



ASSESSMENT OF THE INFLUENCE OF PROCUREMENT PLANNING ON SUPPLY CHAIN PERFORMANCE OF PUBLIC HOSPITALS IN RWANDA: EVIDENCE OF RWANDA MILITARY HOSPITAL.

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ABSTRACT:

The study assessed the procurement planning and supply chain performance of public hospitals in Rwanda. The objectives were finding out the influence of selection of needs or requirements, determining the quantities and estimated costs, selection of appropriate procurement methods and processes on the supply chain performance of Rwanda Military Hospital. The study used the descriptive survey design and inferential statistical. The population was 96 personnel; sample size was 96 people selected using universal and purposive sampling techniques. Data collection techniques were questionnaire technique, while the methods of data analysis were descriptive statistical method; correlation coefficient, and multiple linear regression analysis. Findings showed the value of R-square was 49.5% means that the proportion of supply chain performance (dependent variable) is explained by the independent variables (determining the quantities and estimated costs) at 49.5%. The adjusted R-square is used to compensate for additional variables in the model. In this case, the adjusted R-square is 48.7%. The value of R-square in this study is 56.1% means that the proportion of supply chain performance (dependent variable) is explained by the independent variables (selection of appropriate procurement methods and processes) at 56.1%. The adjusted R-square is used to compensate for additional variables in the model. The adjusted R-square is 55.4%. Findings shows the value of R-square in this study is 59.0% means that the proportion of supply chain performance (dependent variable) is explained by the independent variable (procurement planning) at 59.0%. The adjusted R-square is used to compensate for additional variables in the model. In this case, the adjusted R-square is 58.3%.

Key Words: *procurement planning, supply chain performance, public hospitals*

INTRODUCTION

Procurement planning practices goals might be difficult to achieve by individual organizations alone; this efficiency can be achieved through value-based integration in the business process. Evidence showed that supplies process management plays a crucial role in achieving information integration successfully in procurement practices that lead to effective supply chain performance (Paul, 2017).

Government procurement has often been used to promote social, industrial or environmental aims which are, arguably, secondary to the primary aim of procurement. It is in this regard that government procurement is of particular significance to South Africa. Thus, new contractors found it very difficult to participate in government procurement procedures. Since 1994, the South African government has made provision for the use of procurement as a means to address past imbalances (Lexis Nexis Butterworths, South Africa, 2007).

Procurement planning of medicines and medical supplies is extremely important to ensuring proper supply chain management in hospitals since it contributes affordable cost and accessibility to healthcare of the patients and the community. Availability of essential medicines and medical supplies is a major determinant of quality of health care (Paras, 2015).

Hospitals in Rwanda play a critical role in the management of health as whenever we are all candidates to illness and the only solution, we have, is to seek the drugs which are always prescribed by doctors. These purchases represent

PROBLEM STATEMENT

Despite the efforts made by Government of Rwanda in making procurement process transparent and more efficiency in public hospitals, many governments public health entities do not give proper attention to prepare the annual procurement plans.

A properly well prepared and inspected annual procurement plan is also a pre-requisite for proper national procurement planning. The

one of the largest shares of health expenditure in any country worldwide ranging from 5% to 12% in developed countries to as much as 40% in developing countries. The availability of drugs is thus crucial in the functioning of any Country.

The procurement practices are essential and objectives should be considered. Some of these objectives include quality, quantity, price, speed, and ethics. When correct procurement procedures are followed, it helps to curb some of the avoidable problems that may be experienced like overstocking or understocking of drugs (Rwanda Ministry of Health, 2019).

The procurement process is part of the management cycle of drugs. This goes hand in hand with the selection of drugs, quantification of drug needs, storage, and distribution/supply. The results of this research shall contribute to know the effect of procurement planning practices on supply chain performance in Rwanda Military Hospital with the aim of the availability in public health facilities in Rwanda (Rwanda Ministry of Health, 2019).

