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**Influence of Supplier Interest on Purchasing Consortia at the County Referral Hospitals in
the Coast Region, Kenya**

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Abstract

Purpose: The objective of the study was to determine the influence of supplier interest on purchasing consortia at the county referral hospitals in the coast region, Kenya. The researcher further investigated the moderating influence of Management Information System on the relationship between supplier interest and purchasing consortia at the county referral hospitals in the coast region, Kenya.

Methodology: The study embraced the descriptive research design. The study population comprised of 212 officials drawn from the county referral hospitals in the coast region of Kenya. The stratified random sampling technique used resulted into having 139 units of analysis. The study used primary quantitative data which was collected via questionnaires, whereas data analysis was through the statistical package for social sciences.

Findings: The hypothesis testing led to the rejection of H_{01} since the p-value of .000 was less than .05, thus depicting that supplier interest has a significant positive influence on purchasing consortia at the county referral hospitals in the coast region, Kenya. The hypothesis testing for the moderated relationship model led to the rejection of H_{02} since the p-value of .000 was less than .05, thus confirming that management information system has a significant positive moderating effect on the relationship between supplier interest and purchasing consortia at the county referral hospitals in the coast region of Kenya. The researcher recommends that county referral hospitals should embrace and consider supplier interest because it influences the purchasing consortia.

Unique Contribution to Theory, Practice and Policy: The researcher also recommends that the county referral hospitals should invest in management information system because it has a significant positive moderating effect on the relationship between supplier interest and purchasing consortia at the county referral hospitals in the coastal region of Kenya.

Keywords: *Purchasing Consortia, Supplier Interest, Management Information System, County Referral Hospitals*

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INTRODUCTION

Purchasing Consortium is a strategy for enhancing competitiveness in supply chain operations in organizations with some common characteristics (Chan, Lettice, & Durowoju, 2019). The concept of a purchasing consortium, introduced in 1927, is based on collaboration in the purchase process (Essig, 2020). The term "purchasing consortium" refers to a broad conception of collaboration that encompasses cooperative purchasing and collective buying of office supplies (Carter, 2018). Purchasing consortiums may vary from collaborating on purchases via an online marketplace or forming a lead-buying agreement to just sharing information and insights (Nollet & Beaulieu, 2020). Purchasing consortia, which provide businesses and government agencies with a broader perspective of united effort in sourcing, have attracted more attention in recent years (Carter, 2018). Researchers in purchasing consortium have developed both the concept and implementation criteria of purchasing consortium (Essig, 2020). This strategy allows members of a group to buy greater power from suppliers, resulting in more advantageous terms than they would have received if they had applied for the same service on their own (Morash & Clinton, 2019). Consolidation also saves money on administrative expenses because the negotiating process is handled by a single organization rather than by a number of entities (Kuei, Madu, & Lin, 2020). This current study endeavored to establish the influence of supplier interest on purchasing consortium at the county referral hospitals in the coast region, Kenya.

Problem Statement

Purchasing consortia are becoming popular in the industrialized nations (Nollet & Beaulieu, 2020). This is as a result of the positive contributions of purchasing consortia to the performance of organizations (Robertson, 2018). Although the concept of pooled sourcing is not new, it has not attracted the necessary adoption in the African context more-so in Kenya. This is because most of the studies such as the study by Chan, Lettice and Durowoju (2019) was done in New York and it used a mixed research design as well as the STATA package in data analysis, whereas the study by Kumar, Scheer and Steenkamp (2021) was conducted in India, and the researchers used research questions instead of hypothesis and the multiple linear regression analysis model in their study. This present study which was done in Kenya used hypothesis, the simple linear regression model as well as the descriptive research design. Again, the conceptualization of the study variables in the conceptual framework for this current study was different from the previous studies. The problem of limited information and research studies on purchasing consortium in Kenya as well as the conceptual, contextual and the methodological gap emanating from the reviewed literature, prompted this current study. This present study therefore conducted a research study in an attempt to unravel the influence of supplier interest on purchasing consortium at the county referral hospitals in the coast region, Kenya.

Objectives

- i. To determine the influence of supplier interest on purchasing consortium at the county referral hospitals in the coast region, Kenya.
- ii. To investigate the influence of management information system on the relationship between supplier interest and the purchasing consortium at the county referral hospitals in the coast region, Kenya.

