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INFLUENCE OF SUPPLY CHAIN ACCESSIBILITY ON PERFORMANCE OF TEA PROCESSING FIRMS IN MOUNT KENYA REGION, KENYA

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ABSTRACT

Tea is globally among the most popular and lowest cost beverages, next only to water. It is consumed by a wide range of age groups at all levels of society. More than three billion cups of tea are consumed daily worldwide. The Kenya tea industry dropped from being the biggest exporter of black tea items on the planet to being the second biggest exporter behind China in the year 2018. This means Kenya faces solid rivalry from different exporters of black tea for example China, Sri Lanka, India, and Germany. This study along these lines sought to determine the influence of supply chain accessibility on the performance of tea processing firms in the Mount Kenya Region, Kenya. This study was anchored on the Contingency Theory. A descriptive survey design was performed on the tea processing firms in Mount Kenya Region, Kenya. The study was focused on the Managers responsible for Planning, data executives, acquisition, stock administration, warehousing, creation, circulation, transportation, Centre gatherings, and marketing office. 72 respondents were attained through purposive sampling. A structured questionnaire was a fundamental assortment instrument for the study where quantitative information was gathered and broken down through Statistical Package for Social Sciences version 22. Descriptive and inferential analysis was used and Figures and tables were utilized to present the study findings. The study established that supply chain accessibility has a positive influence on the performance of tea processing firms in Kenya. The relation is positive and significant at the 1% level as the p-value associated with the Z value (8.49) is less than 0.01. In conclusion, in a changing and challenging environment, processing firms must advance their supply chains beyond the traditional. Without a strategic focus on supply-chain risk management, supply chain operations can rapidly deteriorate, putting quality, profitability, and lives in danger. The study recommends that tea processing firms in Kenya should have a clearly defined sourcing strategy that will significantly improve both the quality and the speed required to achieve a firm's objectives.

Keywords: *Supply Chain Accessibility, Performance, Tea Processing Firms*

Background of the Study

Among South African assembling and value addition firms, Mashiloane, Mafini and Pooe (2018) showed a positive critical connection twixt the dynamics of inventory networks together with data sharing and inter and intra-organizational connections; between data sharing and both hierarchical connections and store network connections and between authoritative connections and production network execution.

Openness is the capacity to faster get accurate and appropriate data. When a firm has utilized its readiness ability to sense change it ought to be able to get appropriate information in order to rapidly act decisively (De Groote & Marx, 2013). Data access within the chain is a key necessity for an agile supply chain. At a low level of acceptance, supply chain accomplices need to share real-time requests or demand, stock/inventory, and production information. This is a big test to accomplish since it incorporates information from many sources, firms, levels, and time spans (Lin, Chiu & Chu, 2006). In spite of this, most organizations do not have what Google calls "insane data accessibility" in the required time in this manner has a restricted degree of spryness. Many despite everything depend on their technological data innovation or information technology (IT) office to be furnished with reports that take time to create and in many cases are constrained to inflexible configurations. On contrary, firms that need to be dexterous ought to provide access to continuous information to all partners who could profit from snappier access to relevant data (Yang, 2014).

Coordinated organizations have put net-worthy assets into improving information availability inside their inventory chains. For instance, Procter and Gamble (P&G) and Wal-Mart have figured out how to utilize data innovation or information technology to share information. P&G employs the GT Nexus platform to accomplish ongoing perceivability into stock streams over its worldwide network. To attain a "single version of the truth," all store network accomplices are joined to a similar cloud-based platform, to gain admittance to a typical, real-time data set, which includes the status of orders, stocks, shipments, documents, and payments. Organizations can utilize this data to rapidly settle on choices to decrease inventories or move items to a closer location for ease of access by end consumers in times of need.

The performance of Kenya Tea Development Agency managed factories and supply chain management practices agree that factories face supply interruptions in their operations and they coincidentally lacked the necessary supply chain accessibility to handle the losses. This is according to, Ngatia (2013).