In Rwanda, RPPA has vision to make Rwanda the centre of regional excellence in public procurement and its mission is to achieve the best value for money for the government of Rwanda by setting up procurement standards, guidelines, and procedures, building capacity and monitoring procurement proceedings in order to ensure competition, economy, transparency, fairness, efficiency, accountability and zero tolerance to corruption in all public procurement activities (RPPA, 2019).

national medical store consolidates procurement plans from different health facilities constitute a national procurement plan that informs the procurement of medicines and health supplies. A poor procurement plan from a health facility not only affects supply of medicines and health supplies, but it affects the whole country (Chen and Paul, 2014).

From September 2013 when RPPA started to call upon private companies that may have problems of delayed payments, 19 cases have been received by RPPA office during the 1st semester of the fiscal year 2013-2014. For these cases of delayed payment received by RPPA from suppliers/contractors' complaints, RPPA has approached the concerned procuring entities and discussed the issue with them and advocated for suppliers/contractors.

Out of 43 cases reported on by different suppliers and contractors about delayed payments, 26 of them were resolved after that RPPA discussed the issues with the concerned procuring entities. 17 contractors/ suppliers have not yet been paid (RPPA, 2019).

During the fiscal year 2013-2014, RPPA gathered information on contracts performed poorly by contractors and suppliers and terminated contracts. The analysis of poorly performed and terminated contracts showed that the poor performance of contracts by suppliers and contractors was due to the lack of technical and financial capacities of the suppliers and contractors; lack effective procurement planning management of some entities, lack of professionalism of the contractor and suppliers; procuring entities which awarded many contracts

OBJECTIVES OF THE STUDY

The study assessed the influence of procurement planning on supply chain performance of public hospitals in Rwanda. The specific objectives were:

- i) To find out the influence of selection of needs or requirements on supply chain performance of Rwanda Military Hospital;
- ii) To analyze the influence of determining the quantities and estimated costs in procurement

RESEARCH HYPOTHESIS

This study verified research hypotheses as follows.

- (1) **Ho1:** There is significant influence of selection of needs or requirements on supply chain performance of Rwanda Military Hospital;

to one company and sometimes those contracts have to be executed simultaneously and at the end the contractor fails to perform any of them.

Execution of works without contract between the client and the contractor: lack of or ambiguous technical specifications; lack of or poor follow up of contract executions; and lack of smooth communication between the contractor and the clients (RPPA, 2019).

The evidence shows also that ineffective annual procurement planning poses a big challenge to public health facilities in Kigali city, those due to the lack of proper trained staff in procurement system, unattractive public sector salaries; lack of career development that tend to restrict capacity that can retain qualified staff; lack of access to healthcare which deteriorates one's health and reduces their productivity. All these issues affect poor people who have less access to healthcare, yet they experienced severe diseases burden, and live in deprived areas (Kanyange, 2019).

The researcher was motivated to undertake this study for evaluating how procurement planning can be the influence of supply chain performance of public hospitals in Rwanda, with case of Rwanda Military Hospital.

plan on supply chain performance of Rwanda Military Hospital;

- iii) To identify the influence of selection of appropriate procurement methods and processes on supply chain performance of Rwanda Military Hospital;
- iv) To establish the relationship between procurement planning and supply chain performance of Rwanda Military Hospital.

(2) **Ho2:** There is significant influence of determining the quantities and estimated costs in procurement plan on supply chain performance of Rwanda Military Hospital;

(3) **Ho3:** There is significant influence of selection of appropriate procurement

methods and processes on supply chain performance of Rwanda Military Hospital;

CONCEPTUAL REVIEW

Under this section, the researcher reviewed the theoretical literature through the description and explanation of key concepts.

Procurement Planning

Procurement planning provides the process of agreeing to terms and obtaining goods, offerings, or works from an outside source, often via a tendering or competitive bidding process. Procurement planning is used to ensure the buyer gets goods, services, or works on the fine viable rate while components together with best, quantity, time, and area are as compared (Tirole J., 2015).

Supply Chain Performance

The supply chain is made up of vendors, manufacturing facilities, storage facilities, distribution hubs, and retail stores, as well as the raw materials, inventories for goods still being produced, and finished goods that move between the facilities.

THEORETICAL FRAMEWORK

The Procurement Theory

The procurement theory has been developed Robinson in 2019. Its primary disciplinary foundation in organizational sociology, with a focus on political models of decision-making. These models' fundamental presumptions are that individuals have bounded rationality, diverse motivations, and preferences, and that intra-organizational conflict is unavoidable in circumstances involving group decision-making.

