. Effective implementation culminates in a final inspection, testing, and handover to the client, with any defects addressed during a defined defect liability period. Overall, the success of housing construction project implementation hinges on sound project planning, resource management, stakeholder coordination, and adherence to quality and safety standards.

Regional perspectives of project resource management on the implementation of housing construction projects vary significantly depending on local economic conditions, regulatory frameworks, and availability of resources, labour market dynamics, and governance structures. In developing regions such as many parts of Sub-Saharan Africa including Kenya project resource management is often challenged by inconsistent funding flows, limited access to skilled labor, and supply chain disruptions (Turok et al., 2023). These issues can cause delays, increase costs, and reduce the quality of housing projects (Nsirim, 2023). Additionally, procurement inefficiencies and inadequate coordination between public agencies and private contractors often lead to wastage or misallocation of critical materials and financial resources. As a result, housing projects may be stalled or completed below acceptable standards. Conversely, in more developed regions like Western Europe or North America, project resource management benefits from advanced planning tools, integrated supply chains, and strict regulatory oversight. These systems enable greater precision in budgeting, scheduling, and quality control, which in turn supports timely and efficient implementation. Moreover, sustainability is increasingly emphasized in these regions, with a focus on managing environmental resources, reducing carbon footprints, and incorporating green building practices (Nsirim, 2023).

In the East African context, including Kenya and Eldoret City specifically, regional dynamics such as land ownership disputes, urban planning challenges, and fluctuating material prices directly impact project resource management. Local governments often face capacity gaps in enforcing building codes and monitoring project progress, which weakens accountability and project delivery (Okolocha et al., 2023). Therefore, strengthening regional institutions, improving procurement transparency, and investing in local capacity building are essential steps toward better resource management and more successful implementation of housing construction projects.

Regionally, Nigerian studies highlight leadership failures, project abandonment, and a lack of sustainability knowledge (Nsirim, 2023; Okolocha et al., 2023), while in South Africa, stakeholder engagement remains critical yet underutilized in sustainable water resource management (Adom & Simatele, 2022). From a local perspective, project resource management in the implementation of housing construction projects is shaped by the unique socio-economic, cultural, and institutional characteristics of the area where the project is being carried out. In towns and counties across Kenya such as Eldoret in Uasin Gishu County local project resource management typically grapples with constraints related to limited budgets, scarcity of qualified personnel, unreliable material supply chains, and inefficient coordination among stakeholders. These challenges often slow down the pace of construction and compromise the quality of housing output (Langat, 2023). One of the most pressing local issues is the availability and cost of construction materials, many of which must be sourced from outside the immediate region. This leads to inflated prices due to transport costs and irregular supply, especially during rainy seasons or economic disruptions. Inadequate storage facilities and weak inventory systems can also result in material losses due to theft, damage, or mismanagement (Langat, 2023). Labor management at the local level is equally crucial; in many cases, there is a shortage of skilled construction workers, forcing contractors to rely on casual or untrained labor. This not only affects work quality and safety but also extends the duration of projects.

Moreover, local governance structures play a significant role in resource management. County governments are responsible for issuing building permits, monitoring compliance with construction regulations, and coordinating public infrastructure services such as roads, water, and electricity. Delays or inefficiencies in these areas often due to bureaucratic bottlenecks or capacity gaps—can negatively impact project timelines and increase costs. Additionally, community involvement and land ownership issues can affect resource allocation and access, particularly where there are disputes or lack of clarity regarding land tenure (Kibagendi, et al., 2024). To address these local challenges, there is a growing need for more structured project planning and budgeting, investment in training and certifying local artisans, and strengthening partnerships between developers, county governments, and community stakeholders (Kibagendi, et al., 2024). Emphasizing transparency, participatory planning, and local procurement strategies can also enhance trust, reduce conflicts, and improve the overall implementation of housing construction projects. Thus, a context-specific approach to resource management is essential to ensure sustainable, cost-effective, and timely delivery of housing at the local level (Nzau, 2020).

