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Stakeholder Participation and Performance of Residential Housing Construction Projects in Westlands Sub-County, Nairobi County, Kenya

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Abstract: *According to United Nations statistics, 3 billion people live in urban slums due to urbanization and population growth. Word Economic Forum projects that by the year 2050, more than a third of the population across the globe will reside in urban areas. Design, planning, maintenance, and management of residential houses and the residential environment have a long-term effect on the prosperity, quality of life, health, and happiness of individuals and communities. The general objective of this study was to examine stakeholder participation practice and performance of residential housing construction projects in the unique and diverse context of Westland's sub-county in Nairobi County, Kenya. This location, known for its diversity and being the most affluent neighbourhood in Nairobi County, hosts all kinds of residential units, from single rooms to houses with their compounds. Project management competency, stakeholder, and constraint theory formed the study's theoretical basis. The study applied descriptive research design and targeted 256 respondents, including project managers, architects, engineers, and developers of 64 private ongoing residential housing projects in Westland Sub-County. The study employed a robust methodology to ensure the reliability of its findings. A sample size of 156 respondents was selected through stratified random sampling. Primary data was collected through structured questionnaires, with the active participation of project managers, architects, engineers, and developers. Statistical Package for Social Science (SPSS, Version 25.0) was used to analyze quantitative data. The study generated descriptive statistics; multiple regression explained the relationship between study variables. Tables and graphs were used to present the results of the data analysis. Study findings revealed a positive relationship between independent and dependent variables. Stakeholder participation revealed a vital positive relationship (r=0.68) on the performance of residential construction housing projects. The study recommends the inclusion of stakeholders in every stage of projects; their opinions count but should be filtered to avoid mix-ups. The study further recommended that future researchers be limited to surveyors, engineers, and project managers and explore other players involved in project planning and implementation of residential housing projects, providing a roadmap for further research and practical applications.*

Keywords: *planning practices, project management, project performance, stakeholder involvement, project supervision, budget allocation*

1.1 Background to the study

According to most projections, the world population will reach 11 billion by the end of this century (Department of Economic and Social Affairs, 2017). A massive increase in today's population of 3.5 billion people is expected to bring about changes in global urbanization. World Economic Forum (2016)

projects that by the year 2050, more than a third of the world's population will be residents of urban areas. To meet the rapid growth, urban housing is required. The 750 major cities in the world are projected to require more than 260 million houses by 2030. A report published by the United Nations (UN) indicates that 3 billion people live in urban slums due to urbanization and population growth (Walker & Goubran, 2020)The built environment has a long-term effect on the prosperity, quality of life, health, and happiness of individuals and communities through the design, planning, maintenance, and management of built assets. Various factors interact in the construction industry. Every sector needs to move towards sustainability after the new millennium. The construction industry and project delivery and its management could achieve sustainability if economic, social, and environmental factors are integrated into the project delivery practices, procedures, and standards (Silvius, 2017).

Sub-Saharan Africa has the largest concentration of people living in urban low-income settlements. (Alaazi & Aganah, 2020). According to NHBRC (2020), 12.5 million households in South Africa live in slums and lack access to decent housing. Estimates showed that South Africa needed an average of 2.2 million housing units. (Adetooto et al., 2022). The estimated Cape Metropolitan MSDF report for 2018 showed that Cape Town needed 500,000 residential houses in 20 years from 2012 (City of Cape Town, 2018). Developing affordable and sustainable housing solutions in urban areas must still be prioritized.

The East Africa Community (EAC) has experienced rapid urbanization, which has resulted in a vast housing deficit (Mwesigye, 2019)For most residents in the region, owning a house is a pipe dream. Specific barriers have prevented EAC countries from alleviating this crisis, including the prohibitive cost of urban land, lack of affordable housing finance, rising construction costs, weak tenure security, and the prevalence of slums. (Bah & Geh, 2018)The housing deficit in Uganda was recently about 1.7 million, and by 2030, it is estimated that it will be around 3 million. (Bank of Uganda, 2019). An estimated 700,000 house units are needed in Kigali and 4 million in South Sudan. (Mwesigye, 2019).

