ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/26sep843

Influence of Project Planning Practices on Performance of Affordable Housing Projects in Rwanda: A Case Study of Mpazi Project in Kigali

Phocas Mbitsemunda[1]; Abdulrazaq Olayinka Oniye[2]

[1]Author; [2]Co-author

[1]Reg No: 2405000310

[1]Graduate School of Master of Science in Project Management at the University of Kigali
[2]Professor; The University of Kigali Supervisor

Publication Date: 2026/11/03

Abstract: This study examined the influence of project planning practices on the performance of affordable housing projects in Rwanda, with reference to the Mpazi Affordable Housing Project. Specifically, the study assessed the effect of project budgeting practices, project scheduling and timelines, stakeholder engagement and participation, and monitoring and evaluation practices on the performance of affordable housing projects. Data were collected from 133 respondents using questionnaires and semi-structured interviews. Quantitative data were analyzed using descriptive and inferential statistics including correlation and regression analysis with the support of Statistical Package for the Social Sciences, while qualitative data were analyzed thematically. The findings revealed that project budgeting practices had a very strong positive and statistically significant relationship with the performance of affordable housing projects (r = 0.965, p = 0.000). Regression analysis further showed that budgeting practices had the strongest positive influence on project performance (B = 3.537, Beta = 0.860, t = 10.309, Sig. = 0.000). The study also established that project scheduling and timelines had a strong positive and statistically significant relationship with project performance (r = 0.922, p = 0.000). The regression findings further indicated that scheduling and timelines positively influenced project performance (B = 0.206, Beta = 0.045, t = 0.544, Sig. = 0.003). Regarding stakeholder engagement and participation, the inferential findings revealed a strong positive and statistically significant relationship with project performance (r = 0.942, p = 0.000). Regression analysis further confirmed that stakeholder engagement positively influenced project performance (B = 0.011, Beta = 0.013, t = 0.217, Sig. = 0.002). The study further established that monitoring and evaluation practices had a significant positive relationship with project performance (r = 0.714, p = 0.000). The regression results indicated that monitoring and evaluation practices positively influenced project performance (B = 0.028, Beta = 0.062, t = 1.104, Sig. = 0.001). The overall regression model findings indicated that project planning practices collectively explained 69.1% of the variation in the performance of affordable housing projects (R Square = 0.691; Adjusted R Square = 0.681). The ANOVA results further confirmed that the regression model was statistically significant (F = 71.601, Sig. = 0.000), implying that project planning practices significantly predict the performance of affordable housing projects in Rwanda.

How to Cite: Phocas Mbitsemunda; Abdulrazaq Olayinka Oniye (2026) Influence of Project Planning Practices on Performance of Affordable Housing Projects in Rwanda: A Case Study of Mpazi Project in Kigali. *International Journal of Innovative Science and Research Technology*, 11(9), 3493-3508. https://doi.org/10.38124/ijisrt/26sep843

I. INTRODUCTION

Affordable housing projects have been identified as one of the salient policy responses to exacerbating urban poverty, housing deprivation, and the requirement for sustainable cities. Yet there is also indication that the outcome of such projects heavily relies on sound project planning practices, which include adequate planning practices such as scheduling, budgeting, stakeholder engagement, and risk management (UN-Habitat, 2023). In Worldwide, delays, cost overruns and quality gaps in housing programmes are enlightened by poor planning systems rather than resources being insufficient, stressing the critical role of good project planning in the delivery of housing projects (World Bank, 2022). Governments in countries throughout Europe and Asia have taken project planning to the level of national housing plans. The incorporation of project scheduling software and stakeholder engagement tools reduced slippage by up to 30% in urban housing projects (European Commission, 2023). For example, the Housing and Development Board in Singapore

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/26sep843

has effectively integrated planning models that have resulted in more effective resource usage in the management of large-scale housing estates and also timely delivery success (Tan, 2022). At the same time, China's affordable housing initiative emphases on an adherence to planning frameworks, and the result: fewer cost overruns and higher resident satisfaction. These experiences also illustrate the impact that planning has on affordability, timing, and sustainability (MOHURD, 2024).

Governments at the level of the East African Community (EAC) have made housing a priority in the urban development agenda. Uganda's (2022) National Housing Policy identified that affordable housing projects are generally inadequate due to poor planning and project scoping, Tanzania's housing policies stressed the need to integrate the planning practice including stakeholder mapping and feasibility studies into planning efforts (EAC Secretariat, 2024). A member of the EAC, Rwanda has also prioritized affordable housing via its National Strategy for Transformation (NST1), Vision 2050, and Rwanda Housing Authority programmes. Nevertheless, despite those policy frameworks, several other housing projects in Rwanda were found to be plagued by delays, cost escalation and low levels of community satisfaction as a result of bad planning during design and implementation (NISR, 2023; MINECOFIN, 2024).

Rwanda's Mpazi Affordable Housing Project in Kigali specifically was initiated as part of the government's quest to supply affordable housing for low- and middle-income households. The project is intended to alleviate the severe Kigali housing shortage, which the Rwanda Housing Authority estimates exceed 300,000 units by 2032 (RHA, 2024). Yet, the Mpazi Project has been afflicted with problems with implementation, resource allocation and community support. To date, these challenges are viewed to be more a matter of planning inefficiency, with unclear timelines, insufficient stakeholder coordination and poor monitoring structures (Habimana & Uwizeyimana, 2022; Office of the Auditor General, 2023). Most housing research in Rwanda has concentrated on financing, governance, and policy environments (Mukamana & Maniriho, 2021; NISR, 2023). To date, limited attention has focused on project planning as an active driving variable of affordable housing performance. This represents a crucial hole in knowledge, especially in a country with a rapid housing demand and where affordable housing is highly sensitive to the nation's urban transformation.

➢ *Problem Statement*

According to the African Development Bank (AfDB, 2023), more than 50% of affordable housing projects in the region fail to be delivered on time because of lack of planning capacity and poor alignment between communities and stakeholders. Research conducted in Kenya and South Africa indicated that housing projects experienced sustained schedule slippage and abandonment of projects caused by poor plan formation at designation phase (Otieno & Thwala, 2021). In contrast, plans that incorporated strong project planning practices achieved gains in accountability, cost control and delivery velocity. This means that planning still plays a primary role in whether affordable housing projects have a high success rate or failure (World Bank, 2023). The government of Rwanda has placed affordable housing at the core of its national agenda through both NST1 and Vision 2050 and expects there to be a need of over 300,000 dwellings in urban areas by 2032 (Rwanda Housing Authority, 2024).

Mpazi Affordable Housing Project in Kigali were designed to satisfy this growing need. Nonetheless, performance hurdles are acute, along with reports of delays, financial burdens, and inadequate beneficiary involvement. Among the main causes were identified by the Office of the Auditor General (2023) for affordable housing projects not working in the timelines and quality requirements, which were due to issues with planning and inter-stakeholder coordination. This highlights that it is planning inefficiencies not only the lack of funding that are at the heart of the challenges the affordable housing sector in Rwanda faces.

The extant studies on affordable housing in Rwanda have predominantly addressed the issue from the lens of finance, policy frameworks and governance. Thus, while Mukamana & Maniriho (2021) found significant resource mobilization constraints, Habimana & Uwizeyimana (2022) focused on governance bottlenecks related to housing delivery. NISR (2023) also identifies housing demand and affordability as main problem areas and MINECOFIN (2024) highlighted institutional and policy issues. While these studies offer valuable new understandings, they ignored much about the role that project planning procedures (e.g. timelines, financial accuracy, participatory approach to participation, and monitoring systems) play in shaping performance on affordable housing projects especially in Rwanda area. This hole is especially important because Rwanda's affordable housing projects such as the Mpazi Project have long experienced performance gaps that are not simply attributed to financing or good governance.

Thus, with there being little or no systematic consideration of planning practice and its consequences for planning, policy makers and project managers may not receive enough insight into the extent that planning plays a role in housing project success. It was against that background; the current study is undertaken to bridge existing gap by investigating how project planning can influence the quality of affordable housing projects performance of affordable housing projects in Rwanda using Mpazi Project in Kigali as a case study.

➢ *Objectives of the Study*

The main objective of this study was to assess the influence of project planning practices on the performance of affordable housing projects in Rwanda, with a particular focus on the Mpazi Affordable Housing Project in Kigali. Specific Objectives were:

- To investigate the effect of project budgeting practices on the performance of affordable housing projects in Rwanda;

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/26sep843

- To evaluate the influence of project scheduling and timelines on the delivery and completion of affordable housing projects in Rwanda;
- To examine the role of stakeholder engagement and participation in shaping the performance of affordable housing projects in Rwanda;
- To analyze the impact of monitoring and evaluation practices on the performance and sustainability of affordable housing projects in Rwanda.