Hypothesis

H₀₁:Supplier interest has no significant influence on the purchasing consortia at the county referral hospitals in the coast region, Kenya

H₀₂:Management information system has no significant influence on the relationship between supplier interest and the purchasing consortia at the county referral hospitals in the coast region, Kenya.

LITERATURE REVIEW

Theoretical Framework

Stakeholder Theory

The stakeholder theory was proposed by Freeman in the 1980s (Morash & Clinton, 2019). The theory is an organizational decision-making framework that integrates the social contract with ethics and capitalism (Burns & Lee, 2017). The theory looks at how organizations' stakeholders can work together so as to maximize the value of the firm (Manne, 2018). The stakeholder's theory is used in illustrating a typical stakeholder network, which often includes governments, First Nations groups, special interest groups, the environment, and the society at large in which an organization operates (Amelia & Larry, 2018). The operations of an organization can have an impact on all of these stakeholders, and therefore all their interest must be taken into consideration if the organization wishes to operate in a conducive environment and yield substantial results (Barney, 2021). This is because when the interests of stakeholders are not met, group purchasing may be jeopardized. The stakeholders' theory therefore ensures that all parties in the purchasing consortia have their needs satiated so as to warrant a smooth collaboration. The relevance of the stakeholder theory in ensuring that the interest of the stakeholders is considered in the firms' activities prompted its close study so as to give this current research study which looks into the purchasing consortia at the county referral hospitals a robust theoretical background.

Conceptual Framework

This is a pictorial representation of the variables under investigation, showing the relationship amid the dependent and the independent variables (Cooper & Schindler, 2019). The dependent variable for this study was purchasing consortia while the independent variable of the study was supplier interest. The relationship between the independent and the dependent variable was moderated by the management information system as shown in figure 1.

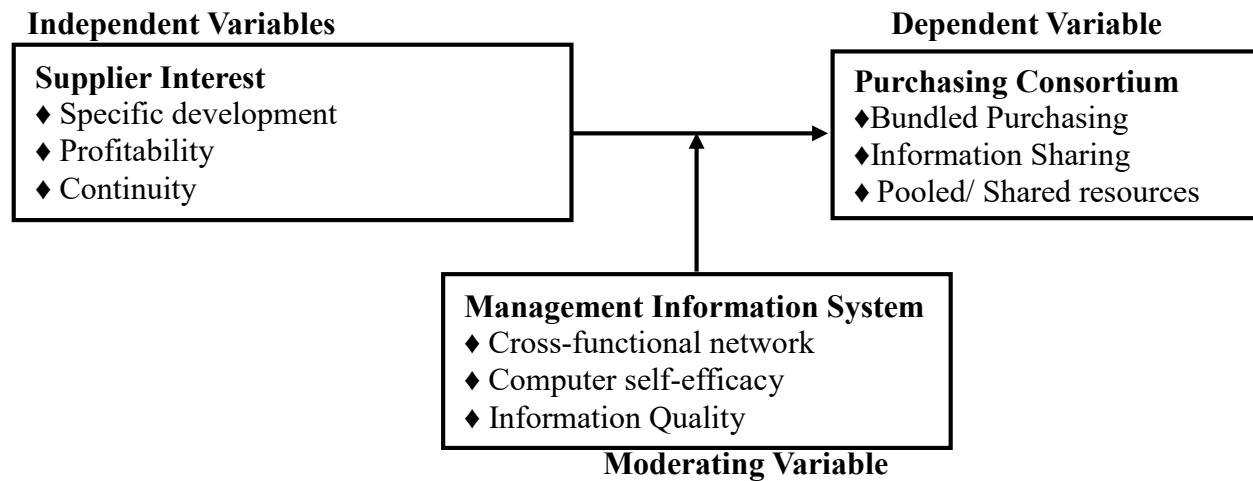


Figure 1: Conceptual Framework

Empirical Literature, Critique and the Research Gap

Supplier's interest has been seen as a key enable for purchasing consortium (Barney, 2021). Supplier's interest and involvement may be viewed as how suppliers want to partner with the business through making queries and bidding for the advertised projects (Kuei, Madu, & Lin, 2020). In Europe, Wooddaock (2019) studied the effect of supplier interest on purchasing consortium in the health sector. Wooddaock (2019) used the mixed research design as well as the multiple linear regression in data analysis. After data analysis, Wooddaock (2019) concluded that supplier interest significantly affects the purchasing consortium of the health sector in Europe. In another research study, Robertson (2018) found that supplier interest has a significant effect on the purchasing consortium of health care facilities in Brazil. Robertson (2018) used research questions in his study as well as the statistical package for social sciences in data analysis.