This literature conceptualizes purchase decisions as a potential focal point of intra-organizational politics by seeing organizational buying behavior as a multi-actor, multi-agenda process. This in turn draws attention to the potential for using power to address conflicts of interest.

Making judgments on what to purchase, creating specifications, deciding which potential suppliers to shortlist, evaluating the bids received, and

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- (4) **Ho4:** There is significant relationship between procurement planning and supply chain performance of Rwanda Military Hospital.

Supply chain management is a set of approaches utilized to efficiently integrate suppliers, manufacturers, warehouses, and stores, so that merchandise is produced and distributed at the right quantities, to the right locations, and at the right time, in order to minimize system wide costs while satisfying service level requirements.

Supply chain performance can be assessed holistically using a measuring system called supply chain performance measurement. The crucial stage in creating a performance assessment system based on the process is to identify the key supply chain processes, break them down into smaller components, and determine the resources required for each of these process aspects. The inability to have a comprehensive picture of the company's current state, including its cultural components, is one of the reasons why different sustainable development efforts fail.

picking a supplier are viewed as highly political rather than merely technical processes (Robinson et al., 2019).

The fields and disciplines that make up the contemporary policy sciences have their roots in late 19th and early 20th century scholars' interests in political decision-making by governmental entities. The increasing complexity of the modern administrative state, coupled with the Progressive Era's confidence in technical rationality to solve societal ills, focused attention on public decisions and the processes used to reach them.

It was widely believed that, by collecting sufficient relevant facts on any particular issue and subjecting those facts to scientific analysis, better decisions (i.e., public policies) could be reached. An important distinction should be made between analyses without risk and those with risk. Where risk is involved, either in the costs or

the benefits, the concept of best value should be employed.

Procurement activities are also often split into two distinct categories, direct and indirect spend. Direct spend refers to the production-related procurement that encompasses all items that are part of finished products, such as raw material, components and parts. Direct procurement, which is the focus in supply chain management, directly affects the production process of manufacturing firms.

In contrast, indirect procurement concerns non-production-related acquisition: obtaining "operating resources" which a company purchases to enable its operations. Indirect procurement comprises a wide variety of goods and services, from standardized items like office supplies and machine lubricants to complex and costly products and services like heavy equipment, consulting services, and outsourcing services.

This theory was useful to the current study because it helps to show Procurement and Finance have, as functions within the corporate structure, been at odds. The contentious nature of their relationship can perhaps be attributed to the history of procurement itself. Historically, Procurement has been considered Finance's underling. One reason behind this perception can

EMPIRICAL REVIEW

Murray (2018) established the perceived local government procurement best planning practices. Secondary research is then drawn upon to establish local government procurement's response to the economic recession. The study was set within the context of procurement in local government.

Its contribution is in highlighting that perceived best public procurement practice may well, in the short term, be inappropriate and perhaps delay economic recovery. Suggestions for more radical short-term procurement strategic interventions were set out and justified as accelerating the economic recovery. The suggestions were considered appropriate, not only for the crisis but

be ascribed to semantics. When Procurement was in its infancy, it was referred to as a "commercial" operation. And so, the procurement department was referred to as the commercial department rather than the procurement department: the word "commercial" was understood to be associated with money.

So, it was obvious that Procurement would become directly answerable to Finance. Another factor, equally grounded in semantics, was that procurement departments (or rather, commercial departments) were always seen as "spending the money".

This impression was enough to situate procurement within the finance function. Procurement and finance are functions with interests that are mutually irreconcilable. Whereas Procurement is fundamentally concerned with the spending or disbursal of money, finance, by its very nature, performs a cost-cutting role.

That is fundamentally the reason why procurement's aspirations have been constantly checked by Finance's cost-cutting imperatives. This notion, however, has been changing as more chief procurement officers have begun to argue for more autonomy and less interference from Finance departments.

also for future economic downturns or indeed any country facing such a situation.

Angeles (2017) sought to pursue the understanding of current business-to-business public procurement practices by describing the success factors and challenges to its implementation in the corporate setting. The study through factor analysis resulted in three procurement success factors: supplier and procurement practices; end-user behavior and procurement business processes; and information and procurement infrastructure.