Locally, studies from Kenya reveal misaligned human resources, inadequate training, and poor equipment availability in large-scale water projects (Kurgat & Odhiambo, 2022), though financial and human resource management were found to positively influence project implementation in Kericho's Tea Research Foundation (Langat, 2023). In Nairobi, resource levelling techniques enhanced project sustainability in gated communities (Kiungo & Otieno, 2023). In Nakuru City County, Kenya's Housing Program (AHP) exemplifies strategic project resource management aimed at delivering over 500,000 housing units through Public Private Partnerships (Nzau, 2020). The AHP aligns with Vision 2030 and seeks to

provide decent, accessible housing while stimulating the economy and creating jobs (Muthoni & Kinyua, 2020). Projects such as Buxton Point and Changamwe showcase ongoing progress, emphasizing AHP's role in economic transformation and inclusive development (Nawushao et al., 2022).

Despite the critical role of project resource management in the successful implementation of housing construction projects, many developments continue to experience delays, cost overruns, and substandard quality, particularly in developing regions such as Kenya. Poor planning, misallocation of materials, inadequate skilled labor, and financial mismanagement often compromise the efficiency and effectiveness of project execution. In local contexts like Eldoret and other urban centers, these issues are further compounded by supply chain disruptions, limited access to modern project management tools, and weak coordination among stakeholders. As a result, housing projects frequently fall short of delivery timelines, budget expectations, and quality standards, undermining efforts to address the growing demand for affordable and decent housing. This raises critical questions about how project resource management practices such as budgeting, labor utilization, materials planning, and equipment coordination—affect the actual implementation of housing construction projects. There is a pressing need to investigate this relationship in order to develop context-specific strategies that enhance the performance, accountability, and sustainability of housing projects.

In the intervening years, Kenya has witnessed a notable increase in infrastructure development, particularly in the real estate development sector and it is important to note, though, that a large number of these housing construction projects have fallen short of expectations because of industry-wide risk and uncertainty (Moraa, 2023). Because it involves so many different parties, including project owners, also known as clients, contractors, consultants, and other stakeholders, the construction industry is by nature complex. In spite of this complexity, the industry contributes significantly to the formulation and realization of societal objectives and needs, which is why the government has embraced housing program to be implemented through public private partnerships.

Approximately 8% of the gross national product is contributed by the real estate industry, which is one of the most important locally. Kenya's cities are expected to have a housing demand of about 250,000 units annually, but there is currently a supply of about 50,000 units, resulting in a 200,000 unit deficit (Ng'ang'a et al., 2022). Due to underlying limitations on the supply and demand sides, the deficit keeps growing and this is made worse by the average urbanization rate of 4.4%, or 0.5 million additional people moving into cities annually. A major issue in housing affordability is that many people cannot afford to build or purchase a home, as evidenced by the low number of mortgages issued in the market, which closed at 27,907 in 2023, a 3.7% decrease from 2022.

Globally, Reid (2023) assessed closing the housing gap through identifying the barriers hindering the sustainable design and construction of affordable homes. Retno and Harmiyati (2023) did a scientometric review of the construction of housing in developing countries. Locally, Giti (2023) examined the applicability of public-private partnerships in the development of affordable urban housing in Kenya. Victoria (2022) reviewed public private partnership and implementation of housing projects in Nakuru City County, Kenya. This has left a knowledge gap in the area of appropriate classification of thematic project resource management and implementation of housing construction projects hence this sought to determine the influence of resource planning and its influence on project implementation determine the influence of resource planning on implementation of housing construction projects in Nakuru City County, Kenya.

2.0. RESOURCE PLANNING

Resource planning is the process of determining what resources are required to deliver projects and then allocating and scheduling the work based on team capacity (Kiage 2023). Planning your resources involves: Understanding who needs to work on what project and when. Figuring out who is available to do the work (Emedosi et al., 2023). Resource planning is a critical business function that helps organizations ensure that all their resources, human and non-human, are optimally used across all operational areas (Gupta 2024). Without implementing a proper resource planning process, making any decision is like throwing darts in the air. Thus, it is crucial for businesses to develop a well-defined resource plan to maximize the potential of their workforce, deliver project commitments, and boost profit margins (Gupta 2024).

