

ASSESSMENT OF DETERMINANTS OF PERFORMANCE OF HOUSING PROJECTS IN THE CONSTRUCTION INDUSTRY IN RWANDA: A SURVEY OF GATED COMMUNITIES IN KIGALI CITY

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Abstract: The rapid increase in population in Rwanda has resulted into increased rural urban migration as many graduates and rural dwellers move to the city of Kigali to search for jobs and set up businesses. This has resulted to rapid increase in demand of cheaper houses in Kigali than the supply. Adequate low cost housing is one of the short term sustainable development goals that Rwanda aims to achieve by 2020. The government rolled out a strategic plan in 2015 to attract investors in the housing sector in order to ease the pressure and provide quality and low cost housing for Kigali residents. However, houses are still in low supply for average income earner in Kigali and relatively expensive. Most of the houses are still under construction and the completed ones never meet the set duration i.e. are subject to delays. Therefore this study assessed the determinants of performance of housing projects in Rwanda with a focus on gated communities in Kigali City. The specific objectives of the study focused on the effects of stakeholder management, project team competency and project team motivation on the performance of housing projects in Rwanda. The study used descriptive survey design. A sample of 97 respondents was chosen from a population of 130 using simple random sampling design. Primary data was collected using structured questionnaires. Data collected was analyzed using SPSS version 20 and findings presented in form of tables and graphs. Regression and correlation techniques were used to establish an interaction between the independent and dependent variables. The findings indicated that stakeholder management, project team competency and project team motivation have a high positive significant effect on performance of housing projects explaining 64% of the variations in project performance. The study recommended project managers to adopt various motivational strategies, hire staff on merit and implement various stakeholder management strategies to realize better performance. The study is helpful to project managers in strategic decision making towards achieving their goal and to the government towards offering available, quality and affordable housing to the citizens.

Keywords: Stakeholder Management, project team competency, project team motivation, Project Performance, Gated communities.

1. INTRODUCTION

1.1 Background of the Study

There has been massive growth in the Rwandan real estate sector with developers coming up with varied construction concepts to attract and accommodate the diverse needs of their clients. One concept that has been wholly embraced by various stakeholders in this industry is the idea of gated communities. Landman (2012) states that a gated community is a type of housing estate that has strict entrances for its residents as well as their automobiles and is often characterized by a massive perimeter wall round the estate. Gated communities offer different types of buildings which include villas, bungalows, apartments as well as mansionettes.

For a construction project to be considered as successful it must meet certain performance measures such as timely completion, within budget as well as satisfying all the stakeholder's needs in the project. The absence of reworks as well as 'fitness of purpose' for the occupiers has also been considered as project success measure (Pidd, 2012).

The construction industry plays a fundamental role in the development of a nation and helps in meeting one of the society's basic needs of shelter. The industry contributes more than 7% to a country's gross national product and is growing at 9.4% (2013/2014) on account of sustained expansion in private constructions and public works. Globally, there has been increased demand for houses and this has a lot to do with demographics. In Lebanon, gated communities have been massively taken up by the private sector since they provide small scale solutions to nationwide problems (Atkinson 2013). In the more civilized societies for example Florida, gated communities have been developed to provide exclusive and luxurious facilities to the well off in secure and private settings. Developers are continuously incorporating modern designs and technologies in order to effectively compete in this dynamic market. As the city continues to urbanize at a rate of 15 per cent with estimates pointing to 35 per cent by 2017 and with a growing middle class and fast growing population (UNDP report 2013), the urban population is expected to grow as more people migrate to towns to take up the growing number of jobs and to start businesses. This puts pressure on the available infrastructures, and affordable housing will be needed for this growing population, thereby creating more opportunities for the construction sector (RDB). This has attracted a number of construction projects in the recent past since developers expect a booming business profits. However most of these projects have not been completed within the time set for completion.

Performance of these projects can be seen as successful when one is looking at the number of units developers are selling at remarkably short periods. However, the construction industry has recorded dismal performance when it comes to the underlying factors that contribute to successful completion of these projects some of which are very complex in nature. One of the major factors is delays in completion of these projects where developers fail to deliver the complete houses as well as the facilities advertised on time (CoK). Clients bank on professionalism and exemplary project management skills of the developers as they purchase the units off plan.

Delays in completion of projects are caused by several factors including local industry, socio-economic and cultural issues and project characteristics (Shamas, 2010). A study was conducted on construction project in Thailand to explore the most significant problems causing construction delays. Factors related to designers, contractors and consultants were rated among the top problems. Issues such as lack of resources, poor contractor management, shortage of labour, design delays, planning and scheduling deficiencies, changed orders and contractors' financial difficulties were also highlighted during the interviews. Notably, problems such as 'multicultural and multilingual environment causing ineffective communication', 'large number of participants of project' and 'involvement of several foreign designers and contractors' were rated among the bottom 10 problems in the 75-item problem inventory. These problems in summary relates to stakeholder management, competency of laborers, financial issues among other determinants of project performance which is the main interest of the researcher.

