



Effects of Project Material Management Practices on Performance of Selected Construction Companies in Rwanda: A Case of Nyarutarama Property Developers

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Abstract

The study assessed the role of project management practices on performance of construction. The specific objective, ascertained impacts of supplier relationship management, customer relationship, and warehouse information sharing on project performance in Rwanda with reference to selected sites of Nyarutarama Property Developers. The researcher was guided by system, contingency and resource based view theories. The research used questionnaire, interview guide as well as desk review as methods for gathering information. The researcher targeted 380 persons which a representative group of 195 participants was drawn. The researcher analyzed quantitative data through the generation of descriptive statistics as well as inferential statistics while qualitative evidences were analyzed through the use of content analysis based on themes and subthemes developed during interview procedures. Results show that 76.3% show agreement on resolve problems with their suppliers, 82.3% improve their product quality, and 76.2% evidenced that inclusion of suppliers. The association between supplier relationship management and improved project time schedule was correlated (Pearson Correlation was 0.712, level of significance was 0.000). Strongly correlation was established between supplier relationship management and high quality (Pearson correlation was 0.683, significance level was 0.000). Results to the second objective indicated 70.4% show agreement on development of customer relationship management process team. Response on using cross-functional input in the process, indicated that 88.1% show a strong agreement on the statement, 83.3% evidenced that it advances metrics associated with organizational effect to customer profit, 68.7% argued that interact with customers to set reliability, responsiveness, 74.5% argued that evaluated the role of relationship with customers. Results proved a positive and significant relationship between warehousing management and construction project performance ($r=0.696$ and $\text{sig}=0.00<0.01$). Correlation between information sharing management with improved project time plan was significantly associated (Pearson correlation was 0.650, significance level was 0.000). Correlation between information sharing management and high quality was positively associated (Pearson correlation was 0.644, sign was 0.000). This study recommends that project material management practices should be integrated and not performed. There is a need to make further investment in warehouse using containers.

Keywords: *Project Material Management, Supplier Relationship Management, Customer Relationship Management, Information sharing, Organizational Performance*

1.0 Introduction

When it is taken into consideration what was written in Urunana rw'Abarezi V. 006, July 2018, a peer learning The construction firms in Kigali City are suffering from diverse examples of poor success emanating from poor supply chain management. In fact, building delays happen owing to inefficient transportation facilities, damaged material owing to lack of warehousing infrastructure as well as poor purchasing process (IMF,2018). This impediment occurred in term of work slowdown owing to the lack of construction materials, many material at the construction sites as well as inadequate control of wastage, damaged construction materials on site.

Previous studies such as Mac-Barango (2023) felt that lack of supply management and treatment was the section of opinions for uncompleted project and argued that managing stores and did not rely on supplier relationship issues. It is crucial to establish the correlation between warehousing and information sharing process. Jarkas and Bitar (2011) reported that supply chain mismanagement affected the success of project in negative way and the researcher analysed cost adjustment owing to material damage but did not indicate the constraints emanating from storage and material acquisition process. In Rwanda, previous studies show problems of project material management practices cause the drop of 4-Stoley under construction in Nyagatare Town (Kayiranga, 2020). Therefore, previous studies were carried out in developed and developing counties apart from Rwanda. This study focused on Rwandan construction industry and investigated the contribution of project material management practices, specifying effect of effective supplier relationship, customer relationship, warehousing as well as information sharing on project success in Rwanda using Nyarutarama Property Developers construction sites. Specifically, the paper had:

- i. To assess effect of project material management practices on performance of Nyarutarama Property Developers construction Sites, Rwanda.
- ii. To assess effect of customer relationship management on performance of Nyarutarama Property Developers construction sites, Rwanda.
- iii. To examine effect of warehousing and performance of selected Nyarutarama Property Developers sites, Rwanda
- iv. To establish effect of information sharing on performance of Nyarutarama Developers Construction Sites, Rwanda.