➢ *Research Hypotheses*

- H_1: Project budgeting practices have a statistically significant effect on the performance of affordable housing projects in Rwanda;
- H_2: Project scheduling and timelines have a statistically significant impact on the performance of affordable housing projects in Rwanda;
- H_3: Stakeholder engagement and participation have a statistically significant influence on the performance of affordable housing projects in Rwanda;
- H_4: Monitoring and evaluation practices have a statistically significant effect on the performance and sustainability of affordable housing projects in Rwanda.

II. LITERATURE REVIEW

This study draws on three complementary theoretical perspectives: Agency Theory, the Resource- As such, project success is rarely determined by a single factor. Instead, it is shaped by how stakeholders coordinate responsibilities, how resources are mobilized and managed, and how accountability mechanisms guide the behavior of those involved in project implementation. Agency Theory helps explain the accountability relationships between project owners and implementers, the Resource-Based View highlights the importance of effective resource utilization, and Stakeholder Theory emphasizes the value of inclusive participation and collaboration. Together, these theories provide a comprehensive framework for understanding why budgeting, scheduling, stakeholder engagement, and monitoring systems are essential elements of effective project planning.

➢ *Agency Theory*

Agency Theory was introduced by Michael Jensen and William Meckling (1976) in their seminal work Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure. The theory examines situations where one party (the principal) delegates responsibilities to another party (the agent) to perform a task on their behalf. In many organizational contexts, including construction and housing development projects, principals often rely on agents to execute tasks. However, Jensen and Meckling argued that the interests of the principal and the agent may not always align. Agents may prioritize personal benefits, convenience, or short-term gains unless appropriate monitoring and incentive mechanisms are in place. In developing countries, including many African construction environments, studies have shown that insufficient monitoring and poorly structured contracts can create opportunities for opportunistic behavior among project agents (Muriithi & Bwisa, 2021). This often results in budget overruns, delays in project completion, or poor workmanship. Within the Mpazi Affordable Housing Project, Agency Theory helps explain the importance of strong monitoring and evaluation frameworks, transparent procurement systems, and clearly defined roles among project actors. These mechanisms ensure that the interests of contractors and project managers remain aligned with the broader objective of delivering affordable and quality housing.

➢ *Resource-Based View (RBV)*

The Resource-Based View (RBV) of the firm was popularized by Jay Barney (1991), building on earlier ideas from Edith Penrose (1959) regarding the role of internal resources in shaping organizational growth. RBV argues that the success of organizations and projects depends largely on how effectively they utilize their available resources. According to Barney (1991), resources that are valuable, rare, inimitable, and well organized (VRIO) can create sustainable advantages and improve performance outcomes. These resources may include financial capital, technical expertise, skilled labor, organizational knowledge, construction technology, and project management capabilities. In construction and infrastructure development, the availability and efficient management of such resources often determine whether projects are completed on time and within budget. Housing projects, particularly in developing countries, frequently face challenges related to limited funding, material shortages, and shortages of specialized skills. From an RBV perspective, the success of affordable housing projects does not depend solely on having resources, but rather on how effectively those resources are planned, coordinated, and utilized.

➢ *Stakeholder Theory*

Stakeholder Theory was formally articulated by R. Edward Freeman (1984) in his influential book Strategic Management: A Stakeholder Approach. Freeman challenged the traditional view that organizations exist primarily to serve shareholders, arguing instead that organizations and projects must consider the interests of all groups affected by their activities. According to this perspective, stakeholders may include government agencies, project sponsors, contractors, employees, community members, regulators, and beneficiaries. Each of these groups holds legitimate interests that can influence the success or failure of a project.In large development initiatives such as affordable housing programs, stakeholder collaboration becomes particularly important. Housing projects affect communities directly through land use, infrastructure development, and residential planning. When community members and local authorities are not involved in planning processes, projects may face resistance, dissatisfaction, or underutilization after completion. Research in African housing development has shown that projects that actively engage stakeholders during planning stages are more likely to achieve higher acceptance and sustainability (Omollo & Chege, 2020).

Relevance of the adopted theories to the study; the three theories adopted in this study complement each other and collectively explain the relationship between project planning

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/26sep843

practices and affordable housing project performance. Agency Theory explains the need for monitoring and accountability mechanisms to ensure that project implementers act in the interest of project owners and beneficiaries. Resource-Based View (RBV) highlights the importance of effective allocation and management of financial, technical, and human resources through budgeting and scheduling practices. Stakeholder Theory underscores the significance of inclusive participation and collaboration among all actors involved in housing development.

➢ *Conceptual Framework*

Project Planning Practices is Independent Variable influence Affordable Housing Project Performance which is Dependent Variable. Drawing from the theories discussed: Resource-Based View informs Budget Planning and Project Scheduling, as these practices determine how resources are allocated and utilized. Stakeholder Theory supports the importance of Stakeholder Participation in Planning, emphasizing inclusive decision-making. Agency Theory explains the role of Monitoring and Evaluation Planning in ensuring accountability and alignment between project owners and implementers.

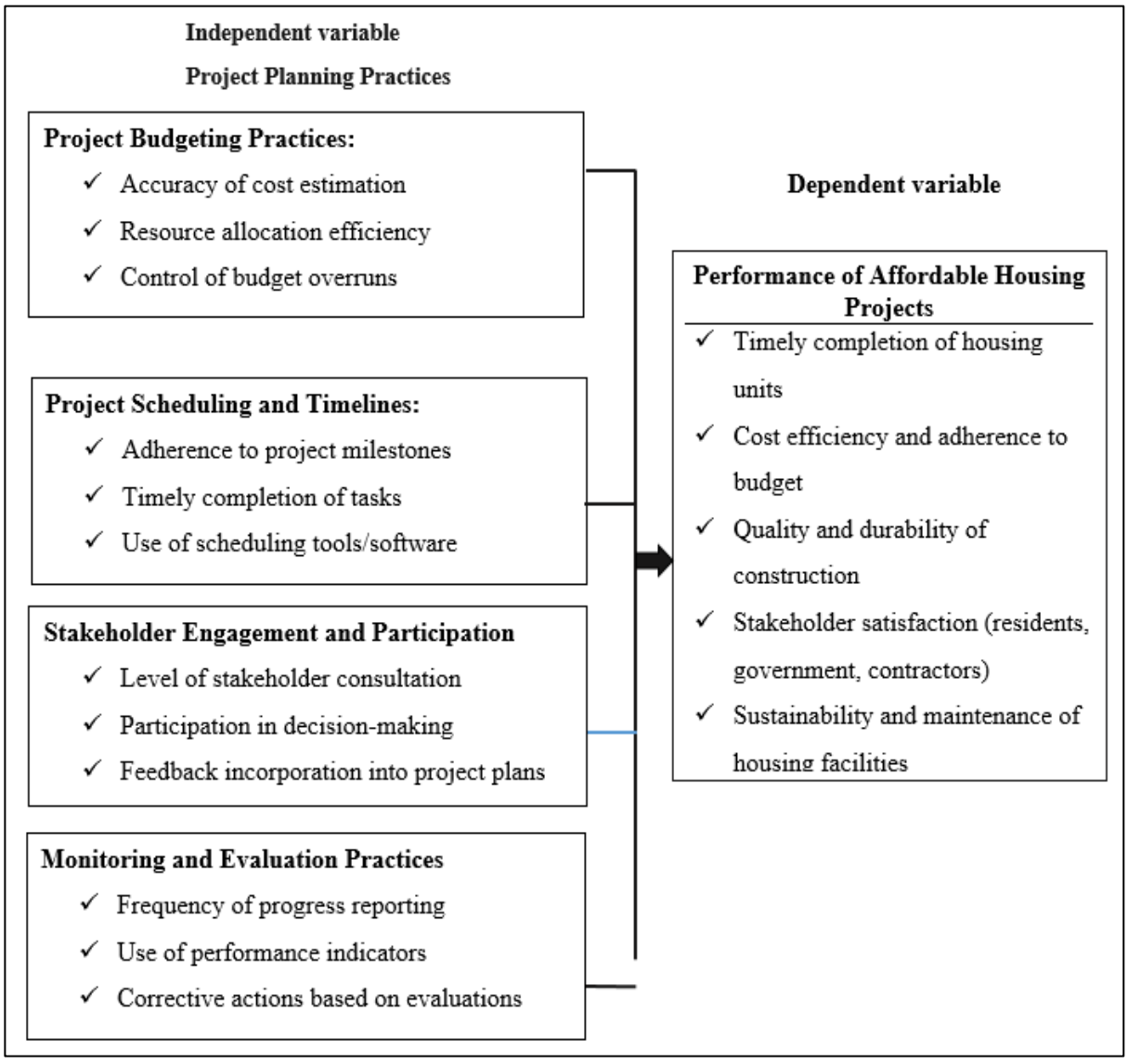


Fig 1 Conceptual Framework
Source: Researcher (2025) Conceptualization Based on Literature Reviewed

III. RESEARCH DESIGN AND METHODS

It presents the research design, study population, sample size and sampling method, data collection instruments, procedures for ensuring validity and reliability, data analyzing techniques, ethical considerations, and likely limitations of the study.