In East Africa of which Rwanda belongs, major cities such as Nairobi, Kampala and Dar-e-Salam in Kenya, Uganda and Tanzania respectively have experienced major challenges in urban design and housing construction projects. The most common challenges relate to delays in completion, cost constraints, collapsed buildings and management problems amongst others, (Oguok, 2014). Rwanda's population in the city of Kigali is growing rapidly as graduates and rural dwellers come to the city to search for employment and set up businesses. This has caused an increased demand for houses and therefore property developers are taking this advantage to set up more houses. However the completion time of these projects is not as per the planned duration for most of them. The developments and economical changes in Rwanda as highlighted above makes the problem seem vital for study.

1.2 Statement of the Problem

In 2015 available figures from NISR showed that CoK had a population of about 1.3 million and is expected to increase to 3.8 million in 2040. This means that the population in Kigali is expected to increase by 13% annually. From the available Kigali housing market, it has been found that by 2022, CoK will require at least 344,068 dwelling units (DU). This means that over 30,000 units should be built annually to meet the housing demand. However, only 37,594 dwelling units will be supplied by 2022. Hence there will be a shortfall of 306,474 dwelling units. According to RHA, at least 60% of city dwellers are renting. Most investors complains of high cost of borrowing, high cost of materials and poor infrastructure within the city suburb as a reason not to charge low rental prices to the tenants. Statistics from Kigali housing market show that the minimum annual supply proposed above has so far not been achieved and most of the housing projects are

incomplete and the completed ones rarely meet the set timeline of completion. One of the short term Sustainable Development Goals that Rwanda aims to achieve by 2020 is provision of quality and affordable housing for residents. Failure of these construction projects will result in reduced supply of quality houses as well as a less vibrant economy which consequently contributes to a lower standard of living and increased unemployment hence not achieving the SDG target.

Most studies on construction industry have been done in some countries in Africa and beyond regarding critical factors for the housing projects performance and the results are inconclusive. However in Rwanda, most of the studies on construction industry (Wanderi 2015, Gitau, 2015, Kibachia, 2017, Theophile, 2017) have concentrated on determinants of success of road construction projects and companies and they found among other factors government commitment, funding, effective communication, stakeholder involvement and risk management as critical factors determining their success while ignoring performance of housing projects. The effects of project team competency, project team motivation and stakeholder management on performance of housing projects has however never been done in Rwanda. The performance of these projects needs to be followed keenly in order to identify the key determinants for success of housing projects if Rwanda is to realize its goal by 2020. This scenario necessitated the researcher to develop research interest on the main determinants of performance of housing projects within Kigali city.

1.3 Objectives of the Study

1.3.1 General Objective

The general objective of the study is to assess the determinants of performance of housing projects in the construction industry in Rwanda through a survey of gated communities in Kigali City.

1.3.2 Specific Objectives

- i. To establish the effect of stakeholder management on the performance of housing projects in Kigali City, Rwanda.
- ii. To determine the influence of project team competency on the performance of housing projects in Kigali City, Rwanda.
- iii. To investigate the effect of project team motivation on the performance of housing projects in Kigali City, Rwanda.

1.4 Research Questions

- i. How does stakeholder management affect the performance of housing projects in Kigali City, Rwanda?
- ii. To what extent does project team competency influence the performance of housing projects in Kigali City, Rwanda?
- iii. How does project team motivation affect the performance of housing projects in Kigali City, Rwanda?

2. LITERATURE REVIEW

2.1 Empirical Review

An empirical review in research methodology is when the writer reviews the information and theories currently available concerning the topic and the historical background of the topic in order to demonstrate thorough understanding of the field or topic in which he or she is conducting research and to show that the problem being studied has not been done before or has not been done before in the way proposed by the researcher (Fink, 2015). This section covers analysis of the determinants of performance of housing projects. Specifically, it will analyze the influence of stakeholder management, project team competency and project team motivation on performance of housing projects.

2.1.1 Stakeholder management and project performance

Stakeholder management is very crucial for the project's success. Project manager should be able to poses skills which are essential in managing the various stakeholders in a project which includes the top management, contractors, subordinate staff, beneficiaries and the government. Stakeholder management can take different directions in form of communication among the project stakeholders, roles definition of various stakeholders and conflict resolution among stakeholders (Theophile, 2017). A previous study by Bourne (2006) on 'Project relationships and the stakeholder circle' noted that it was important to identify key project stakeholders to reduce the chances of project failure through support for developing and maintaining relationships within the project.