2.0 Review of Related Literature

2.1 Empirical Literature

According to Holmberg (2015), there was a trial to establish the way in which issues lead to inappropriate utilization of methodological process to be aware of supply relationship management. The study was done in Scandinavian countries among 6 construction firms. The study did not show a strong association between organizational strategic management and the performance of construction materials, organizations continue to put special focus on financial constructs disregarding other constructs that lead to high opposition by similarity indexes for their employees. Furthermore, Chong, Chan, Qoi and Sin (2011) advanced a management instruments that assessed the association between managing materials and function success and innovative on the success of 163 Malaysian industries and corporations. Findings demonstrated that supply relationship management had a positive effect of project success. Furthermore, Abdul. et al.,(2013) assessed the association as well as correlation between suppliers and construction companies through cooperation in improving the quality and the level of success risk of expectation situations on the expected connections. The researcher shows a strong agreement with the association between them and the project success. The researcher felt that this significant association was qualified by demanding challenges as well as uncertainties related to the pinpoint of expectation for managing material process and close association with all stakeholders especially workers in accordance with common trustfulness as well as clearness as similar would facilitate to overcome challenges and stimulate effective arrangement and preparedness for achieving any constraints emanating from construction sites.

According to a research done by Baldwin and Bordoli (2014), it was evidenced that the cause of stimulating cooperation and interaction between customers and workers of Construction Company emanates from technological advancement and the pertinent role of a business philosophy that means consumer location.

According to Nguyen and Varying (2023), it was demonstrated that customer relationship management refers to the thought that set in institution and assisted and information based systems relying on wider database. They argue that technological advancement facilitates firms to know expectations of customers, assessing favorable customers and advance or improve strategies for obtaining and preserving them. Therefore, it may be described as the group of actions, behavior as well as attitudes that provide the higher importance to customer's interests as well as unceasingly establish the supervisor value for them and institution relies on customer to attain their long term satisfaction as well as reliability (Mohammend et al., 2013).

According to the research conducted by Bowersox et al (2010), warehouse is very important for the success of construction material due to the ability for effective cooperate in resolving process and improving the attainment of expected goals and objectives of a construction project, facilitating optimum sales and profit. Apart from its pertinence towards the realization of requirement, there was the capacity to stimulate horizontal incorporation of warehouse (Chen & Notteboom, 2012), demonstrated that in order to produce and deliver goods to companies for determinations of totalling value towards as products. Furthermore, World Bank (2018) demonstrated the organization profitability from using effectively warehouse in their function of value more given to services adequately by ameliorating rivalry, such as stable expenses and service degree, reduced answer, timeline, reducing transport expenses and risks, tractability to impulsive marker need and reduced data costs for undertaking closer to actual markets meanwhile market disintegration reduces source related to suitable construction materials (Hilmola & Lorenz, 2011).

Globally, a research done by Cheng (2014) ascertained effect by sharing and distributing information and its incorporation into warehouse and storage. Evidenced gathered from 232 firms in Australia experienced discussion and felt logistics incorporation possessing a pertinent towards the function findings and the ability of ICT and distributing data and evidences which have contributed to high performance of construction firms. Moreover, potential contractor interaction has immediate effects for functional findings of firms. Okore and Kibert (2019) examining effect of skills distributed to supply chain outcomes within tourism and hotel industry in Kenya using descriptive research design where the study targeted 459. The study concluded that sharing information among project stakeholders influence the success of performance and suggested further improvement and accessibility to suitable data. Moreover, Mathae et al (2018) demonstrated that information sharing is strongly affecting the success of construction companies in Kenya. The research was conducted descriptively as well as the distribution of research instruments to 177 respondents drawn from 167 workers using simple random sampling techniques. Results demonstrated that skilled personnel in communication affect positively the success of construction companies in Kenya.

2.2 Theoretical Framework

In this vein, the research used system, contingent as well as Resource Based View theories.