The reviewed research studies brought about several research gaps which this current study endeavored to address. For instance, the study by Wooddaock (2019) was done in Europe, whereas the study by Robertson (2018) was done in the Brazil. This current study was carried out at the county referral hospitals in the coast region, Kenya. The study by Wooddaock (2019) used the mixed research design, and the study by Robertson (2018) used research questions. This current study used the simple linear regression model as well as the research hypothesis in carrying out its study. Again, none of the reviewed studies conceptualized their supplier interest variable in the same way as in this current study. Therefore, in an attempt to constrict the identified research gaps in methodological, contextual and the conceptual research gap, this study endeavored to undertake a study so as to unravel the influence of supplier interest on the purchasing consortia at the county referral hospitals in the coast region, Kenya.

METHODOLOGY

This study employed a descriptive research design. The target population for this study comprised of 212 officials drawn from the county referral hospitals in the coast region of Kenya. The Yamane Taro 1967 formular was used in narrowing the target population to a sample size of 139 units of

analysis. The stratified random sampling technique was used in selecting the 139 units of analysis out of the target population.

The study used questionnaires in data collection. The collected data was cleaned, coded and analyzed through the Statistical Package for Social Sciences (SPSS). Data analysis was through descriptive statistics, correlation statistics as well as the regression statistics. Diagnostic tests were conducted on the data prior to running the simple linear regression model. The regression coefficients generated from the model were used in testing the research hypothesis at 0.05 level of significance and decision made on whether to reject or fail to reject the null hypothesis. The regression model guiding this study was formulated in the following manner.

$$Y = \beta_0 + \beta_1 X_1 + \epsilon \dots \dots \dots \text{Equation 1}$$

Where: Y: Purchasing Consortia; X_1 Supplier interest

The moderated regression model was espoused in determining the moderation effect of management information system on the relationship between supplier interest and the purchasing consortium at the county referral hospitals in the coast region, Kenya. The moderated regression model comprised of two stages, the first stage involved estimating the main effect of the predictor variable (X) and the hypothesized moderator (Z) as shown in equation (2)

$$Y = \beta_0 + \beta_1 X_1 + \beta_z Z + \epsilon \dots \dots \dots \text{Equation 2}$$

Where: Z: the moderating variable

The second stage involved adding the interaction of the moderating variable so as to obtain equation (3).

$$Y = \beta_0 + \beta_1 X_1 + \beta_{1z} X_1 * Z + \epsilon \dots \dots \dots \text{Equation 3}$$

Where: $X * Z$: the interaction between the independent variable and the moderating variable

FINDINGS AND DISCUSSION

Diagnostic Test Results

Diagnostic tests were conducted on the data as a prerequisite for the successful running of the simple linear regression model employed in this study.

Test for Normality

Normal distribution of the data is confirmed when the normal Probability to Probability plot tends to follow a liner pattern (Kothari & Garg, 2019). Figure 2 shows that the data points in the P-P plot follow a linear distribution pattern, thus confirming that the data set for this study was normally distributed.

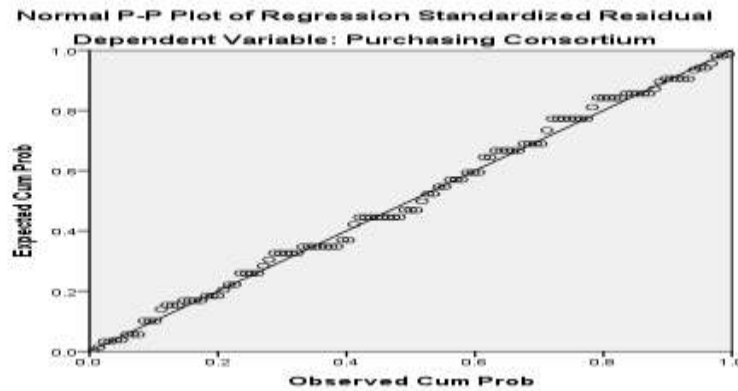


Figure 2: Normal P-P Plot

Test for Linearity

The presence of linear relationship between the independent and the dependent variables is confirmed when the scatter plot portray an oval shape distribution (Holmes, 2019). The oval shape distribution pattern of the scatter plot in figure 3 confirmed the presence of linearity, thus paving way for the successful running of the linear regression model.