Wangui (2015) studied the influence of stakeholder management on the performance of housing projects in Kenya. The findings indicate that most of the respondents were in support of stakeholder involvement in project life cycle. They felt that where stakeholders had been involved in the project adequately, then the project stood a better chance of achieving its objectives. This was based on the realization that each stakeholder had well defined roles and operated within their domain. Project managers and contractors ranked highly the involvement of stakeholders on project success. The findings indicated that most of the project managers acknowledged that stakeholder management was critical in improving performance of projects. The findings further showed that managing stakeholders improved the accuracy greatly and speed of project implementation hence influencing the project positively.

There should be effective planning by consulting all the stakeholders in the project (Theophile, 2017). The stakeholders comprise of the project financiers who give assurance on the source of funds, skilled and competent implementers, environmental factors, political factors and many others so that planning of the project is effectively done. All the various facets of stakeholder management that is communication management, contract management and conflict management amongst others are very crucial for a project's success.

Matheka (2017) further noted that there is need to enhance proper communication during the implementation of the projects. The poor and distorted information slow down project implementation and lead to extra cost. There should be clear channels of communication to facilitate and eliminate the delays in project implementation. The project team should have regular site meetings between the consultants and contractors, review and adjustment of communication reports. The information on work breakdown structure should be well understood to enhance the implementation of the county government construction projects.

2.1.2 Project team competency and Project Performance.

The required project management skills can include: communication and feedback systems, quality, safety, risk and a conflict management system, supervisory skills, experience, coordination and leadership, communication skills, organizational structures, control mechanisms of subcontractors' works, and the overall managerial actions in planning, organizing, leading and controlling (Lam & Chan, 2004). Studying the significant factors that cause delay of construction projects in Malaysia, Kadir et al. (2007) utilized three categories for analysis, namely contractor, consultant and owner. As far as causes related to contractor actions are concerned, 'financial problems', 'shortage of materials' and 'poor site management' were ranked among the top three. Owner causes included 'delayed payments', 'slow decision-making' and 'contract scope changes'. The top three consultant causes were 'poor supervision', 'slowness to give instructions' and 'lack of experience'.

Crawford & Nahmias, (2010) found that top management competency, objective support and stakeholder management are critical factors in implementation of housing projects in Kenya.

The various factors affecting the performance and project delivery at varying degrees are: high cost of plants, equipment, materials and labour, lack of skilled craftsmen, unavailability of funds, poor managerial skills, lack of government patronage, and poor communication among stakeholders (Ogunde, 2016). Ogunde (2016) analyzed the factors affecting competencies and performance delivery of construction firms in Nigeria and found out that the most prominent factors are poor managerial skills, lack of project planning and unavailability of funds. A poor managerial skill is the most important factor affecting performance in small sized indigenous firms in Lagos state. Project management techniques are not used and since there is no management in which the decisions are taken by forming strategies in a planned way, the firm will experience a lot of problems.

Githenya, M. S & Ngugi, K. (2014) analyzed the implementation factors on housing projects in Kenya. The study concluded that the practices that lead to reduction in delay on implementation of housing projects in Kenya are use of efficient project-specific technology, allocation of enough financial resources projects, assigning well trained workers for specific tasks, good project planning and controlling, conflict resolution during project implementation, establishment of good governance, good public accountability, management and good forecasting of work plan, estimation project duration, assigning specific tasks to project teams and also assigning projects to specific teams.

2.1.3 Project team motivation and Project Performance

Motivation is a key influencer of behavior and it helps maintain a high level of commitment to project goals. Motivators, such as performance recognition and reward, opportunities for training and professional development, comfortable work environment, challenging work, workplace policies, involvement in decision-making, and so forth, represent useful controls to the Project Manager (Brenner, 2007; Pryor et al, 2007).

Andawei (2002) reports on a study finding that motivational factors significantly influence the performance of workers. Chan et al., (2011) research also found out that project team commitment is one of the most important factors for project implementation. Darrington (2010) emphasized that motivation schemes on construction site workers should not be centered on monetary incentives because it destroys intrinsic motivation, which makes construction site workers be less productive. He proposed that intrinsic motivation should be encouraged so that parallel positioning of incentive structures with motivation can result in successful projects for the client and economic and psychological advantage to the contractor. Lewis (2003) pointed that a project manager needs to understand the individual desires of each team member. To achieve a project environment where the majority of the members involved are motivated about the project, project managers have to be sensitive to the needs and wants of the team members.