Project resource planning being a structured approach involves identifying project objectives, scoping work, allocating resources, scheduling tasks, and developing strategies to achieve ProS (Okudan & Çevikbaş, 2022). Project planning is an indispensable aspect of project management across various industries (Emedosi et al., 2023). It serves as the blueprint for a project's successful execution, providing a roadmap that guides project teams and stakeholders throughout its lifecycle.

As emphasized by (Mulesa et al., 2023), a well-structured project plan is essential for achieving project objectives and delivering results efficiently. Resource planning, scheduling, allocation, and tracking are essential project resource management components that significantly influence the successful implementation of housing construction projects (Kiage 2023). Resource planning involves projecting optimal resource needs human, capital, and physical—to ensure timely and cost-effective project delivery (Shet et al., 2021). Through forecasting and demand analysis, it bridges resource capacity gaps while improving productivity and cost control (Sinha & Roy, 2020; Jabeen & Rahim, 2021).

Housing implementation is shaped by stakeholder satisfaction, productivity, profitability, time and cost predictability, and other critical indicators like safety and quality (Volden & Welde, 2022). Projects, being inherently complex and involving multiple actors, require careful resource orchestration to achieve performance benchmarks and stakeholder value. Implementation is thus the culmination of strategic planning, execution, monitoring, and adaptive management, all of which are driven by sound resource management practices. With robust resource capacity planning, organizations can analyze the resource capacity vs. project demand gap. This foresight helps identify resource excess or shortage and implement corrective steps to bridge the gap with corrective treatments. In the case of a resource shortage, managers can facilitate proactive strategies such as re-training employees or hiring a contingent workforce. Conversely, when there is a resource excess, they can bring forward the project dates or sell excess capacity at discounted rates.

The implementation of housing construction projects is a comprehensive and multifaceted undertaking that progresses through several critical phases, each requiring specialized knowledge, strategic coordination, and strong management. The process begins with the pre-construction phase, which sets the foundation for project success. During this stage, the project is initiated through the definition of objectives, scope, and feasibility analysis. Site assessments such as land surveys and soil testing are carried out to ensure the land is suitable for construction. Detailed architectural and engineering designs are developed, followed by securing the required approvals and permits from regulatory bodies. This phase is vital as it determines the technical and legal readiness of the project (Zhang et al., 2022).

The construction phase is the core stage of implementation where the actual building work is executed. It begins with site preparation—clearing, leveling, and fencing the area—before laying the foundation. Structural work, including the erection of columns, beams, and slabs, follows closely. Masonry work, roofing, and installation of mechanical, electrical, and plumbing (MEP) systems are carried out systematically. The phase concludes with flooring, plastering, and both interior and exterior finishes. Careful scheduling, coordination among subcontractors, and adherence to quality and safety standards are critical at this stage to avoid delays and ensure structural integrity (Xu et al., 2023). Upon completion of physical construction, the post-construction phase involves activities like final painting, decorative work, landscaping, and installation of fixtures and fittings (He et al. 2023). Quality assurance processes such as inspections, testing of installed systems, and rectification of any identified defects are conducted. Once the project satisfies all quality and regulatory checks, it is handed over to the client or end-users. In large-scale projects, this phase may also include user orientation and maintenance training.

Effective implementation relies heavily on sound project management practices, guided by frameworks such as PMBOK, PRINCE2, or Agile methodologies. These approaches help structure the workflow, align project phases, manage risks, and ensure that deliverables meet stakeholder expectations. Programme and lifecycle management help oversee complex housing initiatives by breaking them into manageable components and aligning them with broader strategic goals. Key elements such as risk management and stakeholder engagement are essential throughout, ensuring that potential disruptions are identified early and that all parties including developers, contractors, regulators, and occupants remain informed and involved (Zhang et al., 2022). Several critical success factors influence the smooth execution of housing projects. These include the competency of the project team, with skilled professionals bringing both academic knowledge and practical experience to the table. Detailed planning of project schedules, budgets, and resources also has a direct impact on performance. Furthermore, active engagement of stakeholders fosters transparency and allows for more responsive decision-making, especially when adjustments to cost, scope, or design are needed (Xu et al., 2023). Proper management of constraints particularly time, which often has the greatest effect ensures that projects are delivered on schedule, within budget, and to the required quality standards. To ensure success, project implementers are advised to invest in continuous training, embrace technological tools for planning and monitoring, and promote collaborative stakeholder relationships throughout the project lifecycle. By maintaining focus on key performance areas and applying best practices in construction and project management, housing construction projects can achieve sustainable, high-quality outcomes that meet community and development needs (He et al. 2023).