➢ *Research Design*

Through its descriptive and correlational research design, the study combines both methodological explorative and analytic aspects to enrich understanding of project planning practices and their effects on the performance of projects. Quantitative data were obtained if questionnaires are set out in advance, as these gather quantifiable data from project managers, engineers, technical staff and other

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/26sep843

stakeholders. Qualitative data, obtained through semi-structured interviews and document review, provides richer, fuller insights into the experiences, difficulties encountered and background factors shaping project planning practices and their consequences.

➢ *Sample Size and Sampling Methods*

Taro Yamane in 1982 established the formula was used to find a sample size suitable for this research. This formula allowed one to use sample sizes calculated as small and practical as possible for finite populations which combines both accuracy and practicality. The equation is:

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

Where n = the aim sample size; N = the population size overall; e = acceptable margin of error (precision level);

In this research the total set of stakeholders (N) in the Mpazi Affordable Housing Project is 200 that consisted of management, engineers, specialist, government, community and consultant. In consideration for appropriate trade-off between reliability and efficiency in social science research, a 5% (0.05) error margin (e) level is adopted. Adding the values to the formula:

$$n= \frac{200}{1+200*0.05^2} = 133 \text{ respondents}$$

The study arrives at a sample size of 133 respondents, calculated using Yamane's formula to ensure that the number of participants is statistically reliable while still practical for the data collection process.

After establishing the strata, random sampling is used within each group to select individuals who would participate in the survey.

➢ *Data Collection Instruments*

Direct data from those in the private sector working on affordable housing projects (e.g., project managers, engineers, financial officers, community members and consultants) were gathered. The questionnaire consists of close-ended questions concerning project budgeting, project schedule, stakeholder involvement, and monitoring. It features a total of 5 Likert scales (strongly agree to strongly disagree), multiple choice, and ranking questions asking us how we see the impact of those practices in project life like timeliness, cost effectiveness, quality, and stakeholder satisfaction. This tool enables the research to produce data that can be statistically examined on the effectiveness of planning practices.

➢ *Data Analysis Methods*

This study was using SPSS to perform both descriptive and inferential statistical analysis to provide an overview of trends, relationships, and predictive effects. Descriptive statistics were used to distill the perceptions of stakeholders on project planning practices, such as budgeting, scheduling, stakeholder engagement, and monitoring and evaluation. Mean scores and standard deviations gave the mean, standard deviation and variability of each practice in how well it added to the project performance measures.

The correlation coefficient (r) is performed. Positive correlation between the two measures implied the positive effect of better planning and performance outcomes and negative correlation indicated the inverse effect on performance. Several linear regression analyses were performed to confirm the predictive power of each of the project planning practices on the final affordable housing project performance. The regression model is computed as:

$$Y=\beta 0+\beta 1x1+\beta 2x2+\beta 3x3+\beta 4x4+\varepsilon.$$

Where,

Y =performance of projects in affordable housing.

X1 = Budgeting practices; X2 = Scheduling and timelines;

X3= Stakeholder engagement and participation;

X4= Monitoring and evaluation practices; β0 = Intercept; β1-β4 = Regression coefficients. ε = Error term.

IV. RESULTS AND DISCUSSIONS

The study involved 133 respondents drawn from both internal and external stakeholders associated with the project, representing a response rate of 100%. Internal stakeholders included project managers, engineers, financial officers, and monitoring personnel directly involved in project implementation, while external stakeholders comprised government officials, community representatives, local leaders, and consultants who provide oversight and advisory support. Data analysis was carried out using SPSS version 23.0 through both descriptive and inferential statistical techniques. The chapter specifically examines the effect of project budgeting, scheduling and timelines, stakeholder engagement, and monitoring and evaluation practices on the performance of affordable housing projects in Rwanda. The presentation of findings follows a systematic and logical structure to support effective interpretation and discussion.

➢ *Socio-Demographic Characteristic of Respondents*

This section presents the socio-demographic characteristics of the respondents who participated in the study. The analysis focused on respondents' age, gender, level of education, department, and work experience.

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/26sep843

Table 1 Socio-Demographic Characteristics of Respondents

Variable	Category	Frequency (f)	Percentage (%)
Age of Respondents	Less than 30 years	31	23.3
	31-40 years	48	36.1
	41-50 years	41	30.8
	More than 50 years	13	9.8
	Total	**133**	**100.0**
Gender of Respondents	Male	83	62.4
	Female	50	37.6
	Total	**133**	**100.0**
Level of Education	PhD	6	4.5
	Master's Degree	25	18.8
	Bachelor's Degree	74	55.6
	Certificate or Diploma	28	21.1
	Total	**133**	**100.0**
Department/units	Management of Projects	53	39.8
	Operations in Engineering and Technology	33	24.8
	Planning and Scheduling	20	15.0
	Finance and Purchasing	13	9.8
	Others	14	10.5
	Total	**133**	**100.0**
Work Experience	Not more than 1 year	4	3.0
	1-5 years	20	15.0
	6-10 years	65	48.9
	More than 10 years	44	33.1
	Total	**133**	**100.0**

Source: Field Data (2026)

As presented in Table 1, the majority of the respondents, 48 (36.1%), were aged between 31 and 40 years, followed by 41 respondents (30.8%) who were between 41 and 50 years. Respondents aged less than 30 years accounted for 31 (23.3%), while only 13 respondents (9.8%) were above 50 years. The findings suggest that most participants were within the active and productive working-age group, indicating that they possessed sufficient professional experience and knowledge relevant to the study.

Regarding gender distribution, the results show that 83 respondents (62.4%) were male, while 50 respondents (37.6%) were female.

In terms of educational level, the majority of respondents, 74 (55.6%), held Bachelor's degrees, followed by 28 respondents (21.1%) with certificates or diplomas. Respondents with Master's degrees accounted for 25 (18.8%), while only 6 respondents (4.5%) possessed PhD qualifications.

With regard to departmental affiliation, 53 respondents (39.8%) were from the Management of Projects department, while 33 respondents (24.8%) worked in Operations in Engineering and Technology. In addition, 20 respondents (15.0%) were from Planning and Scheduling, 13 respondents (9.8%) were from Finance and Purchasing, and 14 respondents (10.5%) belonged to other departments.

Concerning work experience, the majority of respondents, 65 (48.9%), had worked in construction or affordable housing projects for 6–10 years, while 44 respondents (33.1%) had more than 10 years of experience. Furthermore, 20 respondents (15.0%) had between 1 and 5 years of experience, and only 4 respondents (3.0%) had less than one year of experience.