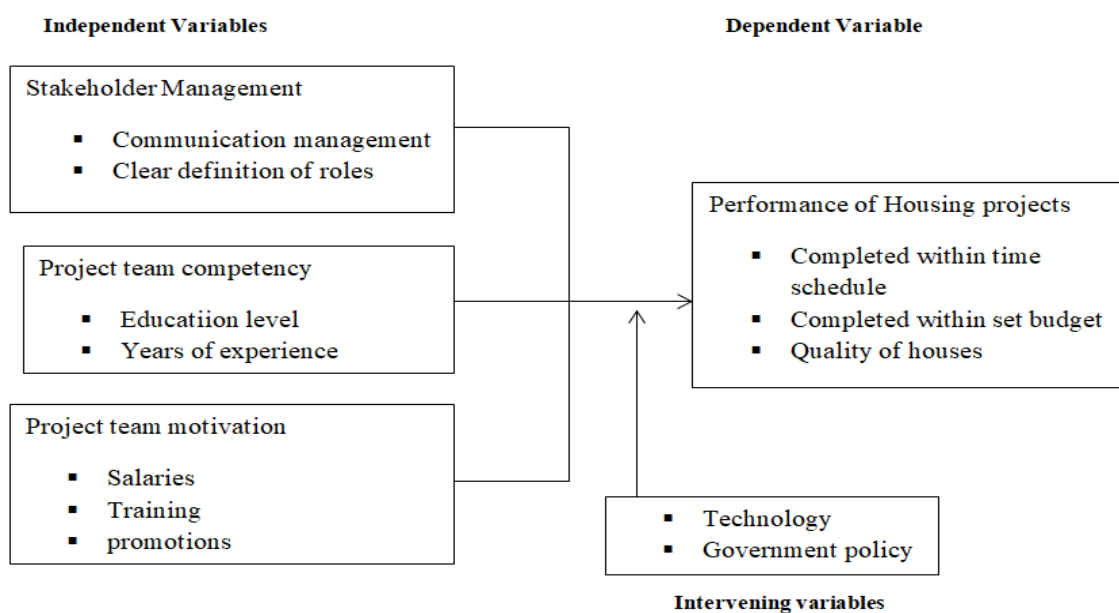
K. N. JHA & K. C. IYER (2006) while studying the critical factors affecting quality performance of construction projects in India found that project manager’s competence; top management’s motivation; monitoring and feedback by project participants; interaction among project participants; and owners’ competence are critical in influencing the quality performance of construction projects. The results of top management motivation was also supported by the findings of Ogwen (2016) who also found same results while carrying out a study in Kisumu, Kenya on construction projects.

Saleh et al (2009) studied construction projects performance factors in Gaza Strip. They recommended development of human resources in the construction industry through proper and continuous training programs about construction projects performance. These programs can update participants’ knowledge and can assist them to be more familiar with project management techniques and processes. Owners are encouraged to facilitate payment to contractors in order to overcome delay, disputes, and claims and also motivate them on their work. All managerial levels should participate in sensitive and important decision-making. Continuous coordination and relationship between project participants are required through project life cycle for solving problems and developing project performance.

Githenya (2014) also found that project team motivation is significant in influencing implementation of housing projects. Project managers should take caution in ensuring that the project team, workers and contractors and other stakeholders are motivated intrinsically and extrinsically for good performance of the project and to avoid delays and wastage of resources in the process of project execution.

2.2 Conceptual framework

This research is based on the assessment of determinants of performance of housing projects in Kigali City taking a survey of Gated communities within the CBD. Project performance is the dependent variable while determinants of project performance namely; stakeholder management, project team motivation and project team competence are the independent variables. The framework below summarizes the two broad variables as per the objectives.



Source: researcher 2018

Figure 1: Conceptual framework

2.3 Research Gap

Despite the importance of housing construction projects in fostering economic development in Rwanda through raising standard of living and employment creation, little has been done to ascertain their sustainability and performance. Rwanda aims to achieve short term sustainable development goal of provision of quality and affordable housing by 2020. This calls for empirical analysis of the performance of these projects to ensure that they are successful and aims to achieve the desired goal. Some studies have been carried out in the construction industry in Rwanda and beyond but most of them have concentrated on roads construction while a few on housing. For example in Rwanda no study has focused on the performance of housing projects. This study therefore aims to fill this gap by analyzing the critical factors that determines the performance of these projects for corrective action and advice to be taken.

Most studies carried out are also silent in distinguishing the various categories of motivation and this study aims to fill this gap by analyzing the intrinsic and extrinsic motivation factors that affect performance of housing projects in order to ascertain which category is appropriate in fostering the performance of these projects.