The implementation of housing construction projects is a multi-phase process that involves strategic planning, coordination of resources, and effective project management (Zhang et al., 2022). It begins with the conceptualization and design phase, where stakeholders identify housing needs, define project objectives, and develop preliminary designs (Yuan et al., 2023). This phase typically includes feasibility studies, environmental assessments, and consultation with regulatory authorities to ensure the proposed housing project complies with local building codes, zoning regulations, and land-use policies. At this stage, a detailed project proposal is prepared, including architectural drawings, budgets, timelines, and risk assessments (Xu et al., 2023). Once the planning is complete, the project moves into the pre-construction phase. This involves finalizing the design, securing necessary permits and approvals, and engaging contractors through a transparent procurement process. The selection of competent contractors and consultants, such as architects, engineers, and quantity surveyors, is crucial to the success of the project. During this phase, financing arrangements are also finalized, whether through public funding, private investment, or a public-private partnership (PPP) (He et al. 2023). The development of a robust project schedule and work breakdown structure ensures that tasks are clearly defined and allocated to the appropriate teams.

The construction phase is the core of the implementation process. It involves site preparation, foundation laying, structural work, roofing, plumbing, electrical installations, and finishing (Chukwuka et al., 2023). Effective site management and supervision are vital to maintain quality, ensure adherence to safety standards, and avoid delays. Regular monitoring and evaluation during this phase help to identify any deviations from the plan and allow for corrective measures to be taken promptly. Progress reports, cost control measures, and stakeholder updates are essential to keep the project on track and within budget (Xu et al. 2023). Post-construction activities mark the final phase of housing project implementation (Abdzadeh et al., 2022; Xu et al., 2023; Chukwuka et al., 2023). These include final inspections, testing of systems, snagging, and rectification of defects. Once the buildings meet the required standards, they are handed over to the client or beneficiaries. In some cases, training on the use and maintenance of the housing units is provided, particularly for large-scale public housing projects. Additionally, the implementation team conducts a post-occupancy evaluation to assess the project's impact and gather feedback for future improvements. Overall, the success of housing construction projects hinges on efficient coordination, community involvement, and adherence to sustainable building practices (Pellerin et al., 2020).

3.0 METHOD

The study adopted a descriptive research design, which is a process of collecting data in order to answer questions concerning the current status of the subject in the study (Gay, 1981). This study was conducted in Nakuru City County. Thus, the target population for the study was 5 housing projects in Nakuru city county, Kenya, comprising of the technical staff from the housing and infrastructure department, contractors and quantity surveyors and structural engineers. Since the study population is small, the study worked with entire population which is census. The researcher used both primary and secondary data. Primary data was collected by administering questionnaires. Primary data is the data which is collected a fresh and for the first time and thus happen to be original in character (Kothari, 2004). Questionnaires were preferred since they are effective data collection instruments that allow respondents to give opinions pertaining the researched problem (Dempsey, 2003). Pilot study was conducted to detect weakness in design and strength of data to be collected and to pre-test the instruments that was used in this study. It was conducted to develop a comprehensive research design for main study and to check the reliability of the instruments adopted for the measurement of the influence of project resource management on implementation of housing construction projects in Nakuru City County, Kenya. Once data for this study is collected from the population, cleaned, organized to attach meaning, and tested for reliability and validity, then the analysis of the data followed in order to enable the testing of the research hypothesis and respond appropriately to the research objectives and questions by establishing meaning in the data collected. After data is collected and all the completed questionnaires re- turned, preliminary analytical steps of editing, coding and tabulation was done. These ensured that the data is accurate, reliable, complete and suitable for further detailed analysis (Sekaran and Bougie, 2010). This study used both descriptive and inferential statistics to analyse the data. Descriptive statistics described and summarize the data in a meaningful way. The coded data was entered into a computer and the SPSS computer package will be used. Correlation was used to measure the relationship between the variables' (independent and dependent variables). Regression was used to estimate the average relationship and predict the most likely values of one variable for specified values of the other variable. The function specification for the study was the multiple regression models which basically reveals the significant level of one variable over the other.