In supply chains, teamwork and service enhancement were explored by Stank et al.

(2011). Collaboration is the process by which interdependent parties make decisions. It entails shared accountability for choices and group accountability for results. A cross-departmental scope, a dedication to teamwork, and a shared purpose or objective are essential elements. Improved logistical service performance is anticipated to come from higher degrees of internal and external collaboration, and these two types of cooperation reinforce one another. The results show that internal collaboration has a significant impact on the performance of logistical services, suggesting that businesses should encourage cooperation and collaboration across internal processes to increase logistical efficiency. It is astounding that there is no evidence to demonstrate a direct connection between external collaboration and service performance.

Morgan and John (2015) noted benefit derived from outsourcing purchasing is the imposed behavioral and process discipline which the provider brings. It may be argued that this process

CONCEPTUAL FRAMEWORK

The conceptual framework showed the main roles and factors of literature variables. This study consisted of two research variables which were

discipline could and should be imposed in-house, but in reality, this is often very difficult to enforce. Without process discipline it is difficult to track costs, many smaller entities run into trouble because they simply do not know their true costs and we believe the true cost to be even more difficult to calculate for larger entities who do not have rigorous processes.

Miceli and Near (2014) whistleblowing provides the disclosure by organizational members (former and current) of illegal, immoral, or illegitimate practices under the control of their employers, to persons or organizations that may be able to affect action whistleblowing can both internal and external issue.

It is the act, for an employee or former employee of disclosing what he believes to be unethical or illegal behavior to higher management or to an external authority or public which means the external-whistle blowing. An agency should hold the vendor responsible for meeting all contract requirements for quality, quantity, and timeliness.

procurement planning as the independent variable and supply chain performance as a dependent variable.

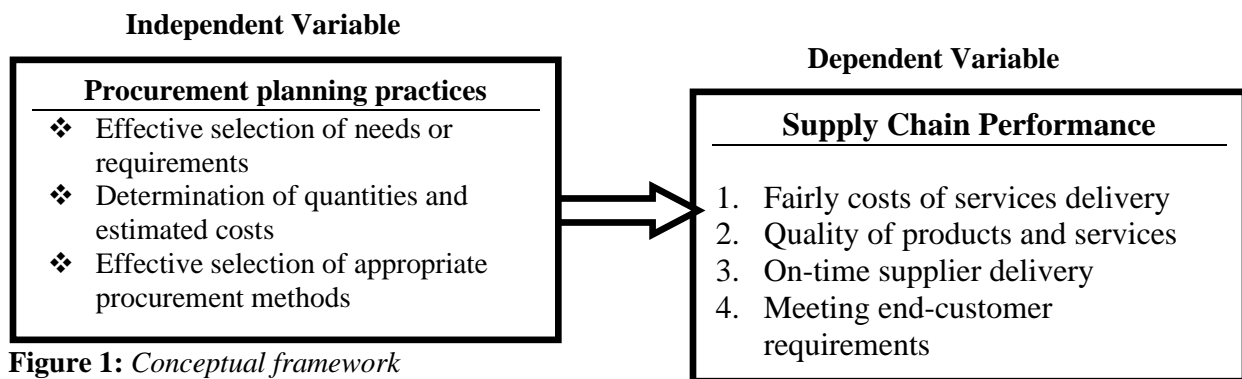


Figure 1: Conceptual framework

Source: Researcher conceptualization, (2022)

RESEARCH METHODOLOGY

The mixed methods were applied in this study as research approaches while, correlation approach was applied in this study to establish the relationship between procurement planning and supply chain performance of Rwanda Military

Hospital. Target population was 96 counting employees and contractors supplying Rwanda Military Hospital in few previous years. The sample size was selected in population of 96 people. The study used universal sampling

technique and purposive sampling techniques to select all 96 respondents as sample size. The data collection techniques of the study such as questionnaire; and documentation research techniques, descriptive statistical method was adopted to describe frequency, percentages, mean, and standard deviation of data collected from respondents at Rwanda Military Hospital (RMH). This study used the correlation coefficient, and multiple linear regression analysis to test the relationship between procurement planning and supply chain performance of RMH.