3. RESEARCH METHODOLOGY

The researcher adopted descriptive research design as it is most appropriate in describing and portraying characteristics of the situation, a group of people and the population; hence getting credible and accurate information(Chandra, 2004). The researcher aimed to analyze the determinants of performance of housing projects in Kigali city by focusing on stakeholder management, project team competency and project team motivation. The target population for this study was 130 comprise of property developers within Kigali city, (*CoK 2016 Report*). The study adopted the normal approximation to hyper geometric distribution formula in arriving at sample size of 97 respondents from a population of 130. Simple random sampling technique was used in issuing 97 questionnaires to the respondents. The researcher used primary data which was collected using questionnaires. The questionnaires were tested for reliability and validity to ensure their accuracy and relevance in the study. Correlation analysis was utilized to show the strength of association between dependent and independent variables under study. Regression analysis was used to study the effects of stakeholder management, project team competency and project team motivation on performance of housing projects.

The sample size formula for small populations is shown as follows:

$$n = \frac{NZ^2pq}{\{E^2(N-1) + Z^2pq\}}$$

Where; n= is the required sample size

N= is the population size (130 property developers)

Z= is the level of confidence of the sample size (set at 95%) thus Z=1.96

P and q are the population proportions (Each set to 0.5).

E sets the accuracy of the sample proportions/margin of error (set to 0.05).

$$n = \frac{130(1.96^2)(0.5^2)}{\{(0.05^2)(129) + 1.96^2(0.5^2)\}}$$

n= 97 Respondents

The sample size was therefore 97 property developers

4. RESEARCH FINDINGS AND DISCUSSION

4.1. Questionnaire return rate

Table 1: Questionnaire Return Rate

	Target	Returned	Percentage
Property developers	97	97	100%

Source: Researcher, 2018

As depicted in the table 1 above, the researcher targeted 97 respondents which was the sample size. The return rate was 100% since all the 97 respondents who were issued with the questionnaire returned them. This was due to the fact that the researcher gave them enough time to fill and return the questionnaire.

4.2. Demographic Information of the respondents

This was based on Gender, Age bracket, marital status, Education level and level of experience.

4.2.1 Gender of the respondents

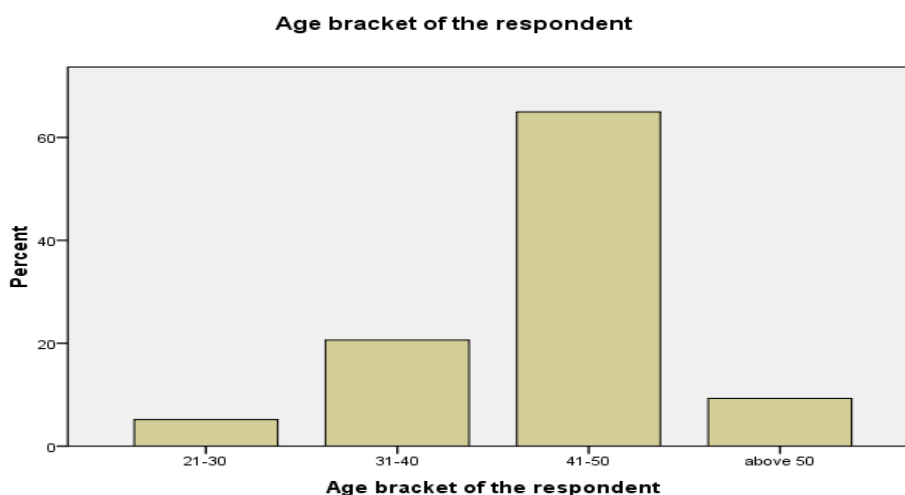
Table 2: Gender of respondents.

Gender of respondent		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	94	96.9	96.9	96.9
	Female	3	3.1	3.1	100.0
	Total	97	100.0	100.0	

Researcher, 2018

From the above table the number of male respondents surpassed that of female respondents with a percentage of 96.9% and 3.1% respectively.

4.2.2 Age bracket of the respondents



Source: researcher, 2018

Figure 2: Age bracket of respondent

From the above figure, most of the respondents were in the age bracket of 41-50, followed by 31-40, above 50 and lastly 21-30.

4.2.3 Marital Status of respondents

Table 3: Marital Status of respondents

Marital Status of the respondent		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Single	5	5.2	5.2	5.2
	Married	92	94.8	94.8	100.0
	Total	97	100.0	100.0	

Source: Researcher, 2018

From the table above 92 respondents are married which forms 94.8% while 5 respondents are single which forms 5.2% of the sample size.