4.0 DISCUSSION

The results relating to the descriptive statistics of determining the influence of resource planning on implementation of housing construction projects in Nakuru City County, Kenya are presented in Table 4.5. According to the results, 60.2% of the respondents either agreed or strongly agreed that Resource planning determining what resources are required to deliver projects and then allocating and scheduling the work based on team capacity. This indicated a moderate level of affirmation by the respondents which was confirmed by the mean of 3.4578. Additionally, 75.5% of the respondents either agreed or strongly agreed that Resource planning helps organizations ensure that all their resources, human and non-human, are optimally used across all operational areas. This was a reflection that the majority of the respondents agreed with this statement. The strong mean score of 4.2202 reinforced this view and corroborated.

Further, 94.1% of the respondents either agreed or strongly agreed without implementing a proper resource planning process, making any decision is like throwing darts in the air. This, along with the high mean score of 4.2883 indicated a very high affirmation by the respondents. Additionally, 70.3% of the respondents either agreed or strongly agreed Project resource planning being a structured approach involves identifying project objectives, scoping work, allocating resources, scheduling tasks, and developing strategies to achieve ProS. The mean of this statement was 4.1354 indicating that most of the respondents agreed with it.

The results also showed that 47.4% of the respondents either strongly disagreed or disagreed, while 12.7% were uncertain that it serves as the blueprint for a project's successful execution, providing a roadmap that guides project teams and stakeholders throughout its lifecycle. The mean score of the statement was 2.7798 indicating a very moderate level of agreement. Lastly, 75.4% of the respondents either agreed or strongly agreed that with robust resource capacity planning, organizations can analyze the resource capacity vs. project demand gap enhancing successful implementation of construction projects. This statement also had a high mean score of 3.8646 indicating that there a high level of agreement with it. The standard deviations for the all statements were between 0.62114 and 1.50711 indicating that there was not much variation between the each of the responses and the average responses.

Table 4. 1: Descriptive Statistics of Resource Planning

Statements On Resource planning	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. Deviation
Resource planning determining what resources are required to deliver projects and then allocating and scheduling the work based on team capacity.	23.7%	10.2%	5.9%	6.0%	54.2%	3.4578	1.50711
Resource planning helps organizations ensure that all their resources, human and non-human, are optimally used across all operational areas.	5.9%	0.0%	18.6%	28.0%	47.5%	4.2202	1.07219
Without implementing a proper resource planning process, making any decision is like throwing darts in the air	0.0%	0.0%	5.9%	48.3%	45.8%	4.2883	.62114
Project resource planning being a structured approach involves identifying project objectives, scoping work, allocating resources, scheduling tasks, and developing strategies to achieve ProS	0.0%	0.0%	29.7%	38.1%	32.2%	4.1354	.67643
It serves as the blueprint for a project's successful execution, providing a roadmap that guides project teams and stakeholders throughout its lifecycle.	30.5%	16.9%	12.7%	12.8%	27.1%	2.7798	1.41607

With robust resource capacity planning, organizations can analyze the resource capacity vs. project demand gap enhancing successful implementation of construction projects

0.0% 13.6% 11.0% 39.8% 35.6% 3.8646 1.00019

Aggregate

3.7910 1.04885

4.2 Inferential Statistics

4.2.1 Pearson Correlation Coefficient Analysis

According to Benesty, Chen, Huang and Cohen (2009), Pearson correlation coefficient refers to the extent to which two or more variables have a linear association. The Pearson correlation coefficients of this study are illustrated in Table 4.8. According to the results, the independent variables, resource planning had positive correlations of $r = 0.745$, respectively with the dependent variable, Implementation of housing construction projects in Nakuru City County, Kenya. Thus, a change in resource planning by one unit will lead to a corresponding change of 0.745 in the dependent variable; a change in resource scheduling by one unit will lead to a corresponding change of 0.789 in Implementation of housing construction projects in Nakuru City County, Kenya.