In Kenya, President Uhuru Kenyatta unveiled The Big 4 Agenda in late 2017, which prioritized actions to be taken between 2017 and 2022 on four areas known as the four pillars. Manufacturing, Affordable Housing, food and nutrition security, and universal health care were the pillars. The government intends to build 500,000 affordable homes under the Affordable Housing Pillar, supporting over 300,000 jobs and contributing 14% to GDP (Kenya Association of Manufacturers, 2020). The Buy Kenya Build Kenya (BKBK) policy mandates that at least 70% of the building materials used in housing projects come from within Kenya. However, the Ministry of Transport and Infrastructure (MTID) still reports on collapsed structures and credits that to poor supervision and construction procedures. (Githenya & Ngugi, 2014).
Nairobi County, especially Westlands Sub-County, has seen a growth in construction projects. Westland is approximately 6 km northwest and can be reached via Chiromo Road. The region is surrounded by middle-income communities such as Parklands, Riverside, Spring Valley and Kileleshwa (Cytonn, 2019). Westlands was a residential area in the past, but as time passed and zoning regulations were relaxed, commercial and residential areas emerged (Cytonn, 2019).
High-rise apartments dominate the area due to the developed infrastructure, security, and world-class housing. Some residential areas are One West Park, Skyview Garden, Brookside Terraces, Victoria Heights, etc. (Cytonn, 2019). Construction projects contribute to macroeconomic growth, so it is essential to ensure that they are carried out better and more appropriately to be finished on schedule, on budget, and with high quality. Therefore, it is crucial to investigate and research the variables influencing

project completion at the planning and execution phases of commercial projects within Westlands, Nairobi.

1.2 Statement of the Problem

Stakeholders' participation in projects is fundamental for their success because stakeholders know the project's needs and acceptable results (Nyaribo, 2023). Most housing projects in Kenya have well-defined strategic plans when they kick off. However, midway, they fail because the respective stakeholders need to deliver the fundamental approaches to project completion. Putting up any residential building in Nairobi requires the involvement and approvals of various stakeholders during planning. They include the National Construction Authority (NCA), the county government of Nairobi, the local community and quantity surveyors. Upon getting permits from the National Construction Authority and the county government, most private developers start construction without involving the neighbouring community. For instance, residents of Lavington in Westlands Sub County obtained a court order from Metricon Developers to stop the construction of 512 housing units (Muhindi, 2023). Due to compliance concerns, some residential and commercial housing projects in Nairobi are marked for demolition by NCA and the county government. A key concern is the lack of stakeholder involvement when these projects are initiated, which results in demolitions, leaving households homeless and landlords suffering losses.

Residential housing projects are multiphase, with several activities to be coordinated simultaneously to ensure success. Project supervision is needed to ensure that the right quality and quantity of material and labour is devoted to a project for good outcomes. Supervision is designed as the control mechanism for all activities from the project's start to end. Lack of supervision and stakeholder engagement has led to poor project outputs (Nyaribo, 2023). Few studies have focused on the stakeholder supervisory role in project planning for residential housing in Nairobi County despite supervision being a critical factor in the performance of these projects. Ragui and Onchieku (2019) examined the effect of strategic leadership on the performance of housing co-operatives in Nairobi County. The study did not focus on supervisory leadership roles; it only discussed the type of leadership and how it affected performance. Mwakio (2020) examined the influence of management practices on the performance of housing projects in Mombasa County. The scope in Mombasa and Nairobi may differ; hence, a study in Nairobi County is necessary. According to the Nairobi Metropolitan Area Residential Report by Cytonn (2023), Westlands Sub County was ranked as the top-performing upper-mid-end suburb in Nairobi. The Sub County recorded an average total return of 6.4%, attributed to its high rental yield of about 5.9%. With the completion of the Nairobi Expressway, social amenities and vibrant commercial activities in the sub-county, rental returns are projected to maintain a rising trajectory. However, the rising cost of construction materials, labor, and logistics calls for proper stakeholder engagement to tap into the profits of residential housing investments (Ronoh, 2020). Most residential housing projects in Nairobi experience cost and time overruns due to poor planning and project management practices (Ronoh,2020).