2.2.1 System Theory

The above model accepted any situation has two principles the agent and the principal and the organization is considered as the entire and not a duty and of course it have sub-groups which are interconnected and are used for understanding the whole process within an institution (Bank, 2018). The researcher will use this theory for the intention to function as involved in different portions such as sub-components, stakeholders and further elements. Therefore, the aforementioned model integrates different component for project material management and the theory was helpful in demonstrating the degree of interaction between subgroups and the entire organizational structure and adequate level of awareness for undercurrent management. However, a project material management practice refers to institutional model advanced via the application of a system theory to material management (Bank, 2018). The study used system theory to enable the needs of the environment.

2.2.2 Contingency Theory

This model evidences that various copying strategies can give pertinent managerial basis to indicate the various challenges necessary for setting up infrastructural development plan (Del Pico, 2013). Firms may be challenged by various elements such as organizational structure, components, situation and ICT. According to El-Gohary & Aziz, 2014) for improving functional ability to produce new construction material, any organization might change its characteristics as well as arrange its pertinent component to prepare a vigorous dynamic project material management problems (Ezhilmathi, 2016). Rwandan construction firm's function in reasonable conducive situations, thus, the

above model was a pertinent project material management practices driver in designing and bringing into line their functions to the improvement of functional success.

2.2.3 Resource Based View Model

This model pinpoints the benefits a firm necessitates by bearing the pertinent assets asked for its competition. These can be in the form of financial component, personnel, ICT. Bearing goods and services for detailing operations cannot open the attainment of organization assets as well as abilities (Gulghane, 2015). Firm use of sectoral and market adjustment may be taken into account for copying with globalization era. Well organized material management practices to establish high level of competitiveness and value added (IMF, 2018). The competitiveness did not specify the personal and profitability of RVB in improving functional success.

2.3 Conceptual Framework

Independent Variable

Project Material Management Practices

Supplier Relationship Management

- Quality selection of supplier
- Regular problem solving
- Helping supplier to improve quality of product
- Key supplier involvement in planning

Customer Relationship Management

- Interaction with customers in setting reliable response
- Measuring customers' satisfaction
- Measures customers' profitability over time

Warehousing Management

- Storage facilities
- Obtaining and dispatching material procedures
- Current storage costs

Information Sharing Management

- Informing project stakeholders in advance for adjusting their expectations
- Keeping partners fully informed on the problem affecting their business
- Sharing business information process with project managers

Dependent Variable

Performance of Construction Project

- Project cost
- Project time schedule
- Project quality assurance

1 Conceptual Framework

Source: Researcher (2023)

The researcher provides the correlation among research variable. Independent variable which is project material management practices were measure through suppliers, customers, warehouse, as well as dissemination of information. Furthermore, dependent variable which is performance of construction project were assessed through the following indicators: cost efficiency, timeline as well as quality assurance. Moderating variables composed were helpful in moderating the interaction between dependent and independent variables.

3.0 Research Methodology

According of Orodho (2017), a study design denotes the blueprint selected to use suitable methods and strategies Cohen, Mainion and Morrison (2012) refers study design denotes as a blueprint followed during the research process for finding solutions to the pertinent research problem under investigation. This study used descriptive and correlation study design, in this research it was pertinent to employ a descriptive and correlational research designs. This study attempted to relate a project material management practices impact to construction project success.

3.2 Target Population

This target population denotes of individuals or events or other factors related to the research problem (Creswell, 2013), the study targeted 243 recorded engineers and 35 architects in Rwanda and these include people involved in construction sector. These were 75 persons undertaking their everyday activities within construction sites of Nyarutarama Property Developers. The study calculated a representative group by means of Yamane formula:

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

Thus, the calculated sample size is 195 respondents participated in this research, from 380 research participant considered as the targeted population. The selection of the sample size relied on Jackson (2011) guidelines. The wide population, the small proportion necessary for obtaining a sample size. For small proportion < 100, there were a little point was sampled, if the population was 1500, 20% was sampled and beyond 5000, the population was irrelevant and the sample size was 195 adequate.