The study used multiple linear regression where the study shows $Y = a + b X$ where the models

RESULTS AND DISCUSSIONS

Statistical Package for Social Sciences (SPSS) 23.0 version computer software was mostly used to examine the quantitative data that had been obtained. The findings were presented and interpreted in accordance with the study's objectives.

Questionnaires were distributed to 96 respondents in management team worked with Rwanda Military Hospital, and they were given one week of responding the questionnaires. After the evaluation of the answered questionnaires, the

Inferential Statistics Analysis Results

The study showed $Y = a + bX$ where the models, were X =independent variable which was procurement planning (PP), that has three indicators: x_1 =effective selection of needs or requirements (ESNoR); x_2 =determination of quantities and estimated costs (DQaEC); x_3 =effective selection of appropriate procurement methods (ESAPM); while Y = dependent variable was supply chain performance of Rwanda Military Hospital have indicators included y_1 was fairly costs of services delivery; y_2 was quality of

were as follows: X = independent variable which is procurement planning (PP), that has three indicators: x_1 = effective selection of needs or requirements (ESNoR); x_2 = determination of quantities and estimated costs (DQaEC); x_3 = effective selection of appropriate procurement methods (ESAPM).

Y = dependent variable which is supply chain performance of Rwanda Military Hospital, that have indicators including y_1 is fairly costs of services delivery; y_2 is quality of products and services; y_3 is on-time supplier delivery; and y_4 is meeting end-customer requirements. Based on the variables, the functions have been set as $Y=f(X)$, $Y = \beta_0 + \beta_1x_1 + \beta_2x_2 + \beta_3x_3 + \epsilon$.

researcher found 100.0% of participation rate of respondents, and she decided to continue the study with editing, coding, recording, and make statistic Tables.

The results show that the majority of respondents were males, and this was justified by 62.5% of respondents who were males, while 37.5% of respondents were females who dealt with procurement planning and supply chain in Rwanda Military Hospital, Rwanda.

products and services; y_3 was on-time supplier delivery; and y_4 is meeting end-customer requirements. The functions have been set as $Y=f(X)$, $Y = \beta_0 + \beta_1x_1 + \beta_2x_2 + \beta_3x_3 + \epsilon$. The study verified each of the four alternative hypotheses.

Testing Hypothesis one (Ho1)

Ho1 stated that “*There is significant influence of selection of needs or requirements on supply chain performance of Rwanda Military Hospital*”.

Table 1: Model Summary

Model	R	R Square	Adjusted R Square	Std. The error of the Estimate
1	.762 ^a	.581	.574	.77658

a. Predictors: (Constant), selection of needs or requirements

Source: Primary data, (2022)

Findings in Table 1 shows the value of R-square is 58.1% which means that the proportion of supply chain performance (dependent variable) is explained by the independent variables (selection of needs /or requirements) at 58.1%. This indicates that

Table 2: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	49.406	1	49.406	81.922	.000 ^b
	Residual	35.582	59	.603		
	Total	84.988	60			
a. Dependent Variable: supply chain performance of Rwanda Military Hospital						
b. Predictors: (Constant), selection of needs or requirements						

Source: Primary data, (2022)

In this case, from the ANOVA Table 2, the p-value is 0.000 which is less than 0.05 and 0.001, set as standard significance levels. This means that researcher retained

Table 3: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.278	.511		2.499	.015
	selection of needs or requirements	.306	.034	.762	9.051	.000
a. Dependent Variable: supply chain performance of Rwanda Military Hospital						

$$Y = \alpha + \beta_1 X_1 + \epsilon$$

Y=Dependent variable – supply chain performance

α =Constant

ϵ =Error

β =Coefficient of the Disbursement

X_1 = selection of needs or requirements

$$Y = 1.278 + 0.306 (\text{selection of needs or requirements}) + \epsilon$$

Testing Hypothesis two (Ho2)

Ho2 stated that “There is significant influence of determining the quantities and estimated costs in procurement plan on

Table 4: Model Summary

Model	R	R Square	Adjusted R Square	Std. The error of the Estimate
1				

the model is strong, as the independent variable highly explains the dependent variable. The adjusted R-square is used to compensate for additional variables in the model. In this case, the adjusted R-square is 57.4%.

alternative hypothesis states that “There is significant influence of selection of needs or requirements on supply chain performance of Rwanda Military Hospital.”