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/26sep843

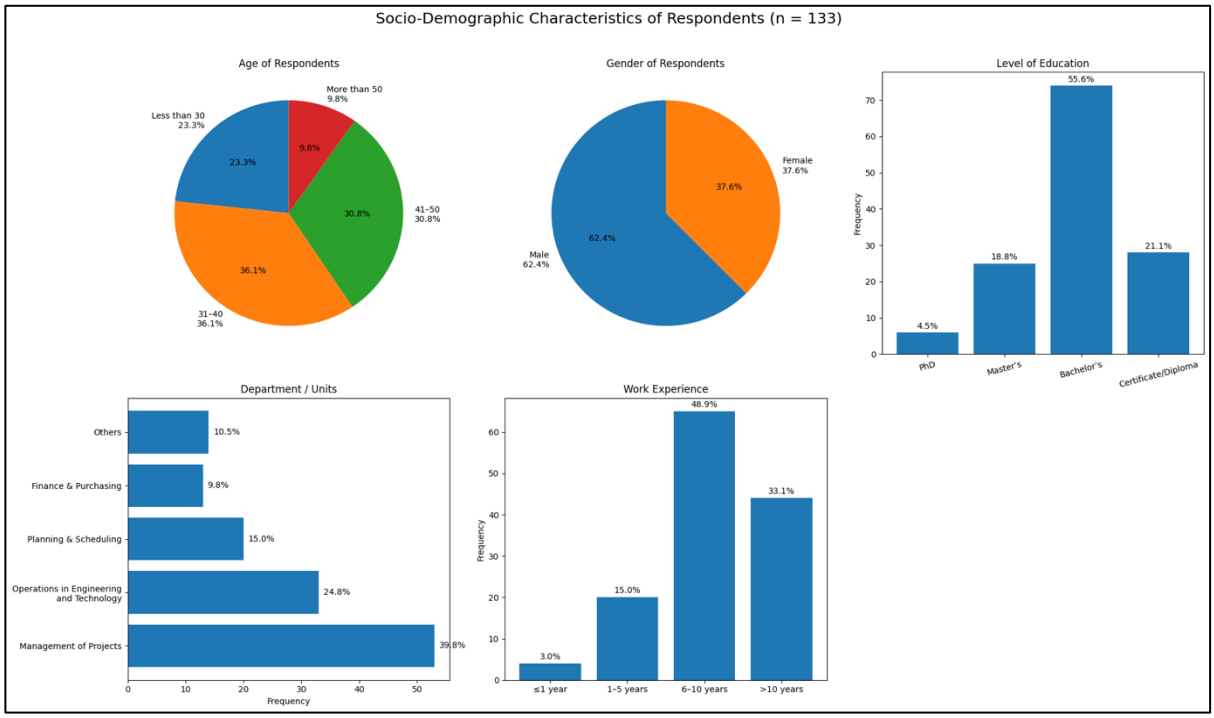


Fig 2 Socio-Demographic Characteristics of Respondents

The socio-demographic findings imply that the study obtained reliable and credible information from respondents who were knowledgeable, experienced, and actively involved in affordable housing project activities. The majority of respondents were within the productive working-age group of 31-50 years, indicating adequate professional exposure and understanding of project planning practices and project performance. The dominance of male respondents suggests that the construction and affordable housing sector remains male-oriented, which may influence project implementation perspectives. Furthermore, the high proportion of respondents with Bachelor's and Master's degrees demonstrates that participants possessed sufficient academic and professional competence to provide accurate and informed responses.

➢ *Inferential Statistical Analysis Results*

The analysis included normality tests, correlation analysis, and regression analysis to determine the suitability of the data and the extent to which project planning practices influence the performance of affordable housing projects in Rwanda. The inferential results provide deeper statistical evidence on the strength, direction, and significance of the relationships between budgeting practices, scheduling and timelines, stakeholder engagement and participation, monitoring and evaluation practices, and project performance.

➢ *Normality Test Results*

The findings revealed noticeable negative skewness and high kurtosis values, indicating that the data were not perfectly normally distributed. In addition, the significance values obtained from both the Kolmogorov-Smirnov and Shapiro-Wilk tests were less than 0.05, confirming the presence of non-normality in the data distribution.

Table 2 Descriptives

			Statistic	**Std. Error**
Performance of projects in affordable housing	Mean		75.9323	.61797
	95% Confidence Interval for Mean	Lower Bound	74.7099	
		Upper Bound	77.1547	
	5% Trimmed Mean		76.9123	
	Median		80.0000	
	Variance		50.791	
	Std. Deviation		7.12677	
	Minimum		44.00	
	Maximum		80.00	
	Range		36.00	
	Interquartile Range		7.00	
	Skewness		-2.472	.210
	Kurtosis		7.465	.417

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/26sep843

The descriptive statistics indicate that the average performance score of affordable housing projects was relatively high (Mean = 75.9323, Std. Error = 0.61797), suggesting that respondents generally perceived project performance positively. The 95% confidence interval for the mean ranged between 74.7099 and 77.1547, indicating that the true population mean was likely to fall within this range. The trimmed mean was also relatively close to the actual mean (5% Trimmed Mean = 76.9123), implying that extreme values had minimal influence on the overall average score. In addition, the median score was high (Median = 80.0000), showing that more than half of the respondents rated project performance highly.

The findings further revealed moderate variation in responses, as reflected by the variance and standard deviation values (Variance = 50.791, Std. Deviation = 7.12677). This suggests that although respondents generally agreed on the positive performance of affordable housing projects, some differences existed in individual perceptions. The minimum and maximum scores ranged from 44.00 to 80.00 (Minimum = 44.00, Maximum = 80.00), producing a range of 36.00 and an interquartile range of 7.00. These findings indicate that the responses were moderately spread but largely concentrated around the upper scores.

The distribution was negatively skewed (Skewness = -2.472, Std. Error = 0.210), indicating that most respondents provided high ratings regarding project performance. The high positive kurtosis value (Kurtosis = 7.465, Std. Error = 0.417) suggests that the distribution was highly peaked, meaning that responses were strongly concentrated around the higher values. This pattern implies that respondents shared relatively similar positive perceptions concerning the performance of affordable housing projects in Rwanda.

Table 3 Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
performance of projects in affordable housing	.332	133	.000	.630	133	.000
a. Lilliefors Significance Correction						

The Kolmogorov-Smirnov test showed a statistically significant result (Statistic = 0.332, df = 133, Sig. = 0.000), while the Shapiro-Wilk test also produced a significant result (Statistic = 0.630, df = 133, Sig. = 0.000). Since the significance values for both tests were less than 0.05, the null hypothesis of normal distribution was rejected. This indicates that the data on project performance deviated significantly from normality.

➢ *Performance of Projects in Affordable Housing*

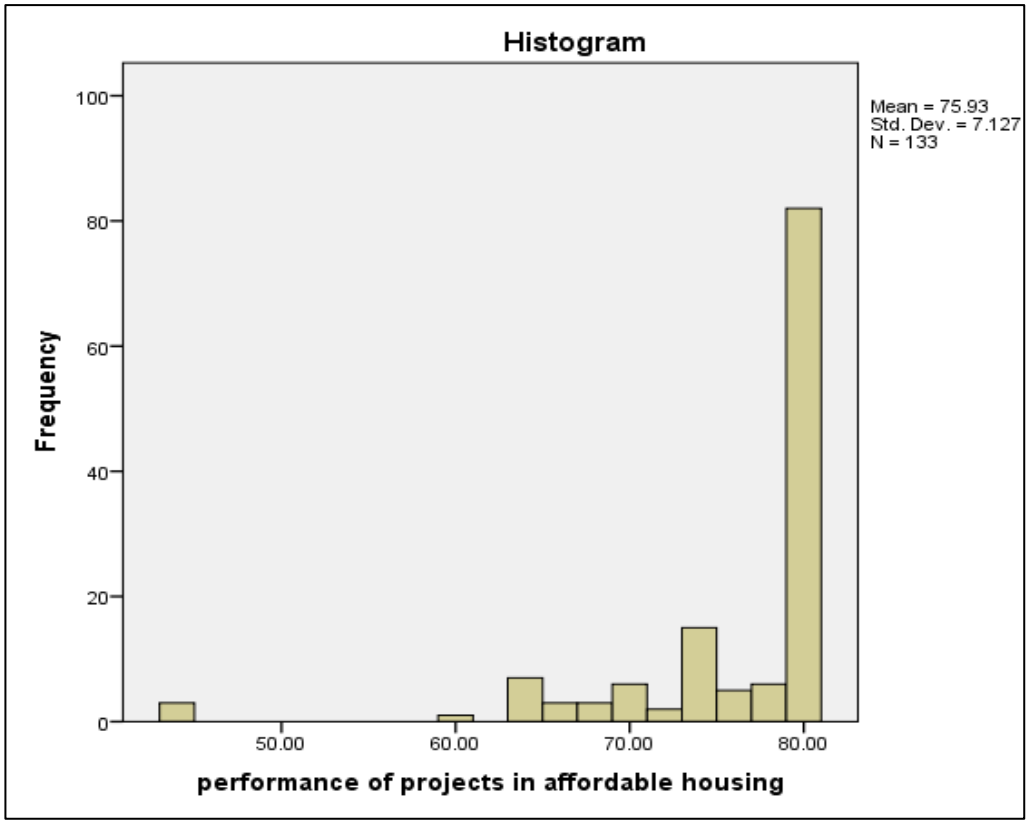
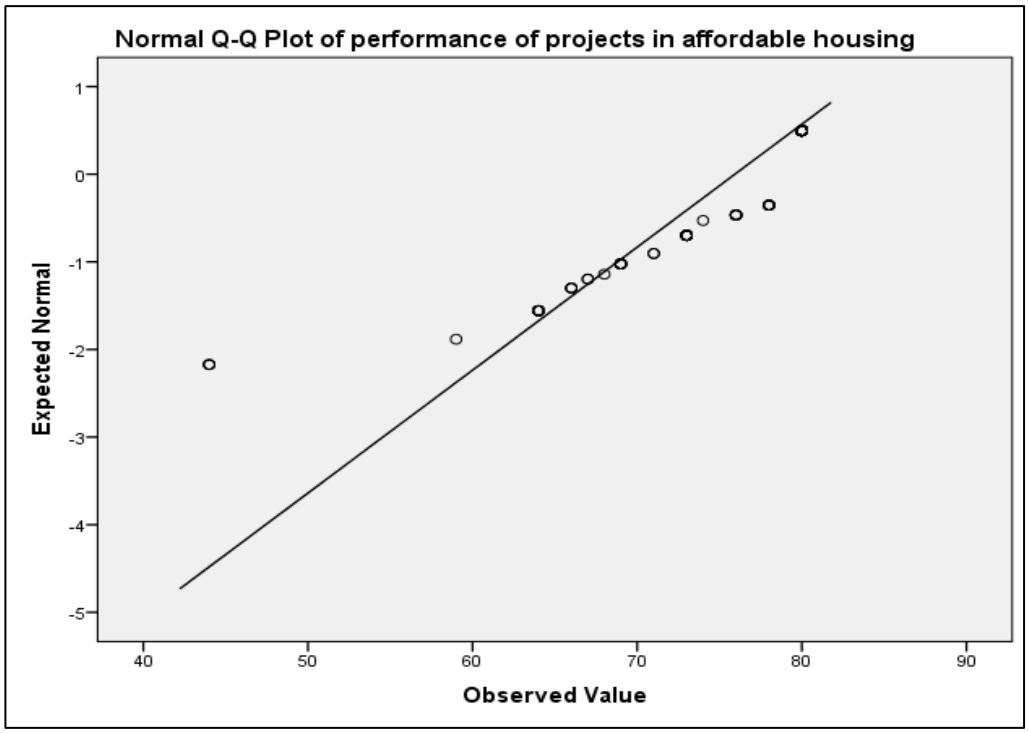