4.0 Research Findings and Discussions

4.1 Effect of Supplier Relationship Management on Performance of Selected Construction Companies in Rwanda.

Before establishing effect of Effect of Supplier Relationship Management on Performance of Selected Construction Companies in Rwanda. The researcher started with descriptive statistics in order to give information on whether the Supplier Relationship Management has been the adoption of Supplier Relationship Management

Supplier Relationship Management Practices	Strongly Disagree %	Disagree %	Not Sure %	Agree %	Strongly Agree %	Mean	Standard Deviation
I consider quality as number one criterion in choosing suppliers	26(13.8%)	38(19.7%)	0(0.0%)	59(30.9%)	69(34.0%)	2.8	1.5
We regularly solve problems jointly without suppliers	11(5.9%)	34(17.8%)	0(0.0%)	70(36.2%)	77(40.1%)	4.1	1.5
I have supported to ameliorate their product quality	11(5.9%)	15(7.9%)	7(3.9%)	76(39.5%)	83(42.8%)	3.1	1.6
I include the key suppliers in designing and goal setting activities	19(9.9%)	26(13.8%)	0(0.0%)	69(36.1%)	78(40.1%)	2.8	1.6
Our company has formal performance goals for supply chain management	13(6.8%)	64(31.8%)	54(18.1%)	46(2.4%)	18(9.4%)	2.97	1.09
Our firms assesses the supplier's role to profit	16(8.3%)	40(20.8%)	9(4.7%)	34(17.7%)	93(48.4%)	3.77	1.43
Supplier aware how their decision/actions impact SRM procedure	18(9.4%)	51(26.6%)	5(2.6%)	37(19.3%)	81(42.2%)	3.58	1.48
SRM procedure needs were identified by cross functional team	13(6.8%)	31(16.1%)	46(24.0%)	15(7.8%)	87(45.3%)	3.68	1.36
Persons via NPD aware how their decisions/actions affect SRM process	14	89(46.4%)	4(2.1%)	46(24.0%)	39(20.3%)	3.03	1.34
Composite mean and SD						3.8169	1.48

Source: Primary Data (2023)

Results showed that 64.9%, mean response was 2.8 while the standard deviation was 1.5 show a strong agreement on the application of quality as their number one requirements in obtaining suppliers, this implies the existence of necessity between supplier selection criteria was very pertinent in ensuring the success of construction companies in Rwanda, 76.3% of respondents with a mean response of 4.1 and standard deviation of 1.5 show agreement on regularly solve problems jointly with their suppliers., Obviously, 82.3%, mean response was 3.1 while standard deviation was 1.6 show a strong agreement in helping their suppliers to improve their product quality.

Furthermore, 76.2% of respondents, mean response was 3.03, standard deviation was 1.34 evidenced that inclusion of key suppliers in our planning and goal setting activities. The study indicated that the NPD did not have formal performance goals for project material management practices (SRM) as demonstrated by 38.4%, mean response was 2.97 as well as standard deviation was 1.09. In addition, 66.1% of respondents show agreement that selected sites strategies contributed to net profit as the mean was 3.77 and standard deviation

was 1.43. However, 61.5% of respondents agreed that their supplier know the way in which decisions are made and impact SRM procedure, mean response of 3.58 and standard deviation of 1.48, in the same vein, 53.1% of respondents, accepted that SRM procedure needs were examined by cross functional team, mean response was 3.68 and standard deviation was 1.36. Finally, 44.3% of respondents 53, 7% of respondents show a disagreement with persons via their firms know the way in which decisions are made and affecting procedure with the mean response of 3.03 as well as standard deviation was 1.34

Table 4. 1: Correlation Analysis between Supplier Relationship Management and Performance of Construction Companies in Rwanda.

		Efficient use of project cost	Improved project time schedule	High quality of NPD constructed buildings
Supplier Relationship Management	Pearson correlation	.717**	.712**	.683**
	Sig.(2-tailed)	.000	.000	.000
	N	192	192	192

Source: Primary Data (2023)

Findings demonstrated the existence of association between supplier relationship management as well as construction project performance, supplier relationship management to the efficient use of project cost is strongly correlated where the Pearson correlation was 0.717, significance was 0.000). There was association between supplier relationship management and improved project time plan and design was positively associated (Pearson correlation was 0.712, significance was 0.000). A positive effect was established for supplier relationship management toward high quality of NPD constructed buildings was correlated (Pearson correlation was 0.683 while significance was 0.000). Meanwhile, it denoted that supplier relationship management influenced improving of NPD construction project. Relying on hypotheses beginning that supplier relationship management had no statistical significant impact on the success of construction project in Rwanda was not confirmed at 5% of significance. Therefore, applying a helping supplier to improve quality of product did not affect automatically high quality of NPD constructed buildings.