The regression equation shows that the supply chain performance of Rwanda Military Hospital will always depend on a constant factor of 1.278 regardless of the existence of other determinants. The other variables explain that; every unit increase in selection of needs or requirements will increase also supply chain performance of Rwanda Military Hospital by a factor of 0.306.

supply chain performance of Rwanda Military Hospital.”

1	.704 ^a	.495	.487	.85262
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a. Predictors: (Constant), determining the quantities and estimated costs

Source: Primary data, (2022)

Findings in Table 4 shows the value of R-square in this study is 49.5% means that the proportion of supply chain performance (dependent variable) is explained by the independent variables (determining the quantities and estimated costs) at 49.5%. This indicates that the

model is moderate, as the independent variable moderately explains the dependent variable. The adjusted R-square is used to compensate for additional variables in the model. In this case, the adjusted R-square is 48.7%.

Table 5: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	42.097	1	42.097	57.909	.000^b
	Residual	42.890	59	.727		
	Total	84.988	60			

a. Dependent Variable: supply chain performance of Rwanda Military Hospital

b. Predictors: (Constant), determining the quantities and estimated costs

Source: Primary data, (2022)

In this case, from the ANOVA Table 5, the p-value is 0.000 which is less than 0.05 and 0.001, set as standard significance levels. This means that researcher rejected the null hypothesis and

goes by the alternative hypothesis, which states that the independent variable affects the supply chain performance of Rwanda Military Hospital.

Table 6: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.892	.656		1.359	.179
	determining the quantities and estimated costs	.264	.035	.704	7.610	.000

a. Dependent Variable: supply chain performance of Rwanda Military Hospital

$$Y = \alpha + \beta_2 X_2 + \epsilon$$

Y=Dependent variable – supply chain performance

α =Constant

ϵ =Error

β =Coefficient of the Disbursement

X_2 = determining the quantities and estimated costs

$$Y = 0.892 + 0.264 (\text{determining the quantities and estimated costs}) + \epsilon$$

The regression equation shows that the supply chain performance will always depend on a constant factor of 0.892 regardless of the existence of other determinants. The other variables explain that; every unit increase in determining the quantities and estimated costs will increase supply chain performance by a factor of 0.264.

Testing Hypothesis (Ho3):

Ho3 stated that “There is significant influence of selection of appropriate procurement methods

and processes on supply chain performance of Rwanda Military Hospital”

Table 7: Model Summary

Model	R	R Square	Adjusted R Square	Std. The error of the Estimate
1	.749 ^a	.561	.554	.79519

a. Predictors: (Constant), selection of appropriate procurement methods and processes

Source: Primary data, (2022)

Table 7 shows the value of R-square in this study is 56.1% means that the proportion of supply chain performance (dependent variable) is explained by the independent variables (selection of appropriate procurement methods and processes) at 56.1%. This indicates that the model

is strong, as the independent variable highly explains the dependent variable. The adjusted R-square is used to compensate for additional variables in the model. In this case, the adjusted R-square is 55.4%.

Table 8: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	47.680	1	47.680	75.404	.000 ^b
	Residual	37.307	59	.632		
	Total	84.988	60			

a. Dependent Variable: supply chain performance of Rwanda Military Hospital

b. Predictors: (Constant), selection of appropriate procurement methods and processes

Source: Primary data, (2022)

In this case, from the ANOVA Table 8, the p-value is 0.000 which is less than 0.05 and 0.001, set as standard significance levels. This means that researcher retained alternative, which states

that “there is significant influence of selection of appropriate procurement methods and processes on supply chain performance of Rwanda Military Hospital.”