Fig 3 Performance of Projects in Affordable Housing Stem-and-Leaf Plot

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/26sep843

- Frequency Stem & Leaf

✓ 4.00 Extremes (=<59.0)
✓ 7.00 64 . 0000000
✓ .00 65 .
✓ 3.00 66 . 000
✓ 2.00 67 . 00
✓ 68 . 0
✓ 6.00 69 . 000000
✓ .00 70 .
✓ 2.00 71 . 00
✓ .00 72 .
✓ 14.00 73 . 00000000000000
✓ 74 . 0
✓ .00 75 .
✓ 5.00 76 . 00000
✓ .00 77 .
✓ 6.00 78 . 000000
✓ .00 79 .
✓ 82.00 80 . 00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
✓ Stem width: 1.00
✓ Each leaf: 1 case



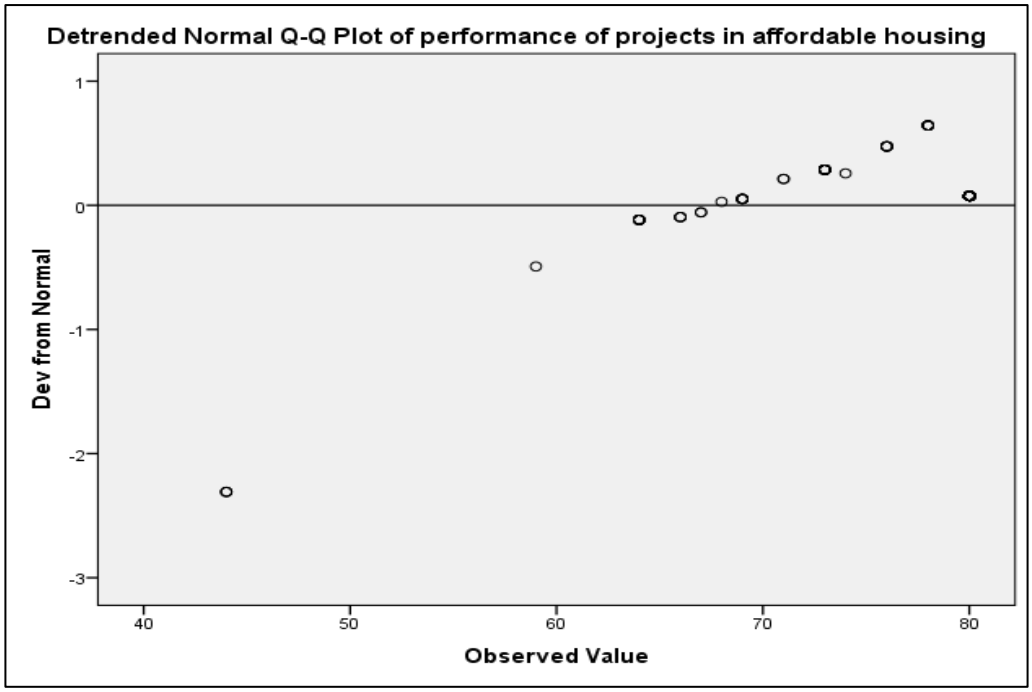


Fig 4 Normal Q-Q Plot and Detrendent Q-Q Plot of Performance of Projects in Affordable Housing

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/26sep843

The graphical presentations shown in the stem-and-leaf plot and the Normal Q-Q Plot further support these findings. The stem-and-leaf plot revealed that a large proportion of responses were concentrated at the higher performance scores, particularly around the value of 80, indicating clustering of responses toward strong agreement. Similarly, the Normal Q-Q Plot and detrended Q-Q Plot showed noticeable deviations from the straight reference line, confirming the existence of non-normality in the data distribution.

➢ *Correlational Analysis Results*

The significance values below 0.01 further indicate that the observed relationships were statistically reliable and unlikely to have occurred by chance.

Table 4 Correlations Coefficient Matrix Results

			Budgeting practices	**Scheduling and timelines**	**Stakeholder engagement and participation**	**Monitoring and evaluation practices**	**Project planning practices**	**performance of projects in affordable housing**
Spearman's rho	**Budgeting practices**	Correlation Coefficient	1.000					
		Sig. (2-tailed)	.					
		N	133					
	Scheduling and timelines	Correlation Coefficient	.889**	1.000				
		Sig. (2-tailed)	.000	.				
		N	133	133				
	Stakeholder engagement and participation	Correlation Coefficient	.929**	.841**	1.000			
		Sig. (2-tailed)	.000	.000	.			
		N	133	133	133			
	Monitoring and evaluation practices	Correlation Coefficient	.694**	.596**	.725**	1.000		
		Sig. (2-tailed)	.000	.000	.000	.		
		N	133	133	133	133		
	Project planning practices	Correlation Coefficient	.765**	.701**	.777**	.945**	1.000	
		Sig. (2-tailed)	.000	.000	.000	.000	.	
		N	133	133	133	133	133	133
	Performance of projects in affordable housing	Correlation Coefficient	.965**	.922**	.942**	.714**	.773**	1.000
		Sig. (2-tailed)	.000	.000	.000	.000	.000	.
		N	133	133	133	133	133	133
**. Correlation is significant at the 0.01 level (2-tailed).								

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/26sep843

Since all significance values were less than 0.01, the relationships observed were statistically significant at the 1% level, suggesting that the correlations were unlikely to have occurred by chance. Most importantly, the findings revealed strong positive relationships between project planning variables and the performance of affordable housing projects. Budgeting practices had the strongest positive correlation with project performance (r = 0.965, p = 0.000, N = 133), indicating that effective budgeting is highly associated with improved project outcomes. Scheduling and timelines also demonstrated a very strong positive relationship with project performance (r = 0.922, p = 0.000, N = 133), suggesting that proper time management contributes significantly to successful project delivery. Stakeholder engagement and participation similarly showed a strong positive relationship with project performance (r = 0.942, p = 0.000, N = 133), implying that involving stakeholders enhances project acceptance, coordination, and implementation success.

Monitoring and evaluation practices also had a positive and statistically significant relationship with project performance (r = 0.714, p = 0.000, N = 133), indicating that continuous monitoring contributes to improved project efficiency and sustainability. Finally, the overall project planning practices variable was strongly related to project performance (r = 0.773, p = 0.000, N = 133), confirming that effective planning practices are essential for enhancing the performance of affordable housing projects in Rwanda.

➢ *Regression Analysis Results*

The regression coefficients showed that budgeting practices had the strongest positive contribution to project performance, while scheduling and timelines, stakeholder engagement and participation, and monitoring and evaluation practices also contributed positively to the model. The collinearity diagnostics indicated that multicollinearity was within acceptable limits, suggesting that the independent variables were suitable for inclusion in the regression model.