Various studies have been conducted, but they need to contextualize the situation in residential construction projects. Most studies have focused on commercial projects. Antipa and Paul (2019) studied the impact of the participation of stakeholders in the construction of road projects in Nakuru County. Despite more significant insights, it was off from residential construction projects. Other studies have only focused on project managers. Most studies have also used one methodology, which is the quantitative approach. This study will involve all the stakeholders engaged in construction, and it will have a mixed methodology where qualitative studies will also be deployed. This will give more

information, especially in the residential construction space in Nairobi, Kenya.

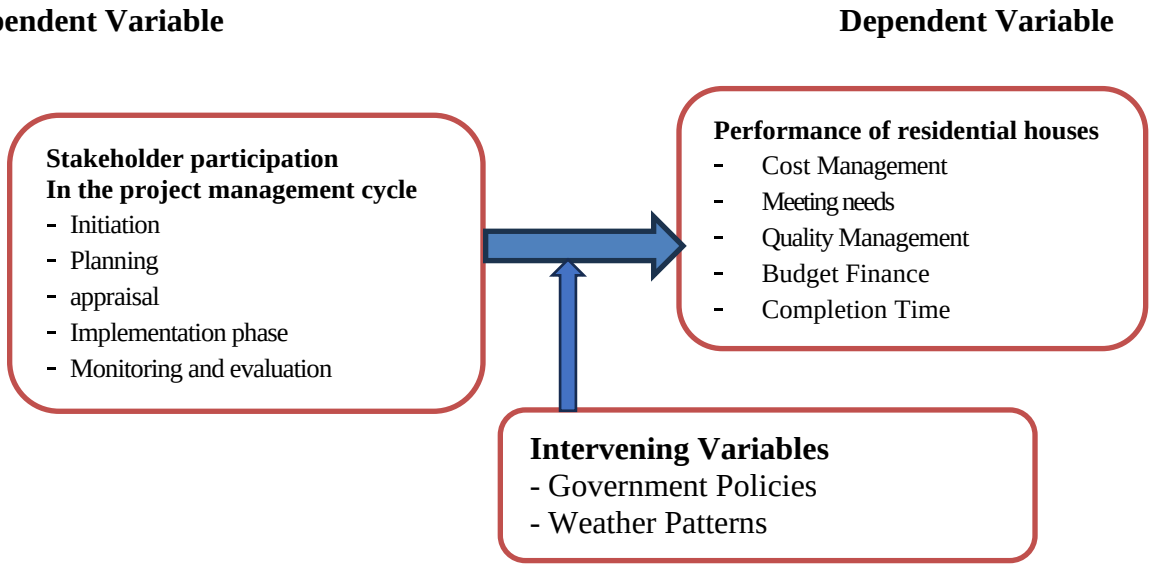
1.3 Research Objective

To establish the role of stakeholder participation in the performance of residential housing construction projects in Westlands Sub-County, Nairobi, Kenya.

1.4 Conceptual Framework

Figure 1 shows the linkage between the dependent and independent variables.

Figure 1: Conceptual Framework



Source: *Own conceptualization, 2023*

1.5 Literature review

In this section theoretical review and empirical review are presented.