4.2 Effect of Customer Relationship Management on Performance of Construction Projects.

The second objective examined the Effect of Customer Relationship Management on Performance of Construction Projects. Most commonly Customer Relationship Management practices include.

Table 4. 2 : Descriptive Statistics on the application of Customer Relationship Management strategies

Customer Relationship Management	Strongly Disagree %	Disagree %	Neutral %	Agree %	Strongly Agree %	Mean	Std. Deviation
NPD had advanced customer interaction management procedure	38(19.7%)	15(7.9%)	4(1.9%)	58(30.3%)	77(40.1%)	4.13	1.37
NPD uses cross-functional input in the customer interaction management procedures	8(3.9%)	15(7.9%)	0(0.0%)	52(32.2%)	76(55.9%)	2.85	1.26
NPD gives customer interaction management procedure was related to organizational strategies	23(11.8%)	65(33.6%)	19(9.9%)	50(26.3%)	33(26.3%)	3.83	1.36
NPD improves measures that are associated with customer influence on organizational profit	23(11.8%)	30(15.7%)	11(5.9%)	54(28.3%)	74(38.2%)	3.42	1.20
NPD advances measures that are associated with organizational influence on customer profit	9(4.7%)	7(3.6%)	16(8.3%)	55(28.6%)	105(54.7%)	4.25	1.06
NPD ways of managing customer relationship measures were attempted to organizational financial success	10(5.2%)	34(17.7%)	32(16.7%)	37(19.3%)	79(41.1%)	3.73	1.30
NPD organizational measures customer profit timely	32(16.7%)	10(5.2%)	25(13.0%)	89(46.4%)	36(18.8%)	3.45	1.31

We are interacting with customers in setting reliable, responsive and other principles for them	16(8.3%)	17(8.9%)	27(14.1%)	54(28.1%)	78(30.6%)	3.83	1.27
We assess and follow up client satisfaction	6(3.1%)	12(6.2%)	40(20.8%)	62(32.3%)	72(37.5%)	3.94	1.05
We assess effect of interaction with clients	15(7.8%)	9(4.7%)	25(13.0%)	97(50.5%)	46(24.0%)	3.78	1.10
Composite mean and SD						3.9396	1.28

Source: Primary Data (2023)

Results demonstrated that 70.4% of respondents show agreement on the statement that NPD had advanced customer interaction management procedure team, mean response was 4.13 and standard deviation was 1.37. Response concerning a use of cross-operational input within the CRM process indicated that 88.1% of respondents show a strong agreement, mean responses was 2.85 as well as standard deviation was 1.26. Moreover, 52.6% of respondents accepted that NPD protects customer relationship management was linked with organizational strategies with the mean response was 3.83 and standard deviation was 1.83, standard deviation was 1.36. Moreover, it has NPD advances measures that were associated with client effect on organization net profit. Furthermore, 83.3% of respondents evidenced that NPD ameliorated measures that were connected to organization effect on customer profit at the mean response of 4.25 as well as standard deviation was 1.06. Moreover, 60.4% of respondents accepted that NPD way of managing customer relationship to organizational financial success, mean response was 3.73 and standard deviation was 1.30. NPD measures customers' profitability over time were evidenced by 65.2 percent, mean response was 3.45 and standard deviation was 1.31. Similarly, 68.7% of respondents argued that their interaction with customer in setting reliability, responsiveness and other principles for them, a mean response was 3.83 and 1.27. Respondents frequently measure and evaluate customers' satisfaction as indicated by 5.31 percent, mean was 3.94 as well as the standard deviation was 0.05. Finally, 74.5% of respondents argued that they assess the role of customer interaction with them, mean response was 3.78 while the standard deviation was 1.10.