Table 5 Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.831[a]	.691	.681	4.02224	1.788
a. Predictors: (Constant), Monitoring and evaluation practices, Scheduling and timelines, Stakeholder engagement and participation, Budgeting practices					
b. Dependent Variable: performance of projects in affordable housing					

The model correlation coefficient revealed a strong positive relationship between the predictor variables and the performance of affordable housing projects (R = 0.831). This indicates that project planning practices collectively have a strong association with project performance outcomes.

The coefficient of determination further showed that the independent variables explained a substantial proportion of the variation in project performance (R Square = 0.691). This means that approximately 69.1% of the changes in the performance of affordable housing projects could be explained by the combined influence of budgeting practices, scheduling and timelines, stakeholder engagement and participation, and monitoring and evaluation practices. The remaining 30.9% of the variation may be attributed to other factors not included in the regression model.

The adjusted coefficient of determination also remained high (Adjusted R Square = 0.681), indicating that the regression model maintained strong explanatory power even after adjusting for the number of predictor variables included in the analysis. This suggests that the model was stable and reliable in explaining the relationship between project planning practices and project performance. In addition, the standard error of the estimate was relatively low (Std. Error of the Estimate = 4.02224), implying that the predicted values generated by the model were close to the actual observed values. Furthermore, the Durbin-Watson statistic was within the acceptable range (Durbin-Watson = 1.788), indicating the absence of serious autocorrelation problems among the residuals. Since the Durbin-Watson value was close to 2, the findings suggest that the residual errors were independent and that the regression assumptions were adequately satisfied.

Table 6 ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4633.554	4	1158.388	71.601	.000[b]
	Residual	2070.837	128	16.178		
	Total	6704.391	132			
a. Dependent Variable: performance of projects in affordable housing						
b. Predictors: (Constant), Monitoring and evaluation practices, Scheduling and timelines, Stakeholder engagement and participation, Budgeting practices						

The ANOVA results revealed that the regression model was highly significant, indicating that the predictor variables collectively had a meaningful effect on project performance. The regression sum of squares was relatively high (Regression Sum of Squares = 4633.554, df = 4, Mean Square = 1158.388), showing that a substantial portion of the variation in project performance was explained by the independent variables included in the model.

The residual sum of squares was comparatively lower (Residual Sum of Squares = 2070.837, df = 128, Mean Square = 16.178), indicating that only a smaller proportion of variation in project performance remained unexplained by the model. This finding suggests that budgeting practices, scheduling and timelines, stakeholder engagement and participation, and monitoring and evaluation practices

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/26sep843

collectively contributed significantly toward explaining project performance outcomes in affordable housing projects.

The total variation observed in the dependent variable was represented by the total sum of squares (Total Sum of Squares = 6704.391, df = 132), reflecting the overall variability in project performance responses obtained from respondents. The findings further revealed that the regression model produced a very high F-statistic value (F = 71.601), which indicates that the overall regression equation was statistically reliable in predicting the performance of affordable housing projects. In addition, the significance value associated with the model was less than 0.05 (Sig. = 0.000), demonstrating that the regression model was statistically significant.

Table 7 Regression Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	12.652	4.462		2.835	.005		
	Budgeting practices	3.537	.343	.860	10.309	.000	.346	2.887
	Scheduling and timelines	.206	.379	.045	.544	.003	.360	2.778
	Stakeholder engagement and participation	.011	.049	.013	.217	.002	.702	1.424
	Monitoring and evaluation practices	.028	.026	.062	1.104	.001	.761	1.314
a. Dependent Variable: performance of projects in affordable housing								

The constant term of the regression model was positive and statistically significant (B = 12.652, Std. Error = 4.462, t = 2.835, Sig. = 0.005). This implies that when all project planning practices are held constant at zero, the baseline performance level of affordable housing projects would still remain positive at 12.652 units.

The findings further revealed that budgeting practices had the strongest positive effect on the performance of affordable housing projects (B = 3.537, Std. Error = 0.343, Beta = 0.860, t = 10.309, Sig. = 0.000). This means that a one-unit improvement in budgeting practices would lead to an increase of approximately 3.537 units in the performance of affordable housing projects, assuming all other variables remain constant.

Scheduling and timelines also showed a positive and statistically significant effect on project performance (B = 0.206, Std. Error = 0.379, Beta = 0.045, t = 0.544, Sig. = 0.003). This implies that a one-unit increase in effective scheduling and timeline management would result in an increase of approximately 0.206 units in project performance while holding other factors constant.

Similarly, stakeholder engagement and participation demonstrated a positive contribution to project performance (B = 0.011, Std. Error = 0.049, Beta = 0.013, t = 0.217, Sig. = 0.002). This indicates that a one-unit improvement in stakeholder engagement and participation would increase the performance of affordable housing projects by approximately 0.011 units, assuming other variables remain unchanged.

Monitoring and evaluation practices also had a positive and statistically significant effect on the performance of affordable housing projects (B = 0.028, Std. Error = 0.026, Beta = 0.062, t = 1.104, Sig. = 0.001). This means that a one-unit improvement in monitoring and evaluation practices would increase project performance by approximately 0.028 units while holding the other variables constant.

The tolerance values for all variables were above the minimum acceptable threshold of 0.1, while the Variance Inflation Factor (VIF) values were all below 10. Specifically, budgeting practices had a tolerance value of 0.346 and a VIF value of 2.887, scheduling and timelines had a tolerance of 0.360 and VIF of 2.778, stakeholder engagement and participation had a tolerance of 0.702 and VIF of 1.424, while monitoring and evaluation practices had a tolerance of 0.761 and VIF of 1.314.

Table 8 Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions				
				(Constant)	Budgeting practices	Scheduling and timelines	Stakeholder engagement and participation	Monitoring and evaluation practices
1	1	4.690	1.000	.00	.00	.00	.00	.01
	2	.219	4.631	.00	.00	.00	.01	.65
	3	.086	7.381	.00	.00	.00	.94	.33
	4	.004	32.996	.89	.19	.04	.04	.01
	5	.001	58.015	.10	.80	.96	.00	.01
a. Dependent Variable: performance of projects in affordable housing								

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/26sep843

The findings revealed that the first dimension had the highest eigenvalue (Eigenvalue = 4.690) with a condition index of 1.000. This indicates strong explanatory power within the regression model and suggests that the first dimension accounted for the largest proportion of variance among the predictor variables. The variance proportions for the variables under this dimension were very low, implying that no serious multicollinearity problem existed at this level.

The second dimension produced a relatively smaller eigenvalue (Eigenvalue = 0.219) and a condition index of 4.631. The variance proportions showed that monitoring and evaluation practices accounted for a relatively larger proportion of variance under this dimension (Variance Proportion = 0.65). However, the condition index remained below the critical threshold of 10, indicating that multicollinearity was still not a major concern. This finding suggests that monitoring and evaluation practices maintained acceptable independence from the other predictor variables in the model.

Similarly, the third dimension showed a lower eigenvalue (Eigenvalue = 0.086) with a condition index of 7.381. The findings further revealed that stakeholder engagement and participation had a high variance proportion under this dimension (Variance Proportion = 0.94), while monitoring and evaluation practices contributed a variance proportion of 0.33. Despite these relatively high variance proportions, the condition index remained below the commonly accepted threshold of 10, indicating that the relationship among the predictor variables was still within acceptable limits. This suggests that stakeholder engagement and participation maintained sufficient uniqueness within the regression model.

The fourth dimension revealed a much smaller eigenvalue (Eigenvalue = 0.004) with a higher condition index (Condition Index = 32.996). The variance proportions under this dimension indicated that the constant term contributed the largest proportion of variance (Variance Proportion = 0.89), while budgeting practices contributed a smaller proportion (Variance Proportion = 0.19). Although the condition index exceeded the threshold of 30, the absence of multiple variables simultaneously exhibiting high variance proportions suggests that severe multicollinearity was not present. This implies that the regression coefficients remained stable and reliable despite the higher condition index value.

The fifth dimension produced the smallest eigenvalue (Eigenvalue = 0.001) and the highest condition index (Condition Index = 58.015). The variance proportions indicated that scheduling and timelines accounted for the highest proportion of variance (Variance Proportion = 0.96), while budgeting practices accounted for a substantial variance proportion of 0.80. A.