Statement of the Problem

The main objective of supply chain management is to provide products to end customers. Leading organizations understand the importance of the customer in the supply chain since the customer has a significant role to play in the performance of the organization. For an organization to ensure efficiency and effectiveness there is a need to adopt good supply chain management practices in order to stay ahead of competitors. Handfield and Nichols (2019) assert that upstream and downstream integration of supply chain activities is essential in enhancing the performance of an organization.

There are a number of studies that have been carried out on supply chain accessibility practices as well as on organizational performance. For instance, Li et al, (2006) carried out a study on the effect of SCM practices on organizational performance and competitive advantage. The study revealed that SCM practices are multidimensional and they cover both upstream and downstream activities of the supply chain. The findings also revealed that there is a significant relationship between supply chain management practices and organizational performance. However, the

study failed to come out clear on the effect of the practices on the financial performance of an organization.

Despite the availability of studies on supply chain management practices and performance, there are no studies that have focused on the tea sector in Kenya. The tea sector plays a very significant role in the economy and is one of the areas where efficient and effective supply chain management is highly required. This inadequacy left a research gap this study sought to fill. The study, therefore, sought answers to the following question; what is the influence of supply chain accessibility on the performance of tea processing firms in Mount Kenya Region, Kenya?

Purpose of the study

To determine the influence of supply chain accessibility on the performance of tea processing firms in Mount Kenya Region, Kenya

Contingency Theory

This chance speculation was hatched by Lawrence and Lorsch whose proposition was that the quantity of uncertainness and estimate of alteration in an aura affects the growth of the inner firm's attributes. It holds that the most effective organizational structural design is where the structure fits the occurrences. Rather than proliferating all-around appropriate association befitting organizational standards, the hypothesis attempts to show that various conditions require distinctive administrative structures i.e Contingency theories dealing with organizational structure(so-called 'structural contingency theories') think about nature or environment, the administrative size and the firm's strategy outcome factors.

These are the factors that an authoritative structure must be adjustable too. The systematic methods accentuate the connection between emphasizes the interaction between the firm and the aura in conjunction with the flexibility of the surroundings (Otley, 2016). The theory is thus fundamental in that it recommends dynamism take in not limited to accessibility in the supply chain to adapt to the consistently changing operational surroundings.

Conceptual Framework

Such a framework is a conjectured model showing a vital connection between the variables: dependent and independent variables on the right and the left respectively Finchman (2008). Figure 1 below shows a conceptual framework for the relationship between supply chain accessibility and the dependent variable, organizational performance.

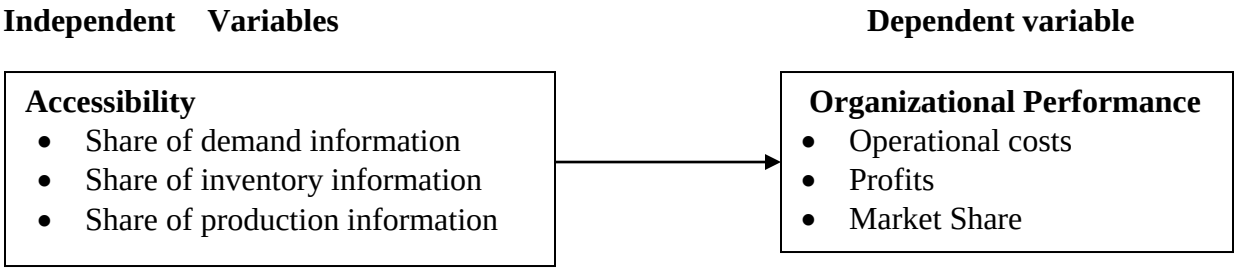

Figure 1: Conceptual Framework

Research Design

This study used a descriptive survey design to bring out the underlying relationship of the variables. The design is good in answering the how what, when, and which questions. The choice of the design is because of its suitability in answering the research questions used in this study (Kumar, 2019). The design was also suitable for the investigation or study because it supports

the applicability of the questionnaire to collect quantitative data which was analysed quantitatively to achieve research objectives. Descriptive survey design fits reasonably for this study since it offered a chance to incorporate the qualitative and quantitative techniques of information assortment or data collection and it is less tedious than quantitative analytical experiments.