Table 4. 3: Correlation Analysis between Customer Relationship Management and Performance of NPD Selected Sites

Customer Relationship Management	Pearson correlation	Efficient use of project cost	Improved project time schedule	High quality of NPD constructed buildings
		0.705**	0.650**	0.644**
	Sig(2-tailed)	0	0	0
	N	192	192	192

Source: Primary Data (2023)

Findings revealed the existence of association between customer relationship management and construction project success owing to the level of significance for customer relationship management as well as efficient use of project cost is corrected (Pearson correlation was 0.705, significance level was 0.000). For customer relationship management and improved project time line was positively associated (Pearson correlation was 0.650, significance was 0.000) meaning that customer relationship management stimulate improvement in the success of NPD construction project. Basing on these results, the null hypothesis stating that customer relationship management had no statistical pertinent impact on the success of NPD sites was rejected..

4.3 Effect of Warehousing Management on Performance of Construction Projects

Third objective assessed Effect of Warehousing Management on Performance of Construction Projects. Most commonly Warehousing Management practices are:

Table 4. 4 : Descriptive Statistics on the adoption of Warehousing Management strategies

Warehousing Management	Strongly Disagree %	Disagree %	Not Sure %	Agree %	Strongly Agree %	Mean	Std
Storage facilitations	77(40.1%)	23(11.8%)	3(1.9%)	30(15.8%)	59(30.2%)	3.59	1.44
Obtaining and dispatching procedure	23(11.8%)	15(7.9%)	0(0.0%)	46(23.7%)	108(92.6%)	3.71	1.46
The actual storage costs	41(21.1%)	7(3.9%)	11(5.9%)	46(23.7%)	87(45.4%)	3.66	1.40

Timeline for warehousing achieve suitable monitoring and evaluation of products and services	11(5.9%)	15(7.9%)	7(3.9%)	15(7.9%)	144(74.3%)	3.55	1.31
Warehousing actions were crucial to receive products	51(26.6%)	0(0.0%)	17(8.9%)	82(42.7%)	42(21.9%)	3.33	1.50
NPD clearly operate on procedure for acquiring products	52(27.0%)	0(0.0%)	16(8.3%)	82(42.7%)	42(21.9%)	3.32	1.51
NPD warehousing workers following up products in due date	53(27.6%)	0(0.0%)	15(7.8%)	82(42.7%)	42(21.9%)	3.31	1.52
Composite mean and SD						3.8198	1.51

Source: Primary Data (2023)

Results demonstrated the employment status of teachers 30.2% strongly agreed. 15.8% remarked a strongly Results demonstrated the storage facilities, 46.0% percentage accepted show an acceptance. Data indicated for receiving and dispatch, 42.9% accepted. Evidenced described the process, 45.4% demonstrated an acceptance and 23.7% accepted. Respondents accepted that timeline for warehousing achieve suitable monitoring and evaluation of products and services as indicated by 82.2 percent, mean response was 3.55 and std deviation was 1.31. Therefore, warehousing actions were crucial to receive products were agreed by 64.6% of respondents with a mean of 3.33 and 1.50, NPD clearly operate on procedure for acquiring products as indicated by 64.6 of respondents, with a mean of 3.32 and 1.51. Finally, the NPD warehousing workers following up products in due date as accepted that 64.7 percent, mean response was 3.31 and std was 1.5.

Table 4. 5: Correlation between Warehousing Management and Performance of Construction Projects

		Efficient use of project cost	Improved project time schedule	High quality of NPD constructed buildings
Warehousing Management	Pearson correlation	.696**	.647**	.626**
	Sig. (2-tailed)	.000	.000	.000
	n	192	192	192

Source: Primary (2023)

Information indicated the existence of association between warehousing management and construction project performance owing to the fact that the estimate response score and p-value between warehousing management as well as efficient use of project cost was positively associated (Pearson correlation was 0.696, significance was 0.000). Warehousing management and improved project timeline was positive and significant (r=0.647 and sig=0.00<0.01) level of significance. The calculated correlation model for warehousing management to the high quality of NPD constructed buildings was positively associated (Pearson correlation was 0.626, significance was 0.000). It means that warehousing management influence the success of NPD construction project. Relying on the anticipated response beginning that warehousing management do not have statistical significant contribution on the project success for construction sites was not accepted.