1.5.1 Theoretical review

Stakeholder Theory

Freeman, Parmar, and Wicks (2004) put this theory forward. The theory is a form of capitalism that emphasizes connections with stakeholders, including suppliers, communities, businesses, clients, and others who have helped the organization. Stakeholder theory, according to Hill and Jones (2012), can aid in gaining the public's trust. The interrelationships between businesses, the micro and macro worlds, and how they impact organizational activities are the topics of stakeholder theory. Contractors, employees, governments, consumers, communities, and suppliers are just a few parties involved in each project. Other proponents of this theory, including Arkin and Skitmore (2008), emphasize the value of including organizational stakeholders and considering their interests. Project success is ensured by taking stakeholder concerns into account. This theory considers the inputs of various kinds of organizational stakeholders.

1.5.2 Empirical review

Influence of Stakeholder Participation on Performance of Residential Housing Construction Projects

Throughout the project management process, planning is equally crucial. Participants share their ideas and emotions about the desired situation during this participatory process. They serve as an example of what it should be like and a blueprint for getting there (Chikati, 2009). Further information will be discussed after this crucial stage. Budgets, the use of resources, work schedules, evaluations, and phase-out strategies are just a few of the specifics covered (Mulwa, 2008). Stakeholders are organizations and individuals who actively participate in projects or have interests that can be positively or negatively impacted during execution or upon project completion (such as clients, sponsors, implementing organizations, or the public). Stakeholders can affect project outcomes, team members, and more. Stakeholder participation in project implementation is crucial for project management. During the implementation phase, a project manager enables the coordination of personnel, accurate risk assessment, and practical resource utilization to carry out a predetermined project plan. Any person, group, or organization inside or outside of a construction project whom the project's results will impact is referred to as a stakeholder. Also, it may influence or contribute to success and performance. Completing any project is highly contingent on the participation of stakeholders.

Engagement of stakeholders results in responsive connections, positive development, and long-term growth, all of which are crucial for the effective planning and implementation of a project. The project gains acceptance, ownership, and social and environmental sustainability through effective stakeholder participation. The frequency, intensity, and structure of stakeholder engagement should correspond to the stakeholder's level of concern, the project's scope, impact, and threat. The approach and strategy necessary for participation will be determined by how the project affects various stakeholders' interests and rights.

1.6 Research Design and methods

This study combined explanatory and descriptive research designs. Saunders *et al.* (2016) describe descriptive research design as the procedure that a researcher adapts to systematically describe the problem and support the information with what they see. Saunders *et al.* (2016) describe descriptive research as fundamental for social research; hence, the study is interested in giving characteristics to people, organizations or the behaviors of various or specific groups. According to Cooper & Schindler (2014), descriptive research design is used to explain, predict and understand the existence of a relationship between the independent and dependent variables. For this study, the explained variable was housing construction project performance, whereas the independent variables were stakeholder participation, supervision, project cost and time management. According to Ogula (2005), a sample is a subset of the population under study that must represent the population from which it was drawn. A sample's importance in a study lies in its ability to cut expenses and time. The Yamane (1967) formula was utilized to ascertain the study's sample size.

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

Where N is the population size, n is the sample size, and e is the margin error for the study, which was set at 5%.

$n = 256\{/ 1 + 256(0.05)^2\} = 156$

Table 1: Sample Size

Category	Population	Sample	Percent
Project Managers	64	39	25%
Project Architects	64	39	25%
Engineers	64	39	25%
Developers	64	39	25%
Total	256	156	100%

Source: ***Researchers, 2023***

1.7 Findings and Discussion

This section entails the study findings. The gathered information was examined to address the study questions.

Questionnaire Return Rate

Table 2: Response Rate

Questionnaires	No.	(%)
Filled and Collected	121	77.56
No response	35	22.44
Total	156	100