Target Population

Any items or things in an area of inquiry is the one referred to as population and it is as well-known as the "Universe'' (Mackey & Gass, 2015. In this study, the target population was the 8 tea factories in the Mount Kenya region in Kenya.

Sample population

A collection of units chosen from the universe to represent it is known as a sample, Taylor, Bogdan and DeVault (2015). This study targeted a sample size of 72 respondents drawn from the management team of the tea factories in Mount Kenya region, Kenya.

Table 1: Target Population

S/NO	Factory	Target No. of Managers
1	Ndima	9
2	Kangaita	9
3	Mununga	9
4	Kimunye	9
5	Thumaita	9
6	Kathangariri	9
7	Mungania	9
8	Rukuriri	9
Total		**72**

Source: Researcher (2020)

Data Collection Instruments

Since the specialist to a great extent expects to obtain first-hand (original) unprocessed information legitimately and directly from the study populace, the primary data assortment approach will be viable. This is because the study was based mainly on individual views and perceptions. The study used Questionnaires, as a primary source of data from respondents. Questionnaires encourage voluntary feedback when organized in a reasonable and orderly manner. Questionnaires that were open and closed-ended were employed.

Method of Data Analysis and Presentation

Quantifiable information gathered in an investigation is fairly broad and research questions can't be replied to by a straightforward study of numeric data and in this manner, information should be well prepared and broken down in a methodical and cognizant manner (Walliman, 2017). Kombo and Tromp (2006), say that data analysis refers to examining what has been collected in a survey or experiment and making deductions and inferences. The data was first cleaned so as to avoid any discrepancies before being analysed. The data was then coded and input into the computer. The data was then categorised and thereafter summarised using descriptive measures such as frequencies, percentages, means and inferential statistics. Tables and graphs were used for the presentation of the findings. Correlation analysis was used to determine the relationship between the variables. To achieve this, data was coded and analysed by Statistical Package for Social Science (SPSS Version 20.0) program.

The multiple regression models were in the form:

$\mathbf{Y_i = \beta 0 + \beta_1 SDI + \beta_2 SII + \beta_3 SIP + \varepsilon.}$

Where:
Y_i= Dependent Variable (Performance)
$ß_0$= Constant
$ß_1$……$ß_3$= Coefficient of the independent variable
SDI = Share of demand information,
SII = Share of inventory information
SIP = Share of production information
ε = error term

Response Rate

The study targeted 72 respondents of which 70 filled in and returned the questionnaires making a response rate of 97%. This was deemed sufficient to conclude the entire population as indicated by De Vaus, (2013), who points out that a response rate of 80% and above obtained from a sample size is considered adequate for a study to draw conclusions. Cooper and Schindler (2003) indicated that a response rate of between 30 to 80% of the total sample size is sufficient to represent the opinion of the entire population. The information is as tabulated in figure 2.