Table 9: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.081	.555		1.949	.056
	selection of appropriate procurement methods and processes	.282	.032	.749	8.684	.000

a. Dependent Variable: supply chain performance of Rwanda Military Hospital

$$Y = \alpha + \beta_3 X_3 + \epsilon$$

Y=Dependent variable – supply chain performance

α =Constant

ϵ =Error

β =Coefficient of the Disbursement

X_3 = selection of appropriate procurement methods and processes

$Y = 1.081 + 0.282$ (selection of appropriate procurement methods and processes) + ϵ

The regression equation shows that the supply chain performance of Rwanda Military Hospital will always depend on a constant factor of 1.081 regardless of the existence of other determinants. The other variables explain that; every unit increase in selection of appropriate procurement methods and processes will increase supply chain performance of Rwanda Military Hospital by a factor of 0.282.

Testing Hypothesis (Ho4):

Ho4 stated that “There is significant relationship between procurement planning and supply chain performance of Rwanda Military Hospital”

Table 10: Model Summary

Model	R	R Square	Adjusted R Square	Std. An error of the Estimate
1	.768 ^a	.590	.583	.76886

a. Predictors: (Constant), *procurement planning*

Source: Primary data, (2022)

Findings in Table 10 shows the value of R-square in this study is 59.0% means that the proportion of supply chain performance (dependent variable) is explained by the independent variable (procurement planning) at 59.0%. This indicates

that the model is strong, as the independent variable highly explains the dependent variable. The adjusted R-square is used to compensate for additional variables in the model. In this case, the adjusted R-square is 58.3%.

Table 11: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	50.110	1	50.110	84.768	.000 ^b
	Residual	34.877	59	.591		
	Total	84.988	60			

a. Dependent Variable: *supply chain performance*

b. Predictors: (Constant), *procurement planning*

Source: Primary data, (2022)

In this case, from the ANOVA Table 11, the p-value is 0.000 which is less than 0.05 and 0.001, set as standard significance levels. This means that researcher retained the alternative hypothesis

and goes by the alternative hypothesis, which states that “There is significant relationship between procurement planning and supply chain performance of Rwanda Military Hospital”

Table 12: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.929	.433		4.449	.000
	<i>procurement planning</i>	.413	.045	.768	9.207	.000

a. Dependent Variable: *supply chain performance*

$$Y = \alpha + \beta_4 X_4 + \epsilon$$

Y=Dependent variable – supply chain performance

α=Constant

ε =Error

β =Coefficient of the Disbursement

X₄ = procurement planning

$$Y = 1.929 + 0.045 (\text{procurement planning}) + \epsilon$$

The regression equation shows that the supply chain performance will always depend on a constant factor of 1.929 regardless of the existence of other determinants. The other variables explain that; 1-unit increase in procurement planning will increase 0.045-supply chain performance.

CONCLUSION AND RECOMMENDATION

Although the availability of annual purchase plans in the facilities was encouraging, there is still much room for development in terms of the capacity of healthcare professionals, the caliber of logistics management information systems, and management support. This is due to understaffing in annual procurement, ineffective use of logistics management information systems, and a lack of management support for planning annual procurement of medications and medical supplies.

The research problem was resolved, the research objectives were met, and the research questions were addressed as a result of the findings. The study's findings support the existence of a strong and favorable association between Rwanda Military Hospital's supply chain performance and purchase planning and supply chain performance of Rwanda Military Hospital.

The study advises that plans should not be static and that annual procurement plans should be developed collaboratively and constantly evaluated in order to enhance the corporation's procurement performance. In a similar vein, qualified, competent, and experienced procurement specialists should oversee the administration of the procurement process. This will assist in achieving high levels of efficiency and effectiveness as well as the maintenance of strong procurement standards.

Timelines must also be adhered to in order to prevent delays in the supply and implementation of services, as most projects would have overruns. The procurement Unit of RMH must plan, manage and fully document the process to acquire goods, works and services; ensure that the procurement meets program requirements; thoroughly familiar with the governments' procurement policy, procurement law, revised standard bidding documents, revised regulations and accompanying guidelines for the standard bidding documents. Ensure that contracts for goods, works and services are designed to provide the best value to government.

The requirement, request, solicitation selection, contract management, and closeout stages should all be part of the procurement plan. The executive support, leadership, and commitment to change; understanding of the degree of change; agreement on the supply chain management vision and the key processes; commitment of the resources; and empowerment is required to achieve the stated goals are all factors that should be taken into consideration when implementing effective supply chain performance management.