Source: ***Researchers, 2023***

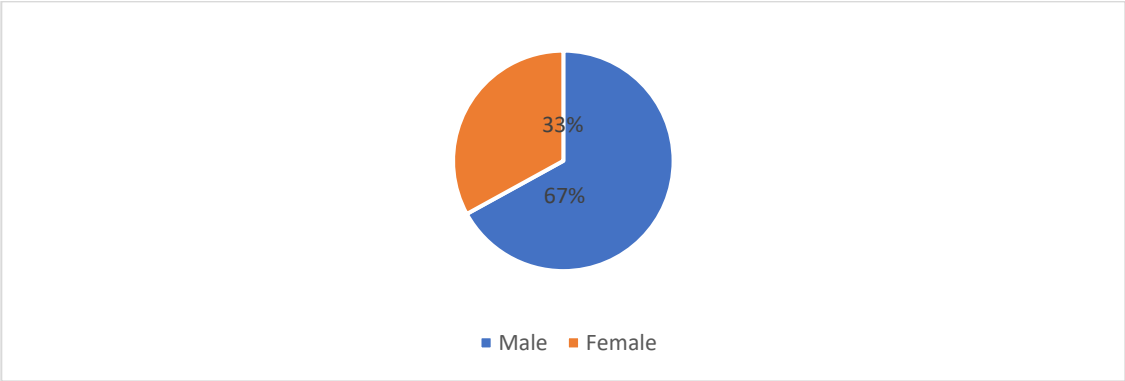
Table 2 displays the response rate. Out of 156 questionnaires, 35 (22.44%) were either not responded to or collected back for analysis, whereas 121 (77.56%) were filled out correctly and returned for analysis. A higher response rate is considered superior and gives statistical power to a study

Demographic Information

The study's demographic findings are highlighted in this section.

Gender of Respondents

Figure 2: Gender of Respondents

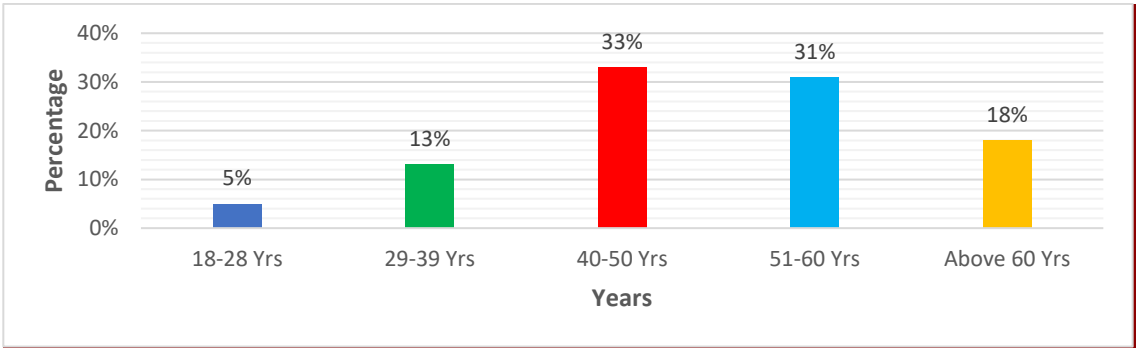


Source: ***Researchers, 2023***

Figure 2 displays the gender of respondents. The majority were males, 67%, while females were 33%.