4.4 Effect of Information Sharing Management on Performance of Construction Projects.

The fourth objective assessed Effect of Information Sharing Management on Performance of Construction Projects. Most commonly Information Sharing Management practices are:

Table 4. 6 : Descriptive Statistics on the adoption of Information Sharing Management practices

Information Management	sharingDisagree %	Disagree %	Not Sure %	Agree %	Strongly Agree %	Mean	Std.
Informing trade partner in advancing the change of expectations	8(3.0%)	2(1.3%)	22(11.4%)	71(36.9%)	91(47.5%)	2.83	1.37
Our trading partners keep us informed on the problem that impact the business	14(7.2%)	24(12.9%)	9(4.7%)	27(14.0%)	80(41.7%)	3.66	.98

Out trade partner share business skills of pertinent procedures with them	4(2.1%)	6(3.2%)	39(20.3%)	71(36.9%)	72(37.3%)	3.16	1.16
Our trade partners share information that supports the creation of business plan	31(16.1%)	6(3.1%)	25(13.0%)	53(27.6%)	77(40.1%)	3.72	1.42
Out trade partner preserve every other informed about event or adjusts that can impact the other partners	16(8.3%)	18(9.4%)	34(17.7%)	50(26.0%)	74(38.5%)	3.77	1.28
Composite mean and SD						3.5127	1.36

Source: Primary Data (2023)

Results demonstrated that 47.5% accepted, mean response was 2.83 and std was 0.98, accepted that results show that informing trade partners in advance of adjusting expects has been applied at NPD construction project. However, 41.7% of respondents strongly agreed that argued that staff members were informed about issues that affect their business concerning the construction project as indicated at the mean response was 3.66, std was 0.81. The researcher demonstrated that 37.3% evidenced that the skills of pertinent business processes and strategies with them as agreed the participants, while the mean response was 3.16 and standard deviation of 1.16. Respondents and trade partners share evidences that assist the creation of business plan with the mean of 3.72, std was 1.42. Finally, Respondents preserve every other informed about event or adjusts that may impact other stakeholders with the mean of 3.77 and std was 1.28..

Table 4. 7: Correlation between Information sharing Management and performance of selected construction companies

		Efficient use of project cost	Improved project time schedule	High quality of NPD constructed buildings
Information sharing Management	Pearson correlation	0.705**	0.560	0.644
	Sig.(2-tailed)	0	0	0
	N	192	192	192

Source: Primary (2023)

The researcher revealed the existence of association between information sharing management and construction project success owing to the estimated link as information sharing management influences efficient use of project cost (Pearson correlation was 0.705, significance was 0.000). There was an effect of information sharing management on improved project time schedule (Pearson correlation was 0.650 and significance was 0.000)..

5.0 Discussion of Findings

The researcher compare and construct the present study and previous studies carried on influence of material supply relationship management, customer relationship management, warehousing management, information sharing as well as the success construction project and effects of procurement on performance of construction project in Rwanda.

5.1 Project Supplier Relationship Management Practices and Performance of Selected Construction Companies

The results to the first objective This research did not contradict the work of Holmberg (2015) who did show a strong association between organizational strategic management and the performance of construction materials, organizations continue to put special focus on financial constructs disregarding other constructs that lead to high opposition by similarity indexes for their employees. Furthermore, et al (2011), assessed the association as well as correlation between suppliers and construction companies through cooperation in improving the quality and the level of success risk of expectation, and conducive situations on the expected connections. The researcher felt that this significant association was qualified by demanding challenges as well as uncertainties related to the pinpoint of expectation for managing material process and close association with all stakeholders especially workers in accordance with common trustfulness as well as clearness as similar would facilitate to overcome challenges and stimulate effective arrangement and preparedness for achieving any constraints emanating from construction sites..