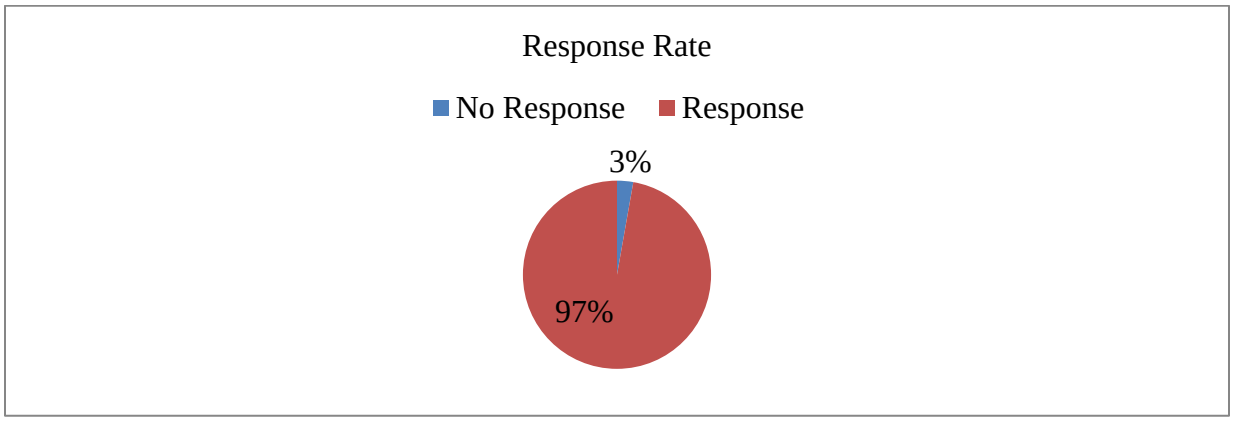

Figure 2: Response Rate

Descriptive Statistics

Influence of supply chain Accessibility on Performance

Table 2: Influence of supply chain Accessibility on Performance

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	SD
The organization has invested in channels to share demand information	4	9	17	17	23	3.66	1.222
The organization has invested in channels to share inventory information	4	19	12	17	17	3.55	1.186
The organization has invested in channels to share production information	6.	5	21	22	16	3.56	1.196

The organization has invested in channels to share supply information	5	12	9	19	26	3.49	1.228
Information sharing platforms have been set up for interactions between the company and its customers	6	11	16	12	16	3.55	1.386

Source: Field Data (2022)

The organization had invested in channels to share demand information had the highest mean score of 3.66 as 23 of the respondents strongly agreed and 17 agreed with the practice, a total of 9 of the respondents however disagreed with the same. The organization had invested in channels to share inventory information; the indicator had a mean score of 3.55. 19 of the respondents disagreed with the sentiments as only 17 agreed and strongly agreed with the same. When the respondents were asked to indicate whether the organization had invested in channels to share production information, 22 of the respondents agreed, and 21 were neutral while 5 of the respondents disagreed with 6 strongly disagreed.

The study sought to find out whether the organization had invested in channels to share supply information; with a mean of 3.49, 26 of the respondents strongly agreed with 19 agreeing. However, 12 of the respondents disagreed with 5 strongly disagreeing. Information sharing platforms have been set up for interactions between the company and its customers (mean=3.55). 16 strongly agreed as 12 agreed that the practice had an influence on performance. A total of 11 of the respondents however disagreed with the practice as illustrated in Table 2.

These findings are in line with those of Ponomarov (2012) that supplier rationalization based on quality, pricing, delivery and performance of the product has a significant relationship with four elements of customer satisfaction -product quality, product variety, delivery service and competitive pricing- and firm performance. Musa and Tang, (2012) also stated that supplier base rationalization narrows the domain and severity of the risk to which exchange is exposed, and thereby encourages cooperation and trust.

Regression Analysis

The section presents and discusses findings resulting from the regression analysis.

Regression Model Summary

The study carried out a regression analysis to establish the influence of the independent variables on supply chain Accessibility. The model summary is depicted in Table 3.

Table 3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.767[a]	.589	.567	.37420

a. Predictors: (Constant), Share of demand information, Share of inventory information and Share of production information.

Source: Field Data (2022)

The R^2, the coefficient of assurance shows changeability in subordinate variable clarified by the fluctuation in free factors. This worth reveals to us how supply chain Accessibility can be clarified Share of demand information, Share of inventory information and Share of production information. The R^2 estimation of 0.589 infers that 58.9% of the varieties in gracefully chain effectiveness can be clarified by the varieties in free factors. This along these lines implies that

different elements not concentrated in this examination contribute 41.1% of gracefully chain productivity.

Multiple Regression Analysis

The study directed various relapse examinations and the discoveries of the numerous relapse model is in Table 4.