Age Group of Respondents

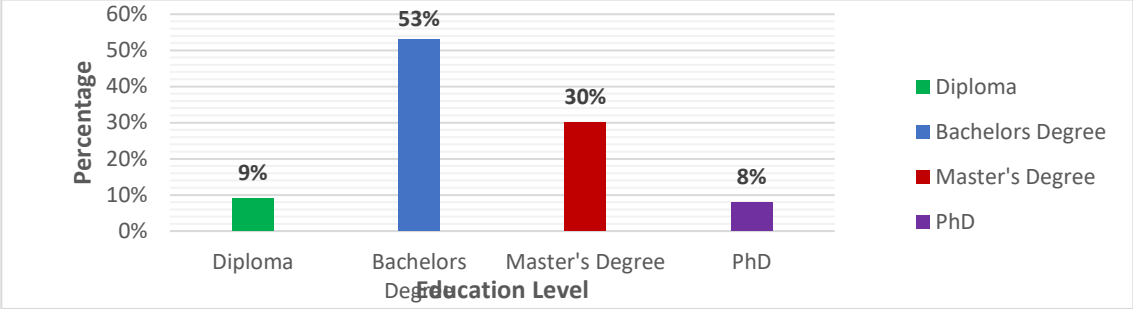
Figure 3: Age Group of Respondents



Source: ***Researchers, 2023***

Figure 3 displays the respondents' age group. The findings indicate that most respondents were between 40 and 50 years old, at 33 per cent, followed closely by those aged between 51 and 60, at 31 per cent, and those above 60, at 18 per cent. The study showed that individuals aged between 29 and 39 and those between 18 and 28 accounted for the least respondents, with a percentage of 13 and 5, respectively.

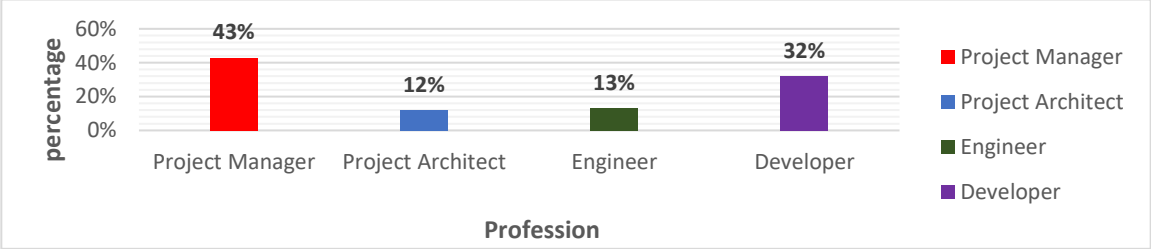
Respondents Education Level
Figure 4: Education Level



Source: ***Researchers, 2023***

Figure 4 displays the respondents' education level. It reveals that 53 percent of workers on construction projects have a bachelor's degree as their highest attainment, followed by Master's degree holders at 30 percent. Few construction professional workers have a diploma or a PhD as their highest education achievement, at 9 percent and 8 percent, respectively.

Profession of Respondent
Figure 5: Profession of Respondent



Source: ***Researchers, 2023***

The respondents' profession is displayed in Figure 5. The findings indicated that most residential construction projects did not have all four professions chosen for the study. Some project managers doubled as engineers and developers. Some construction plans were also bought, but the architect was not on site. The study, however, revealed that project managers, at 43 per cent, answered the questions, followed by developers at 32 per cent. Engineers and architects were rarely found at 13 and 12 per cent.

Years of Work Experience
Table 3: Work Experience

Work Experience	Frequency	Percent
<5 years	7	6%
6-15 years	51	42%
16-25 years	38	31%
>26 years	25	21%
Total	121	100%

Source: ***Researchers, 2023***

The respondents' work experience is displayed in Table 3. Most respondents had an experience between 6 to 15 years (42%), followed by those with work experience between 16 to 25 years at 31 per cent. Respondents with experience above 26 years were represented by 21 percent, while those below five years of experience were only a paltry 6 percent.

Stakeholder Participation in Performance of Residential Housing Construction Projects

Table 1: Descriptive Statistics of Stakeholder Participation in Performance of Residential Housing Construction Projects

	Percentages						
Statements	5	4	3	2	1	Mean	Std. Deviation
The employees' attitude and participation level determine a project's success.	37.3	47.1	10.8	4.1	0.7	4.02	0.934
Each one's input in designing the project minimizes inefficiency	54.2	30.5	7.2	1.7	6.4	4.53	0.96
Acquisition of permits from various regulatory boards is crucial for projects.	17.9	22.8	50.5	3.0	1.1	4.7	0.842
Does reducing bureaucracy in the organization determine the success of a project	26.9	45.7	23.2	3.2	1.0	3.78	1.231
Coordination of information between project parties and owners is essential for the success of housing construction projects.	42.6	37.1	13.9	4.0	2.4	4.871	1.334
Would you say that when project parties and owners have common ground, the disputes reduce?	30.0	17.1	48.5	2.4	2.0	3.05	0.849
Co-creation of projects reduces the incidences of rework.	39.9	44.3	10.6	3.0	2.2	3.62	0.871
N=121 Av. Mean = 4.082 Std. Dev. = 1.003							