5.2 Customer Relationship Management and Performance of Selected Construction Companies

This study concurs with finding on managing the relationship between the company and customers standards for a particular example of organization level and ability. According to a research done by Akroush et al (2011), it was evidenced that the cause of stimulating cooperation and interaction between customers and workers of construction company emanates from technological advancement and the pertinent role of a business philosophy that means consumer location. It is relevant since it add on the observation of Nguyen and Varying (2023), it was demonstrated that customer relationship management refers to the thought that set in institution and assisted and information based systems relying on wider database. They argue that technological advancement facilitates firms to know expectations of customers, assessing favourable customers and advance or improve strategies for obtaining and preserving them.

5.3 Warehousing Management and Performance of Selected Construction Companies

The research conducted by Bowersox et al (2010), warehouse is very important for the success of construction material due to the ability for effective cooperate in resolving process and improving the attainment of expected goals and objectives of a construction project, facilitating optimum sales and profit. Furthermore, Chen and Notteboom (2012) demonstrated the organization profitability from using effectively warehouse in their function of value more given to services adequately by ameliorating rivalry, such as stable expenses and service degree, reduced answer, timeline, reducing transport expenses and risks, tractability to impulsive marker need and reduced data costs for undertaking closer to actual markets meanwhile market disintegration reduces source related to suitable construction materials (Hilmola & Lorenz, 2011).

5.4 Information Sharing Management And Performance of Selected Construction Companies

The study concurs with the work of Okore and Kibert (2019) who examined effect of skills distributed to supply chain outcomes within tourism and hotel industry in Kenya using descriptive research design where the study targeted 459. The study concluded that sharing information among project stakeholders influence the success of performance and suggested further improvement and accessibility to suitable data. Moreover, Mathae et al (2018) demonstrated that information sharing is strongly affecting the success of construction companies in Kenya. The research was conducted descriptively as well as the distribution of research instruments to 177 respondents drawn from 167 workers using simple random sampling techniques. Results demonstrated that skilled personnel in communication affect positively the success of construction companies in Kenya.

6 Conclusions and Recommendations

To the first specific objective, the research conclude that project material management practices was identified to directly affect performance of construction project like NPD in Rwanda. An effective project material management practice ensured that national management of movement of material and includes the procedure that changes construction raw materials into final materials. To the second specific objective, the researcher concludes that customer relationship management has been determined as pertinent influence to the performance of selected construction companies in Rwanda. Customer relationship management technology helped the company to manage organizational interaction with clients. To third specific objective, the researcher concludes that warehousing can be realized in preserving safe infrastructure of accepting the quality was preserved and construction materials were preserved from external challenges. Storage warehouses were obliged to prevent fraud that leads to loss to project that can end up. To the fourth specific objective, the researcher concludes that distributing data may be explained as the unpaid activities of facts bearded by one institution to another organization. Data sharing stimulate the success of NPD. Generally, the study concludes that proper supply chain management, customer relationship management, warehousing and performance of selected construction companies in Rwanda, and information sharing alongside qualified personnel contributed directly to enhanced performance of selected construction companies in Rwanda.

In light with the above concluding remarks, to the first specific objective, the researcher recommends that the management should apply a systematic approach to manage supply chain as related to cost connected with poor supplier management. Therefore, project material management practices operations should be incorporated. To the second specific objective, the researcher recommends that project managers should accept to minimize delay of buildings by preparing for adequate customer relationship management. To the third specific objective, the researcher evidenced that construction firms should utilization of computer in material storage. The researcher proposes to improve of computer in managing materials sine they can be employed in designing and follow up of material management. To the fourth specific objective, decision makers should ensure that construction institutions should document training policies for project material management practices as well as accepting the role of working skills, capacity and adequate choice of suppliers, working experiences and requirement. Moreover, future studies should be done to other non-government and government organization in the context of supply chain construction project. There is a need to carry out a research on project material management practices, procedures, follow up and control using e-procurement and e-construction material management.

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