Suggestion for Further Researches

For this reason, further empirical investigations in different regions and countries are needed. The methodology that has been chosen to achieve the research objectives was limited to questionnaires, and documentary. This study looked at three independent variables (effective selection of needs or requirements, determination of quantities and estimated costs, and effective selection of appropriate procurement methods). The researcher recommends further research to investigate the other factors that affect supply chain performance.

Equally, further research should be carried out in other private entities to ascertain whether these findings are universal.

Therefore, the researcher opens the doors for further researchers to consider other factors which have not been considered in this study of procurement planning that influence supply chain performance of public hospitals in Rwanda. For examples:

- [1] Effects of procurement planning on service delivery in public hospitals in Rwanda;
- [2] The effect of buyer-supplier collaboration on supply chain performance of Hospitals in Rwanda;
- [3] The effect of supplier induced corruption on supply chain performance of hospitals in Rwanda;

REFERENCES

- [1] Angeles (2017). "Taxonomy of Buying Decision Approaches". *Journal of Marketing. American Marketing Association*.
- [2] Arjan (2016) *Using effective supplier appraisal techniques to improve the supply chain*.
- [3] Bailey (2014) *Introduction to the Philosophy of Methodology*. London: Sage Publications.
- [4] Chen and Paul raj, (2017). *Contracts, relationships, and integration: Towards a model of the procurement of complex performance*. International Journal of Procurement Management
- [5] Churchhill (2017). *Qualitative Research: Issues of Theory, Method and Practice, Third Edition*. London, Thousand Oaks, New Delhi, Singapore: Sage Publications
- [6] European Union (2017). *Purchasing Performance: Measuring, Procurement, and Selling the Purchasing*.
- [7] Favre (2014). *Supplier evaluation and performance excellence: a guide to meaningful metrics and successful results*. J. Ross Publishing.
- [8] Gurdarshan (2017). *Purchasing and Supply Chain Management: Analysis, Strategy, Planning, and Practice*. Andover: Cengage Learning.
- [9] Henderson (2020) steps for successful procurement planning. <https://zipordering.com/en/procurement-process/procurement-planning.html>
- [10] Johnston & Lewin (2010). *The understanding of current business-to-business e-procurement practices by describing the success factors and challenges to its implementation in the corporate setting*. Nairobi-Kenya.
- [11] Keith & Handley (2011). *Contracts, relationships, and integration: Towards a model of the procurement of complex performance*. International Journal of Procurement Management.
- [12] Kendall (2012). *Fundamentals of Methodology*", a series of papers On the Social Science Research Network (SSRN).
- [13] Kenton, (2020). *E-Ordering and E-Informing on Supply Chain Performance in Retail Marketing Outlets in Kenya*. Journal of Marketing and Consumer Research.
- [14] Krlinger (2017). *Research Methods in Anthropology: Qualitative and quantitative methods. 3rd edition*. Alta Mira Press, Walnut Creek, California.
- [15] Murray (2018). *Purchasing and Supply Chain Management*. Cengage Learning.
- [16] Paige (2012). *Qualitative inquiry and research design: Choosing among five traditions*. Thousand Oaks, California: Sage Publications.
- [17] Robert (2014). "Combining qualitative and quantitative research in developing 'indicators' of research". International Journal of Social Research Methodology.
- [18] Roehrich (2016). *A Theory of Incentives in Procurement and Regulation*. MIT Press.
- [19] RPPA, (2018). *Procurement and Supply Operations in Rwandan public institutions, 2012*.
- [20] Shih (2014). *Development and validation of a measurement instrument for studying supply chain management practices*. Journal of Operations Management 23(6).
- [21] Steven (2020). *Procurement in public institutions: An Exploratory Multi-Case Study from Switzerland*. *Journal of Theoretical and Applied Electronic Commerce Research*.
- [22] Tirole (2015). *Understanding supply chain management: critical research and a theoretical framework*. International Journal of Production Research, Vol. 42, No. 1, 2004, pp. 131-163.
- [23] Webster & Sheth (2019). *The Power to Procure: A Look inside the City of Austin Procurement Program*. Retrieved 26 October 2010.
- [24] Weele (2019). *Procurement practices in retail product management: Buying and Merchandising*.