4.2.4 Education level of the respondents

Table 4: Education level of respondents

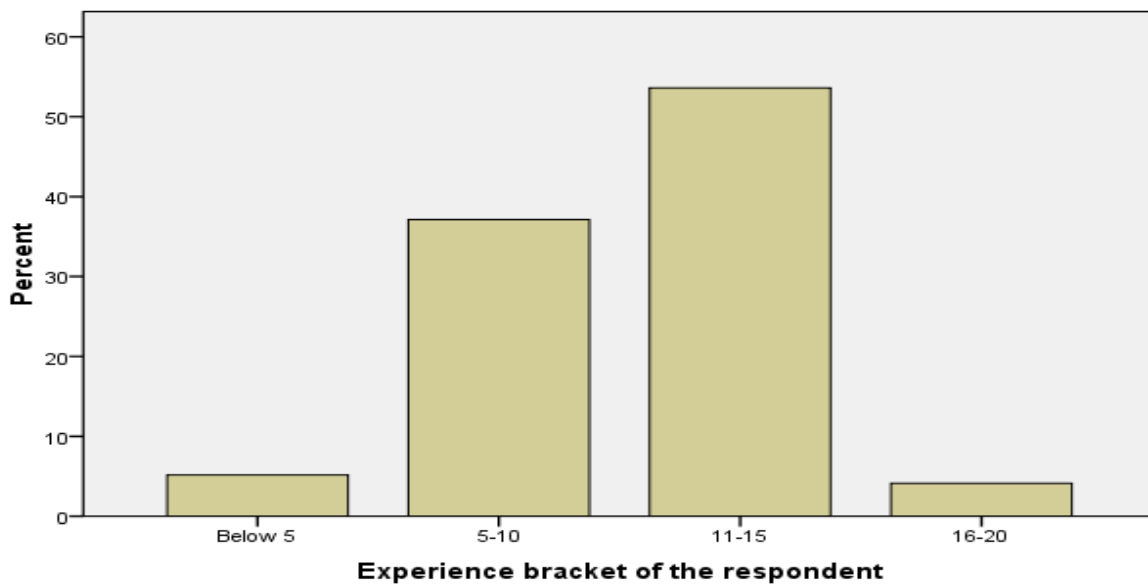
Education level of the respondent		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Secondary	3	3.1	3.1	3.1
	Higher	94	96.9	96.9	100.0
	Total	97	100.0	100.0	

Source: Researcher, 2018

Most respondents went past secondary qualification.96.9% of the respondents possess higher qualifications while 3.1% poses secondary qualifications.

4.2.5 Experience level of the respondent

Experience bracket of the respondent



Source: researcher, 2018

Figure 3: experience bracket of the respondent

Most respondents have experience between 11-15 years accounting for over 50% and 5-10 years accounting for over 30%. Experience level of below 5years and 16-20 years accounted for negligible percentage of below 10% in total.

4.3: Relationship between independent variables and dependent variable

The study assessed the determinants of performance of housing projects in Rwanda .the independent variables considered included stakeholder management, project team competency and project team motivation. The findings on the relationship between dependent performance of housing projects and the independent variables are presented below.

4.3.1 Stakeholder management and performance of housing projects

The researcher asked the respondents about the influence of stakeholder management indicators on the performance of housing projects and the results are shown below.

Table 5: stakeholder management and performance of housing projects

Statement	Disagree	Not sure	Agree	Strongly agree	Total
1.Clear defined roles to all stakeholders influence project performance		2(2.1%)	69(71.1%)	26(26.8%)	97(100%)
2.Involving all stakeholders in project meetings influence project performance	4(4.1%)	4(4.1%)	67(69.1%)	22(22.7%)	97(100%)
3.Having a clear conflict resolution framework influence project performance		6(6.2%)	60(61.9%)	31(32%)	97(100%)
4.Engaging all stakeholders in drafting the contract influence project performance	3(3.1%)	1(1.0%)	68(70.1%)	25(25.8%)	97(100%)
5.Periodic communication to all stakeholders on project progress influence project performance			78(80.4%)	19(19.6%)	97(100%)

Source: researcher, 2018

From the above table it is evident that most of the respondents are in support that stakeholder management indicators influence project performance. Most of the respondents were for agree and strongly agree options. This indicates that stakeholder management is very influential in performance of housing projects.

Correlation between stakeholder management and performance of housing projects

Table 6: Correlation between stakeholder management and performance of housing projects

Correlations			Performance of Stakeholder Housing Projects	of Stakeholder management
Performance of Housing Projects	Pearson Correlation		1	.605
	Sig. (2-tailed)			.007
	N		97	97
Stakeholder management	Pearson Correlation		.605	1
	Sig. (2-tailed)		.007	
	N		97	97

Source: researcher, 2018

Correlation coefficient between stakeholder management and project performance is 0.605 showing a strong association between the two variables.

4.3.2 Project team competency and performance of housing projects

The respondents answered the questions regarding the influence of project team competency indicators on project performance and the results are in the table below.