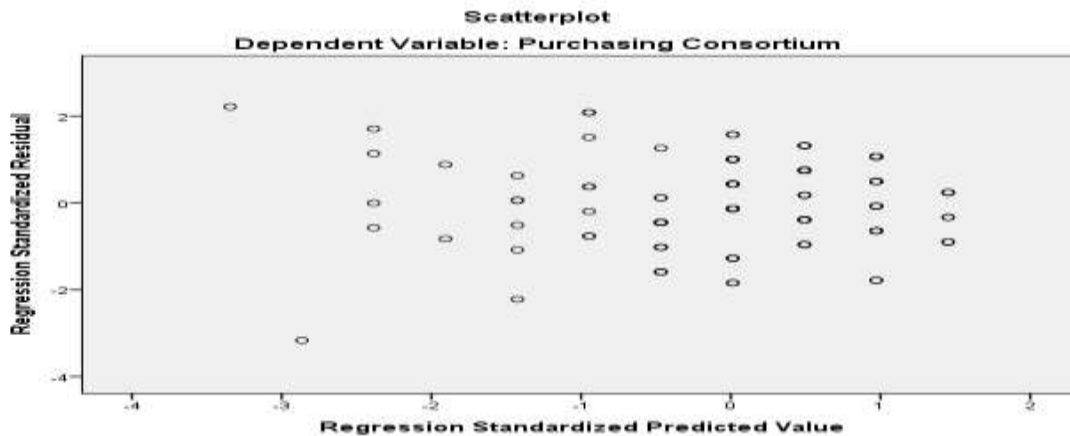


Figure 3: Scatter Plot

Descriptive Test Results

Table 1: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Purchasing Consortium	113	1.33	5.00	4.0767	.66078
Supplier Interest	113	1.33	5.00	3.8466	.80065
Valid N (listwise)	113				

Table 1 showed that the overall mean for the supplier interest variable was 3.8466. The mean score statistic of 3.8466 indicated the general agreement by the respondents that the county referral hospitals consider supplier interest when constructing purchasing consortia. The standard deviation statistics value of .80065 which was less than the mean value indicated that the data for

the supplier interest variable was well dispersed around the central tendency. Again, the overall mean statistics of 4.0767 and the standard deviation of .66078 for the purchasing consortium dependent variable showed that data was well dispersed around the mean.

Pearson's Correlation Analysis Results

The Pearson's correlation analysis statistics were generated and tabulated in Table 2.

Table 2: Pearson's Correlations Coefficients

		Purchasing Consortium	Supplier interest	Interaction between supplier interest and MIS
Purchasing Consortium	Pearson Correlation	1	.510**	
	Sig. (2-tailed)		.000	
	N	113	113	
supplier interest	Pearson Correlation	.510**	1	
	Sig. (2-tailed)	.000		
	N	113	113	
Interaction between supplier interest and MIS	Pearson Correlation	-.310**	-.558**	1
	Sig. (2-tailed)	.000	.000	
	N	113	113	113

** . Correlation is significant at the 0.01 level (2-tailed).

The Pearson's correlation analysis outcomes presented in Table 2 indicated a strong positive relationship of .510 between supplier interest and purchasing consortium, which was significant at 0.01 level (2-tailed). The correlation coefficient for the interaction between portfolio approach and Management Information System (MIS) and the purchasing consortia was an inverse relationship of -.310.

Regression Analysis Results

This section comprised of the Table 3 for the model summary, Table 4 for the ANOVA and Table 5 for the regression coefficients for the direct relationship model. Table 4.6 was used in presenting the regression coefficients for the moderated relationship model.

Table 3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.729 ^a	.531	.490	.100

a. Predictors: (Constant), Interaction between supplier interest and MIS, supplier interest
b. Dependent Variable: Purchasing Consortium

The R-square results of 0.531 in Table 3 indicated that over 53.1% of the variability of the dependent variable could be explained by the independent variable, thus indicating that the model was a good fit.

Table 4: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	54.067	9	7.109	10.500	.000 ^b
	Residual	58.933	103	.572		
	Total	113	112			

a. Dependent Variable: Purchasing Consortium

b. Predictors: (Constant), Interaction between supplier interest and MIS, supplier interest

The significant F test results of 0.000 in table 4.4 indicated that the model was fit and statistically significant.