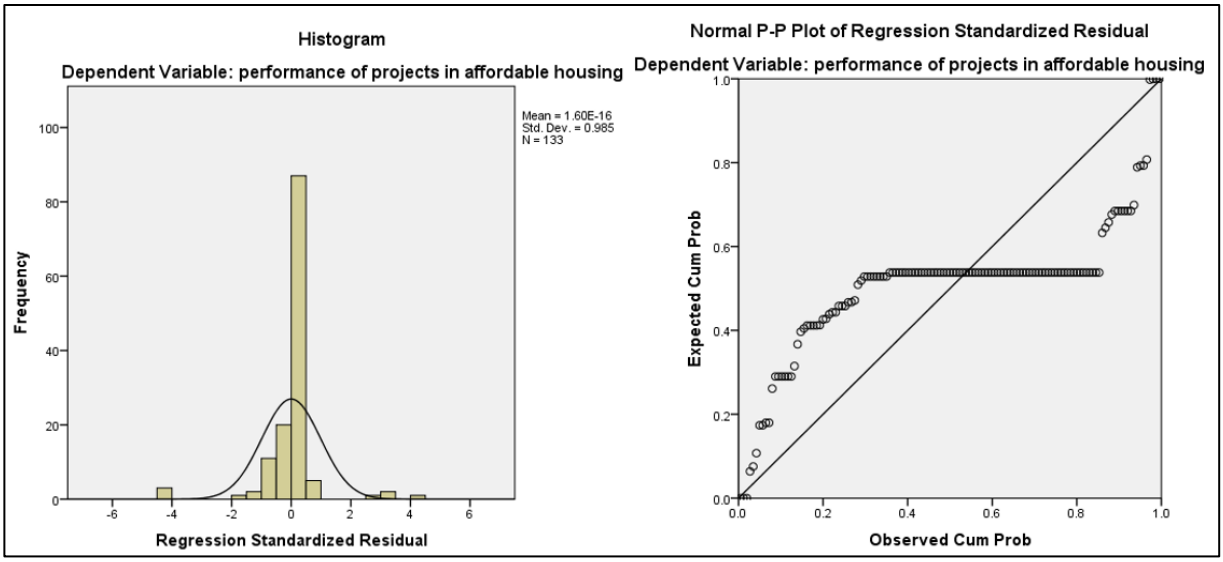


Fig 5 Normal P-P Plot of Performance of Projects in Affordable Housing

➢ *Hypotheses Testing Results*

Regarding the first hypothesis, which stated that project budgeting practices have a statistically significant effect on the performance of affordable housing projects in Rwanda (H_1), the findings revealed that budgeting practices had a positive and statistically significant effect on project performance (B = 3.537, Beta = 0.860, t = 10.309, Sig. = 0.000). Since the significance value was less than 0.05, the null hypothesis was rejected and the alternative hypothesis was accepted. Specifically, a one-unit improvement in budgeting practices was associated with an increase of approximately 3.537 units in project performance, holding other factors constant. The findings therefore confirm that proper cost estimation, financial control, and resource allocation are critical for successful project implementation.

Concerning the second hypothesis, which stated that project scheduling and timelines have a statistically significant impact on the performance of affordable housing projects in Rwanda (H_2), the findings showed that scheduling and timelines positively influenced project performance (B = 0.206, Beta = 0.045, t = 0.544, Sig. = 0.003). Since the significance value was below 0.05, the null hypothesis was rejected and the alternative hypothesis was accepted. The

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/26sep843

findings imply that a one-unit improvement in scheduling and timelines would increase project performance by approximately 0.206 units while holding other variables constant.

With regard to the third hypothesis, which stated that stakeholder engagement and participation have a statistically significant influence on the performance of affordable housing projects in Rwanda (H_3), the findings revealed a positive and statistically significant relationship between stakeholder engagement and project performance (B = 0.011, Beta = 0.013, t = 0.217, Sig. = 0.002). Since the significance value was less than 0.05, the null hypothesis was rejected and the alternative hypothesis was accepted.

This suggests that stakeholder involvement significantly contributes to improved project performance. The findings further imply that a one-unit improvement in stakeholder engagement and participation would lead to an increase of approximately 0.011 units in project performance while holding other factors constant.

The results therefore confirm that involving stakeholders in project planning, communication, and decision-making processes enhances project acceptance, transparency, and implementation success.

Regarding the fourth hypothesis, which stated that monitoring and evaluation practices have a statistically significant effect on the performance and sustainability of affordable housing projects in Rwanda (H_4), the findings indicated that monitoring and evaluation practices positively and significantly influenced project performance (B = 0.028, Beta = 0.062, t = 1.104, Sig. = 0.001). Since the significance value was below 0.05, the null hypothesis was rejected and the alternative hypothesis was accepted.

V. CONCLUSION AND RECOMMENDATIONS

- *Conclusion*

Based on the findings of the study, it is concluded that project planning practices significantly influence the performance of affordable housing projects in Rwanda. Effective budgeting practices improve financial control, resource allocation, and cost efficiency, thereby enhancing project implementation and reducing financial risks.

Similarly, proper scheduling and timeline management improve coordination of activities, minimize delays, and ensure timely completion of projects.

The study further concludes that stakeholder engagement and participation strengthen communication, transparency, collaboration, and project acceptance, which contribute positively to project performance and sustainability.

In addition, monitoring and evaluation practices improve accountability, facilitate timely identification of challenges, and support continuous improvement of project activities.

The study therefore concludes that successful implementation and sustainability of affordable housing projects depend largely on the effectiveness of project planning practices.

Strengthening integrated planning systems can significantly improve project performance, operational efficiency, service delivery, and long-term sustainability of affordable housing initiatives in Rwanda.

- *Recommendations*

Project managers and housing developers should strengthen budgeting systems by improving cost estimation techniques, conducting regular budget reviews, and establishing effective financial monitoring mechanisms. This would help minimize financial shortages, improve resource allocation, and enhance cost control during project implementation.

Project managers should also strengthen project scheduling and timeline management by adopting modern scheduling tools and ensuring continuous monitoring of project progress.

Proper coordination of project activities and timely response to delays would improve project completion rates and operational efficiency.

Affordable housing project implementers should promote inclusive stakeholder participation throughout all phases of project implementation.

Stakeholders should be consulted regularly during planning, implementation, and evaluation stages to improve transparency, trust, and project acceptance. Effective communication mechanisms should also be strengthened to ensure timely sharing of project information and quick resolution of stakeholder concerns.

Project implementers should strengthen monitoring and evaluation systems by establishing clear performance indicators, conducting regular project reviews, and using monitoring findings to improve decision-making processes.

Investment in digital monitoring technologies and data management systems should also be encouraged to improve project tracking, accountability, and sustainability.

The Government of Rwanda and relevant housing institutions should develop policies that strengthen integrated project planning practices within affordable housing programs.

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/26sep843

REFERENCES

[1]. Adebayo, T., & Okonkwo, J. (2020). Project planning frameworks for infrastructure development in Africa. Journal of African Infrastructure, 12(3), 45–62;

[2]. Adeyemi, S. (2021). Budgeting and cost management in African housing projects. African Journal of Construction Economics, 8(2), 88–102;

[3]. African Development Bank (AfDB). (2023). Annual report on housing and infrastructure in Africa. Abidjan: AfDB;

[4]. Agency for Housing Finance in Africa (CAHF). (2022). State of Housing Finance in Africa Report. Johannesburg: CAHF;

[5]. Aluoch, J., & Ochieng, P. (2020). Scheduling practices in African housing projects. International Journal of Project Planning, 7(1), 33–47;

[6]. Barney, J. (1991). Firm resources and sustained competitive advantage. Journal of Management, 17(1), 99–120;

[7]. Carter, L., & Jones, P. (2023). Community consultations and sustainable housing in the UK. Journal of Urban Policy, 29(4), 56–74;

[8]. Chan, A., & Adabre, M. (2020). Resources and capabilities in housing project delivery. Construction Management Review, 36(2), 78–94;

[9]. Chen, Y., & Xu, L. (2020). Housing delivery timelines and community trust. Asian Housing Studies, 14(2), 100–115;

[10]. Chen, Z., Wang, L., & Xu, J. (2024). Housing project sustainability and performance indicators. International Journal of Construction Studies, 11(2), 65–80.

[11]. Chileshe, N., et al. (2020). Stakeholder participation and project efficiency: Evidence from South Africa and Zambia. Journal of Construction in Developing Countries, 25(1), 47–62.

[12]. Crawford, P., & Bryce, P. (2019). Project monitoring and evaluation for accountability. Project Management Journal, 50(5), 39–53.

[13]. Creswell, J. W., & Creswell, J. D. (2023). Research design: Qualitative, quantitative, and mixed methods approaches (6th ed.). Thousand Oaks, CA: Sage.