Source: Researchers, 2023

The results indicated that most respondents (Mean=4.02, SD=0.934) believed employee attitudes and involvement levels impact the success of residential housing construction projects. According to the study, all respondents firmly agreed that having a say in how the project is designed reduces inefficiencies (Mean=4.53, SD=0.96). The respondents were neutral on whether the acquisition of permits from various regulatory boards is crucial for the success of housing projects (Mean=3.02, SD=0.842). The respondents agreed that reducing bureaucracy in the organization determines the success of housing construction projects (Mean=3.78, SD=1.231). The findings indicated that coordination of information between project parties and owners is essential towards the success of housing construction projects, with most of the respondents strongly agreeing. (Mean=4.871, SD=1.334). Respondents were neutral on whether project parties and owners have common ground and whether the disputes were reduced (Mean=3.05, SD=0.849). The respondents agreed that the co-creation of projects reduces the

incidences of rework (Mean=3.62, SD=0.871).

Table 5: Summary of Stakeholder Participation and Performance of Residential Construction Projects

Model	R	R^2	Adjusted R^2	Std. E. of the Estimate
1	.660[a]	0.435	0.431	8.605

Source: ***Researchers, 2023***

Table 5 shows the explanatory power of stakeholder participation in the performance of residential housing construction projects. The results indicated that the adjusted R-square was 0.431. The explanatory power of a regression model is explained by the adjusted R-square, where there exist various predictors in the model (Kabir, 2016). This means that stakeholder participation causes 43.1 percent changes in the outcomes of the explained variable which is performance of residential housing construction projects while 56.9 percent is as a result of other factors outside the model.

Table 6: ANOVA for Stakeholder Participation and Performance of Residential Construction Projects

Model		Sum Squares	df	Mean Square	F	Sig.
1	Regression	6855.257	1	6855.257	92.575	<.001[b]
	Residual	8886.120	120	74.051		
	Total	15741.377	121			

Source: ***Researchers, 2023***

ANOVA study of stakeholder participation in construction housing project performance is presented in Table 6. The F-Statistic obtained from the ANOVA test explains the general significance of the regression model tested at a 90 per cent confidence level. ANOVA test determines the effect of explanatory variables on explained variables in a regression model (Kabir, 2016). The results indicate that the calculated F-Statistic is 92.575 and a p-value of less than 0.1. Thus, the model is significant. Therefore, the stakeholder participation process partly explains the variation in the performance of residential housing construction projects.

Table 7 Regression Coefficients Between Stakeholder Participation and Performance

		Unstandardised Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	T	Sig.
1	(Constant)	5.677	1.839		3.087	0.003
	SE	0.684	0.071	0.660	9.622	0.000

Source: Researchers, 2023

Table 7 shows regression analysis between Stakeholder Participation and Performance of Residential Housing Construction Projects. Regression coefficients are called Population estimate parameters that describe the relationship between the response and the predictor variable (Kabir, 2016). The resulting regression equation was $Y=5.667+0.684X_1$.

X1 is the explanatory variable (Stakeholder Participation), while Y is the explained variable (Performance of residential construction housing projects). This shows that increasing stakeholder participation by one unit increases performance by 0.684 units. This equation is statistically significant (P-value=0.003<0.1).