Table 7: Project team competency and performance of housing projects

Statement	Disagree	Not sure	Agree	Strongly agree	Total
1. Education level influence project performance	32(33.0%)		58(59.8%)	7(7.2%)	97(100%)
2. Experience level influence project performance			21(21.6%)	76(78.4%)	97(100%)
3. supervisory skills of top management influence project performance		2(2.1%)	78(80.4%)	17(17.5%)	97(100%)

Source: researcher, 2018

From the table above, most of the respondents agree that project team competency influence the performance of housing projects. Most of them are for the 'Agree' and 'strongly agree' options. On the contrary 32% of the respondents disagreed with the statement that education level influence project performance.

Correlation between project team competency and project performance

Table 8: Correlation between project team competency and project performance

Correlations		Performance of Housing Projects	Project team Competency
Performance of Housing Projects	Pearson Correlation	1	.632
	Sig. (2-tailed)		.049
	N	97	97
Project team Competency	Pearson Correlation	.632	1
	Sig. (2-tailed)	.049	
	N	97	97

Source: researcher, 2018

The correlation coefficient between project team competency and project performance is 0.632 in the above table. This implies that the two variables have a strong association between them.

4.3.3 Project team motivation and performance of housing projects

The assessed the respondents on their view about the influence of project team indicators on project performance and the results were as follows.

Table 9: project team motivation and project performance

Statement	Disagree	Not sure	Agree	Strongly agree	Total
1. timely payment of salaries influence project performance	7(7.2%)		52(53.6%)	38(39.2%)	97(100%)
2. Provision of protection gadgets to employees influence project performance			76(78.4%)	21(21.6%)	97(100%)
3. Provision of work leaf influence project performance.	5(5.2%)		84(86.6%)	8(8.2%)	97(100%)
4. Recognition and awards to performing team members influence project performance			37(38.1%)	60(61.9%)	97(100%)
5. Regular training of project team members influence project performance			36(37.1%)	61(62.9%)	97(100%)

Source: researcher, 2018

From the table in the previous page, most respondents were of 'agree' and 'strongly agree' opinion an indication that project team motivation is very influential in project performance.

Correlation between project team motivation and project performance

Table 10: Correlation between project team motivation and project performance

Correlations		Project team Motivation	Performance of Housing Projects
Project team Motivation	Pearson Correlation	1	.78
	Sig. (2-tailed)		.037
	N	97	97
Performance of Housing Projects	Pearson Correlation	.78	1
	Sig. (2-tailed)	.037	
	N	97	97

Source: researcher, 2018

The above table shows that the correlation coefficient between project team motivation and project performance is 0.78 and a significance of 0.037. This is an indication that there is a strong association between the two variables.

4.4 Regression analysis results

In order to show the magnitude of influence of stakeholder management, project team motivation and project team competency on performance of housing projects, the researcher carried out a regression analysis and the results are as shown below.

Table 11: model summary

Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	
1	.54 ^a	.64	.53	.0022	

a. Predictors: (Constant), Project team Motivation, Project team Competency, Stakeholder management

From the above table, R Squared value is 0.64. This implies that 64% of the data is captured by the model fit.

Table 12: ANOVA table

ANOVA ^b						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.787	3	.262	21.083	.0360 ^a
	Residual	22.532	93	.242		
	Total	23.320	96			

a. Predictors: (Constant), Project team Motivation, Project team Competency, Stakeholder management

b. Dependent Variable: Performance of Housing Projects

In the above ANOVA table, the significance value is 0.0360 and the F value of 21.083 is fairly large. This means that the model fitted is significant, is a good predictor of the variables under study.

Table 13: coefficients

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	3.598	.570		6.308	.000
	Project team Competency	.109	.083	.134	1.312	.003
	Stakeholder management	.084	.091	.095	.926	.047
	Project team Motivation	.066	.085	.079	.773	.001

a. Dependent Variable: Performance of Housing Projects

Table 13 above shows the coefficients of the model the variables in the model. All the independent variables are significant in influencing dependent variable since the significance values are all less than 5%. The coefficients for project team competency, stakeholder management and project team motivation are 0.109, 0.084 and 0.066 respectively.

The linear model adopted in this study was $Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \epsilon$. from the results above β_1 , β_2 and β_3 are 0.084, 0.109 and 0.066 respectively. The linear model can now be fitted as ;

$$Y = 3.598 + 0.084X_1 + 0.109X_2 + 0.066X_3$$

4.5 Discussion

4.5.1 Influence of stakeholder management on performance of housing projects in Rwanda

The correlation analysis results showed that the Pearson correlation coefficient between stakeholder management and performance of housing projects is 0.605. This means that there is a high positive association between stakeholder management and performance of housing projects at a significance level of 0.007.