Further, an assessment of the p-values showed that all the independent variables had p-values that were below 0.05 indicating that there a statistically significant relationship between independent and the dependent variable. This affirmed that in instances where there are confidence intervals of 95%, p-values are supposed to be below 0.05 so that the observed differences between groups are not likely to be down to chance and, as such, statistically significant.

Table 4.2: Pearson Correlation Coefficients

	Resource planning	Implementation of housing construction projects
Resource planning	Pearson Correlation	1
	Sig. (2-tailed)	
	N	43
Implementation of housing construction projects	Pearson Correlation	.745
	Sig. (2-tailed)	.008
	N	43

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

4.2.2 Multiple Regression Analysis

Regression is a statistical technique that deals with the determination of linkages between one or more independent variables and a dependent variable by fitting a line of best fit through a series of observations (Mooi & Startstedt, 2014). The summary of the study's multiple regression model is presented in Table 4.11. These results show that the R Square value for all the variables was 0.694 indicating that the model explained 69.4% of any changes in the dependent variable Implementation of housing construction projects in Nakuru City County, Kenya whenever there is a one percent change in the independent variables. This means that the model managed to reach the 0.7 threshold for significance of the R Square value as recommended by Hamilton, Ghert and Simpson (2015). This demonstrates a fairly strong goodness-of-fit of the regression model.

Table 4. 3: Regression Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.849 ^a	.694	.662	.329113

a. Predictors: (Constant), Resource planning

4.2.3 Analysis of Variance

Sawyer (2009) affirmed that the Analysis of Variance (ANOVA) is a statistical procedure that attempts to find out existing differences between experimental group means in situations where there are one or more independent variables and a dependent variable. The results of the ANOVA of the study are presented in Table 4.4. The results indicate that the ANOVA F-test score, calculated value F_{cal} at 5% level of significance is equivalent to 26.847, which is greater than the F critical value (F_{crit}) of 2.48 indicating that there is a significant relationship between all the independent variables and the dependent variable of Implementation of housing construction projects in Nakuru City County, Kenya. The p-value of 0.000 is less than 0.05 indicating that there is a statistically significant relationship between each of the independent variables and Implementation of housing construction projects in Nakuru City County, Kenya in accordance with the recommendations of Kao and Green (2008). This demonstrates the goodness of fit of the model.

Table 4.4: Analysis of Variance

ANOVA ^a					
Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	40.816	1	2.305	26.847	.000 ^b
Residual	22.293	42	.106		
1 Total	63.109	43			

a. Dependent Variable: Implementation of housing construction projects

b. Predictors: (Constant), resource planning

4.2.4 Beta Coefficient Analysis

Beta Coefficients as unknown constants that are projected from the data which are connected to particular independent variables (Peterson & Brown, 2005). These coefficients enable the measurement of the size of change in an independent variable and the manner in which this affects the dependent variable when the rest of the independent variables are held constant. The results of the Beta Coefficients of the study variables are shown in Table 4.5. The values of the constants and coefficients enabled the generation of the following multiple regression model:

$$\begin{aligned}
 Y &= \beta_0 + \beta_1 X_1 + \varepsilon \\
 &= 3.423 + 0.426 X_1
 \end{aligned}$$

Where, Y refers to the dependent variable (resource planning, resource scheduling, resource allocation and resource monitoring), X_1 refers to the resource planning. According to the equation, taking all the independent variables to be zero, resource planning, will be a constant equivalent to 3.423. A review of the findings also shows that a unit increase in resource planning will lead to a 0.426 increase in Implementation of housing construction projects in Nakuru City County, Kenya when all other independent variables are held constant.

Table 4. 5: Beta Coefficients

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	3.423	.513		4.299	.000
1 Resource planning	.426	.061	.562	.611	.000

a. Dependent Variable: Implementation of housing construction projects in Nakuru City County, Kenya

5.0 CONCLUSION AND RECOMMENDATION

In conclusion basing on the study findings, the study came up with the following conclusions; a unit increase in resource planning will lead to a 0.426 increase in Implementation of housing construction projects in Nakuru City County, Kenya when all other independent variables are held constant. The management of housing construction projects should determine the required resources to deliver projects and allocate and schedule the work based on team capacity by identifying project objectives, scoping work, allocating resources, scheduling tasks, and developing strategies to achieve.

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