[14]. Eadie, R., et al. (2019). Quality standards in affordable housing construction. Building Research & Information, 47(6), 654–668.

[15]. El-Gohary, N., Osman, H., & El-Diraby, T. (2006). Stakeholder management in infrastructure projects. Construction Engineering and Management Journal, 132(8), 787–798.

[16]. European Commission. (2023). Affordable housing and urban development report. Brussels: European Union.

[17]. Freeman, R. E. (1984). Strategic management: A stakeholder approach. Boston: Pitman.

[18]. Freeman, R. (2019). Stakeholder theory and housing development. Oxford: Oxford University Press.

[19]. Gabriel, S., & Kung, E. (2024). Approval timelines and housing supply: Evidence from Los Angeles. Urban Economics Review, 52(3), 187–210.

[20]. Gashaw, A., et al. (2021). Housing project performance in Sub-Saharan Africa. African Construction Journal, 13(2), 56–70.

[21]. Habimana, J. (2021). Monitoring and evaluation in Kigali housing projects. Rwanda Journal of Development Studies, 9(2), 122–138;

[22]. Habimana, J. (2022). Budgeting practices in Rwanda's housing projects. Kigali: RHA Publications;

[23]. Habimana, J., & Uwizeyimana, P. (2022). Governance bottlenecks in Rwanda's housing sector. Rwanda Policy Review, 4(2), 91–110;

[24]. Habimana, J., & Niyitegeka, E. (2024). Stakeholder satisfaction in Rwanda's housing projects. Journal of Urban Housing Research, 6(2), 55–72;

[25]. Housing and Urban Development (HUD). (2024). Annual Housing Report. Washington, D.C.: U.S. Department of Housing and Urban Development.

[26]. Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs, and ownership structure. Journal of Financial Economics, 3(4), 305–360.

[27]. Johnson, S., et al. (2020). Accessibility in housing projects. Journal of Social Infrastructure, 16(3), 98–115.

[28]. Jones, T., & Murray, R. (2019). Measuring project performance. International Project Journal, 23(4), 201–218.

[29]. Kamara, F. (2020). M&E systems in African housing programs. African Journal of Housing, 12(1), 44–59.

[30]. Karanja, D., & Otieno, P. (2021). Affordable housing in Africa: Quality challenges. Journal of Housing Studies, 17(3), 221–237.

[31]. Karanja, D., & Otieno, P. (2023). Indicators of housing project performance in East Africa. Journal of Project Indicators, 14(1), 33–51.

[32]. Kerzner, H. (2019). Project management: A systems approach to planning, scheduling, and controlling. Hoboken, NJ: Wiley.

[33]. Kiplagat, S., & Njeru, K. (2021). Balancing affordability and durability in East African housing projects. East African Journal of Construction, 10(2), 77–91.

[34]. Li, H., & Zhang, Y. (2021). Housing quality standards in Asia. Construction Studies Quarterly, 19(2), 144–160.

[35]. Liang, X., & Wang, Z. (2022). Scheduling and timeline management in construction projects. Journal of Engineering Management, 14(1), 22–37.

[36]. Lock, D. (2019). Project management (10th ed.). London: Gower.

[37]. MININFRA. (2023). Smart cities and housing development report. Kigali: Ministry of Infrastructure.

[38]. MINECOFIN. (2024). Housing sector financial strategy. Kigali: Ministry of Finance and Economic Planning.

[39]. MOHURD. (2024). China affordable housing report. Beijing: Ministry of Housing and Urban-Rural Development.

[40]. Momanyi, P., & Kamau, J. (2023). Cost planning in Nairobi housing projects. Kenya Construction Journal, 9(2), 112–128.

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/26sep843

[41]. Mukamana, A., & Maniriho, J. (2021). Financing challenges in Rwanda's affordable housing sector. Rwanda Economic Review, 8(1), 64–81.
[42]. Munyaneza, P., & Gasana, J. (2021). Delays in Sub-Saharan housing projects. African Construction Review, 14(2), 75–92.
[43]. Mutabari, L., & Warui, K. (2023). Budgeting practices and financial performance of housing firms. Strategic Journals of Business, 9(3), 88–104.
[44]. Mutabazi, P. (2022). Planning strategies in Rwandan housing. Kigali: University of Rwanda Press.
[45]. Mutabazi, P., & Gasana, J. (2021). Project delays in Sub-Saharan Africa. Construction Economics, 19(2), 65–81.
[46]. Muthoni, A., & Kariuki, P. (2021). Budgeting practices in East African construction projects. East African Journal of Project Economics, 12(1), 55–69.
[47]. Muriithi, J., & Bwisa, H. (2021). Agency problems in African infrastructure projects. African Journal of Management, 13(2), 201–219.
[48]. Mwakibete, E., & Mushi, A. (2022). Community involvement in housing projects in Dar es Salaam. Tanzania Journal of Urban Studies, 7(2), 87–104.
[49]. Mwangi, D. (2021). Project timelines in East Africa. Nairobi Journal of Project Studies, 15(1), 54–70.
[50]. Mwangi, D., & Chege, J. (2023). M&E practices in Nairobi public housing. Kenya Journal of Project Management, 11(2), 72–88.
[51]. Mwangi, D., et al. (2021). Inclusiveness in East African housing projects. Journal of Housing Equity, 19(1), 31–47.
[52]. Nakato, F., & Luyiga, G. (2022). M&E and sustainability in donor housing projects. Uganda Housing Review, 8(2), 101–119.
[53]. Ndunda, J., & Waweru, K. (2023). Stakeholder engagement in Kenyan housing projects. Journal of Public Housing Studies, 17(2), 44–61.
[54]. Nguyen, T., et al. (2023). Budgeting and project efficiency in global construction. International Journal of Construction Economics, 15(2), 88–103.
[55]. Ngeno, E., & Cheruiyot, S. (2021). Stakeholder participation in East African projects. Project Engagement Journal, 14(3), 65–83.
[56]. NISR. (2021). Housing cost report. Kigali: National Institute of Statistics of Rwanda.
[57]. NISR. (2022). Gender and inclusiveness in housing report. Kigali: National Institute of Statistics of Rwanda.
[58]. NISR. (2023). Housing demand and affordability report. Kigali: National Institute of Statistics of Rwanda.
[59]. Niyonzima, C. (2021). Project planning practices in Rwanda. Kigali: Rwanda Journal of Project Studies.
[60]. OECD. (2020). M&E practices in affordable housing: Global review. Paris: OECD Publishing.
[61]. Office of the Auditor General. (2023). Annual audit report on housing projects. Kigali: OAG.
[62]. Ofori, G. (2020). Community engagement in housing projects. African Urban Review, 8(1), 76–89.
[63]. Okello, P., & Mugisha, E. (2019). Sustainability in African housing projects. Journal of Environmental Housing, 14(1), 32–47.
[64]. Oladipo, K., et al. (2023). Stakeholder participation in urban projects. Journal of Urban Management, 18(2), 77–93.
[65]. Omollo, F., & Chege, M. (2020). Community engagement and project success in Africa. African Development Review, 32(4), 665–681.
[66]. Otieno, P., & Thwala, W. (2021). Planning and coordination challenges in African housing. Construction Review Africa, 15(3), 210–229.
[67]. Otieno, P., & Wanjiku, L. (2021). M&E frameworks in East African projects. East African Project Review, 10(2), 55–71.
[68]. Polit, D. F., & Beck, C. T. (2021). Nursing research: Generating and assessing evidence for practice (11th ed.). Philadelphia: Wolters Kluwer.
[69]. Rwanda Housing Authority (RHA). (2022). Annual housing report. Kigali: RHA.
[70]. Smith, J. (2019). Agency theory and housing delivery. Journal of Management Studies, 16(4), 77–92.
[71]. Strategic Journals. (2023). Planning, budgeting, and monitoring in Kenya's public housing projects. Nairobi: Strategic Journals.
[72]. Tan, S. (2022). Housing planning models in Singapore. Singapore Journal of Urban Housing, 5(2), 12–29.
[73]. Tan, S., et al. (2023). Performance indicators in Asian housing projects. Journal of Housing and Development, 21(1), 33–49.
[74]. Turner, A., & Whitehead, C. (2019). Cost efficiency and affordability in housing. Urban Studies, 56(3), 567–584.
[75]. Tuyishime, A. (2022). Scheduling challenges in Rwanda's housing projects. Kigali Journal of Construction Studies, 8(2), 44–60.
[76]. World Bank. (2019–2022). Housing project performance reviews. Washington, D.C.: World Bank.
[77]. World Bank. (2023). Affordable housing delivery in Sub-Saharan Africa. Washington, D.C.: World Bank.