Table 4: Regression Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
	B	**SE**	**B**	**t**	**p**
Constant	1.286	.298		4.316	.000
Share of demand information	-.029	.074	-.035	-.395	.694
Share of inventory information	.292	.081	.378	3.619	.001
Share of production information	.383	.092	.443	4.172	.000

a. Dependent Variable: Supply Chain Efficiency

Source: Field Data (2022)

From the model, holding the independent variables constant, supply chain Accessibility would increase by 1.286. It was built up that a unit increment in demand information would cause a reduction in supply chain Accessibility by a factor of 0.029, a unit increment in inventory information would cause an expansion in supply chain Accessibility by a factor of 0.292, a unit increment in production information would cause an expansion in supply chain accessibility by a factor of 0.383. The un-normalized beta coefficients in Table 4 were then used to acquire the general relationship of the free factors and the needy variable and the model was detailed as:

$\mathbf{Y_i = \beta 0 + \beta_1 SDI + \beta_2 SII + \beta_3 SIP + \varepsilon.}$

Where:

Y_i= Dependent Variable (Performance)

$ß_0$= Constant

$ß_1$……$ß_3$= Coefficient of the independent variable

SDI = Share of demand information,

SII = Share of inventory information

SIP = Share of production information

ε = error term

From the multiple regression analysis, the ANOVA test results are presented in Table 5.

Table 5: ANOVA of Independent Variables and Dependent Variable

	Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Regression	15.026	4	3.757	26.828	.000[b]
Residual	10.502	75	.140		
Total	25.528	79			

a. Dependent Variable: Supply Chain Efficiency

b. Predictors: (Constant), Share of demand information, Share of inventory information and Share of production information.

Source: Field Data (2022)

From the ANOVA results, since the p-value (.000) was obtained, it was concluded that at 5% significance level, the combined effect of the independent variables has a statistically significant influence on the agility of the supply chain.

Summary of the Findings

The study established that supply chain accessibility has a positive influence on the performance of tea processing firms in Kenya. The relation is positive and significant at the 1% level as the p-value associated with the Z value (8.49) is less than 0.01.

The supply chain accessibility has been on developing long-term, trust-based relationships between the supply chain members.

The organization investing in channels to share demand information (mean=3.55), investing in channels to share inventory information (3.56)**,** investing in channels to share production information (mean=3.56), investing in channels to share supply information (mean=3.66) were shown to increase supply chain accessibility and to influence performance in terms of costs, delivery, quality and customer service levels. According to Blackhurst *et al*. (2011) supply chain accessibility influences performance.

Conclusion

In conclusion, in a changing and challenging environment, processing firms must advance their supply chains beyond the traditional. Without a strategic focus on supply-chain risk management, supply chain operations can rapidly deteriorate, putting quality, profitability, and lives in danger. From a managerial standpoint, it becomes important to understand and actively manage all the supply chain disruptions that influence the business performance and continuity of organizations. Firms need to realize the importance of their supply chain resilience capabilities which are crucial during supply chain disruptions. The implementation of supply chains risk management strategies such as alertness, flexibility, and accessibility is necessary to ensure the continuity of businesses.

Recommendations

The study recommends that tea processing firms in Kenya should have a clearly defined sourcing strategy that will significantly improve both the quality and the speed required to achieve a firm's objectives.

Strategic Sourcing is the process of evaluating, selecting and aligning with suppliers to achieve supply chain improvements in line with a firm's strategy. A portfolio analysis technique (Kraljic) which analyses the supply base according to supplier risk factors: risk relates to exposure to supply failure and supply market complexity should be used as a proactive supply chain risk management process.

Given that tea is the country's top exchange earner, and the smallholder sector comprises 60% of the country's total production, the study recommends that policymakers continually evaluate the success of and/or the challenges of the KTDA model to ensure that the laid down policy and regulatory framework is supportive of strategic accomplishment, not only for KTDA but also for other industry players, since the implementation of an SC strategy is inherently inter-organizational. This will enhance the earnings derived from the trade of tea, for both the small-scale farmer and the economy at large.

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