The unstandardized B coefficient of 0.084 for stakeholder management in the regression results indicates that a one unit increase in stakeholder management leads to a 8.4% increase in project sustainability other variables held constant. The significance value of 0.047 which is less than 0.05 indicates that stakeholder management is very crucial in influencing performance of housing projects.

These results are similar to the findings of Wangui (2015) where most of the respondents were in support of stakeholder involvement in project life cycle. They felt that where stakeholders had been involved in the project adequately, then the project stood a better chance of achieving its objectives, Matheka (2017) who also found that stakeholder management indicators such as communication channels, meetings are crucial for the successful implementation of projects.

Therefore for project managers in the housing sector to realize success they need to follow up closely and ensure that the tenets of stakeholder management are adhered to right from inception to completion of the project.

4.5.2 Influence of project team competency on performance of housing projects

From the findings, the Pearson correlation coefficient between project team competency and performance of housing projects at 0.049 level of significance is 0.632. This means that project team competency and performance of housing projects have a strong association and the variation is in the same direction which means that if project team competency increases, the performance of housing projects increases too. Further the regression analysis quantified the importance of this relationship by showing that when project team competency increases by 1 unit the performance of housing projects increases by 10.9% units while other variables kept constant. The significance value of 0.003 for project team competency shows that it's very influential for performance of housing projects.

These findings are similar to those of Crawford & Nahmias (2010) who found that top management competency is critical in implementation of housing projects in Kenya; Githenya (2014) who found that among the factors that leads to reduction in delay on implementation of housing projects in Kenya is assigning well trained workers for specific tasks.

4.5.3 Influence of project team motivation on performance of housing projects

The Pearson correlation coefficient of 0.78 at 0.037 significance level for project team motivation confirms the existence of high positive relationship between project team motivation and performance of housing projects. This relationship has been appreciated by regression analysis which showed regression coefficient of 0.066 which means that an increase of one unit in project team motivation causes the performance of housing projects to increase by 6.6% if other parameters are kept constant. The sig-value is 0.001 greater than 0.05. This means that project team motivation is also a crucial factor to consider in performance of housing projects. These results concur with the ones of Andawei (2002) who found that motivational factors significantly influence the performance of workers and hence the project, Brenner, 2007 who said that motivation is a key influencer of behavior and it helps maintain a high level of commitment to project goals.

5. CONCLUSION AND RECOMMENDATIONS

5.1. Conclusions

Based on the above findings the researcher made the following conclusions;

All the three variables independent variables that is stakeholder management, project team competency and project team motivation strongly influence performance of housing projects.

There is high positive association between stakeholder management and performance of housing projects in Kigali city Rwanda. All other factors held constant, a 1% increase in stakeholder management will result into an 8.4% increase in performance of housing projects and vice versa.

Project team competency is fundamental in the success of housing projects. There is a high positive association between project team competency and performance of housing projects. A 1% increase in project team competency brings a 10.9% increase in performance of housing projects and vice versa other factors held constant.

Project team motivation is a critical determinant of performance of housing projects in Kigali city, Rwanda. There is a high positive association between project team motivation and project performance. Holding other factors constant, a 1% increase in project team motivation brings a 6.6% increase in project performance

Stakeholder management, project team competency and project team motivation accounted for 64% of the variations in project performance. The remaining 36% maybe accounted for by other factors that affect performance of housing projects but are not captured in the model.

The model fit was significant in explaining the relationship between project team competency, stakeholder management, project team motivation and performance of housing projects since the ANOVA table indicated a significance value of 3.6% which is less than 5%.

5.2. Recommendations

The findings indicated that project team competency, stakeholder management and project team motivation are very influential in performance of housing projects. Based on these findings, the researcher came up with the following recommendations.

Property developers who oversee the construction of houses should ensure that all stakeholders in these projects are engaged fully and are aware of all the projects activities right from initiation to completion. This can be achieved through having a clear defined role to every stakeholder, engaging all stakeholders in meetings and continuous update to all stakeholders on the projects progress.

Managers of housing projects should also give more weight to competency of the staff. Managers should raise a bar in terms of academic qualifications and also encourage those who have low qualifications to go for further studies in order to gain more skills. The procedure of recruitment should first be based on level of experience. Mangers should first give priority to those with experience in housing construction during recruitment.

Motivation of staff should be taken very seriously by the management. Staff should be given some sort of motivation like organizing training for staff, recognition and awards; works leaves and prompt payment of salaries in order to improve on their productivity.

5.3. Areas for Further Researcher

This study focused on stakeholder management, project team competency and project team motivation as determinants of performance of housing projects in Rwanda. Further research can be done on other factors such as government policies, procurement procedures among others that may also affect the performance of housing projects.

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