Performance of Residential Housing Construction Projects

Table 8: Descriptive Statistics of Performance of Residential Housing Construction Projects

	Percentages						
Statements	**5**	**4**	**3**	**2**	**1**	**Mean**	**Std. Deviation**
Cost Management is a key performance indicator of residential housing construction projects.	36.0	43.1	2.45	13.4	5.05	3.215	0.244
Meeting Needs is a key performance indicator of residential housing construction projects.	54.5	34.6	1.01	7.05	2.84	4.116	0.101
Quality Management is a key performance indicator of residential housing construction projects.	34.7	51.2	2.09	8.50	3.51	4.385	0.017
Budget Finance is a key performance indicator of residential housing construction projects.	42.7	32.4	5.04	14.5	5.36	5.219	0.148
Completion Time is a key performance indicator of residential housing construction projects.	55.9	40.1	0.21	1.96	1.83	5.126	1.002
	N=121 Av. Mean = 4.412 Std. Dev. = 0.3024						

Source: Researchers, 2023

Most respondents agreed that cost management is a crucial consideration in the performance of Residential Housing Construction Projects (Mean=3.215, SD=0.244). The experts agreed that meeting needs are crucial to performing Residential Housing Construction projects (Mean=4.116, SD=0.101). Most respondents agreed that quality management is a critical consideration in the performance of residential housing construction projects (Mean=4.385, SD=0.017). Budget Finance was a significant consideration in the performance of Residential Housing Construction Projects as most respondents strongly agreed with the statement (Mean=5.219, SD=0.148). Completion time was established to be a key consideration in the performance of Residential Housing Construction Projects, with the majority strongly agreeing with the statement (Mean =5.126, SD=1.002).

Multiple Linear Regression

Table 9: Multiple Linear Regression Analysis

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.864[a]	0.746	0.737	5.847

Source: Researchers, 2023

Table 10: ANOVA for Stakeholder Participation, Supervision, budget Allocation and Time Management

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11741.150	4	2935.287	85.852	<.001[b]
	Residual	4000.227	117	34.190		
	Total	15741.377	121			

Source: Researchers, 2023

Table 10 shows an ANOVA analysis of the study's independent and dependent variables. The result at 90% confidence shows that the p-value was less than 0.001, and the F crucial was 85.852. This indicates a considerable linearity of the regression model.

1.8 Conclusion

The study concluded that stakeholder participation is necessary to co-create while designing and implementing construction projects. Failure to take in information from various individuals or institutions involved in construction leads to dragging and even incomplete projects. A common understanding among the workers is also essential. According to the study, stakeholder participation positively and significantly influences project performance. The research concludes that supervision is significant, especially when implementing construction projects. A project's success hinges upon leadership and a project manager’s experience. The study also concludes that minimizing bureaucracies within a project, portraying positive attitudes by the supervisors to their subordinates, and designing motivation programs directly and significantly influence project performance. The study concludes that budget allocation directly and significantly influences the performance of construction projects. Proper scheduling and costing of materials also directly influence project performance. The study concludes that financial resources should be disbursed on time since delays in disbursement significantly and negatively influence performance. The study concludes that most projects are not completed at the scheduled time. Delays always occur between projects. Materials are never delivered on time, and financial disbursements are not done on time. The study holds that time management has a positive and significant influence on the performance of construction projects.

1.9 Recommendations

Stakeholder Participation: The study recommends that stakeholders be part and parcel of construction projects at every stage. These stakeholders can include institutions that are also in line with construction for proper approvals, which leads to stalled projects if not well followed. The study also recommends that every opinion counts, even though they should be filtered to avoid mix-ups in design and implementation.

Supervision: The study established a significant direct relationship between supervision and the performance of construction projects. It is recommended that those who commission projects also consider the leadership or supervision aspect. Supervisors should also keep learning and attend training to upscale their managerial skills to handle the ever-changing construction environment.

Budget Allocation: Construction projects should be based on proper budgets. Construction materials should be cost-effective, capturing future inflation rates. The budget should be reviewed in a timely manner to address any developing issues within the construction space.

Time Management: All milestones in a construction project should be achieved within the set time. The projects should also set achievable targets and assign indicators simultaneously to measure progress. The study also recommends factoring in political and economic factors when specifying the project's completion time frames.

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