Table 5: Regression Coefficients for the Direct Relationship Model

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.441	.296		8.234	.000
	supplier interest	.266	.045	.3	5.615	.000

a. Dependent Variable: Purchasing Consortium

Out of the findings in Table 5, the simple linear regression model for the direct relationship model was fitted as shown in equation 4.

$$Y = 2.441 + 0.266X_1 \dots\dots\dots \text{Equation 4}$$

Where: Y: purchasing consortium; X₁: supplier interest

Table 6: Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.857	.311		9.183	.000
	supplier interest	.131	.033	.4	16.033	.000
	Interaction between supplier interest and MIS	.163	.032	.2	26.283	.000

a. Dependent Variable: Purchasing Consortium

Out of the findings in Table 6, the regression model for the moderated relationship was fitted as shown in equation 5.

$$Y = 2.857 + .131X_1 + .163_{12}X_1 * Z \dots\dots\dots \text{Equation 5}$$

Where,

Y: is the purchasing consortium

X₁: is the supplier interest

₁₂X₁*Z: is the interaction between supplier interest and MIS

Hypothesis Testing

The p-value statistics from the regression model in Table 5 and 6 were used in testing the hypothesis at 0.05 level of significance. The results for the hypotheses testing were presented in Table 7.

Table 7: Hypothesis Testing for the Direct relationship Model

Hypothesis Statement	P-value	Decision Rule
H₀₁ : Supplier interest has no significant influence on the purchasing consortia at the county referral hospitals in the coast region, Kenya	.000	Reject H₀₁ , Since P-value ≤ 0.05
H₀₂ : MIS has no significant moderating influence on the relationship between supplier interest and the purchasing consortia at the county referral hospitals in the coast region, Kenya	.000	Reject H₀₂ , Since P-value ≤ 0.05

Discussion

The main objective of the study was to determine the influence of supplier interest on purchasing consortium at the County Referral Hospitals in the Coast Region, Kenya. The study further investigated the moderating influence of Management Information System (MIS) on the relationship between supplier interest and purchasing consortia. The Statistical Package for Social Sciences (SPSS) was used in data analysis and the findings were presented in tables, charts and plots. The hypothesis testing in table 4.7 led to the rejection of **H₀₁**, since the p value of 0.000 was less than 0.05. The rejection **H₀₁**, indicated that supplier interest has a significant positive influence on the purchasing consortium of County Referral Hospitals in the Coast region of Kenya. These findings were consistent with the findings of Wooddaock (2019) who concluded that supplier interest significantly affects the purchasing consortium of the health sector in Europe. The findings were also similar to the findings of Robertson (2018) who found that supplier interest has a significant effect on the purchasing consortium of health care facilities in Brazil. The hypothesis testing for the moderated relationship between the interaction between supplier interest and MIS and purchasing consortia in table 4.7 led to the rejection of **H₀₂** since the P-value of 0.000 was < 0.05 . The rejection of **H₀₂** indicated that MIS has a significant positive moderating influence on the relationship between supplier interest and purchasing consortia in County Referral Hospital in the Coast Region, Kenya.

Conclusion

Based on the outcomes from this study, the researcher concludes that supplier interest has a significant positive influence on the purchasing consortia in County Referral Hospital in the Coast Region, Kenya. This conclusion was drawn from the statistical analysis which revealed a strong correlation between supplier interest and purchasing consortia. The rejection of **H₀₁** further substantiated the significant positive influence of supplier interest on the purchasing consortia in County Referral Hospital in the Coast Region, Kenya. With reference to the moderating variable, the researcher concludes that MIS has a significant positive moderating influence on the

relationship between supplier interest and the purchasing consortia in County Referral Hospital in the Coast Region, Kenya.

Contribution of the Study

To the government of Kenya and other International regulatory bodies such World Bank and the WHO the study recommends a procurement Policy Analysis and Alignment with consortium practices in the health sector. To the hospital management, the study recommends an in-depth assessment and categorization of the procurement needs by the County referral hospitals so as to incorporate the supplier's interest. To the learning institutions, which are mandated to providing further knowledge and research, this study recommends a curriculum integration and enhancement to foster on the dynamics of purchasing consortium.

Recommendations

The researcher therefore, recommends that the County Referral Hospitals in the Coast Region of Kenya should embrace and consider supplier interest because it positively influences the purchasing consortia. The researcher also recommends that the County Referral Hospitals in the Coast Region of Kenya should invest in MIS because it has a significant positive moderating influence on the relationship between the supplier interest and the purchasing consortia.

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