

## CHALLENGES IN IMPLEMENTING SUSTAINABLE SUPPLY CHAIN MANAGEMENT AMONG SELECTED SUPERMARKETS IN NAIROBI, KENYA

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### ABSTRACT

The purpose of this study was to find out the challenges encountered by supermarkets in implementing sustainable supply chain management in Kenya. The study focused on five supermarkets in Nairobi CBD area and they are; Nakumatt, Naivas, Ukwala, Tuskys and Uchumi. The specific objectives were to establish the extent organization culture, resources; stakeholders and government regulation affect implementation of SSCM among selected supermarkets in Nairobi CBD area. The study was guided by organization culture theory, systems theory, resource based view theory and institutional theory. The study employed a descriptive research design. The target population comprised of 92 managers in the five selected supermarkets. They included senior managers, branch managers/assistant branch managers and departmental heads. Since the study population was small and variable, census approach was adopted whereby all the 92 managers formed the sample size of the study. Primary data was collected by administration of questionnaires to the managers. A pilot survey was conducted whereby 5 respondents in the five supermarkets in CBD area participated. Descriptive and inferential statistics were used for the analysis, and data was presented using frequency tables, bar graphs and pie charts. The findings showed that organization culture, stakeholder involvement, resources and government policies influence implementation of sustainable supply chain management. The study concluded that management support influence implementation of sustainable supply chain management. Stakeholders, such as manufacturers, supplier and customers influence the implementation of sustainable supply chain management. Resources and especially financial resources are also important in the implementation of SSCM. The study recommends awareness creation among supermarkets in Kenya on how to implement sustainable procurement and the government to create legally binding policies and framework of enforcing implementation of sustainable supply chain management measures.

**Key Words:** *Sustainable supply chain management, selected supermarkets, organization culture, stakeholder involvement, resources allocation, government regulations*

## 1. Introduction

The issue of sustainability in Supply chain management is gaining attention in both academic literature and industry practice as an area of opportunity. Companies across geographical and industry boundaries are implementing sustainability initiatives in the supply chain in response to pressures from customers, regions of operation, investors and even employees (Melnyk, Davis, Speakman & Sandor, 2010). Sarkisa, Zhub and Laic (2011) suggests another view which is more detailed about stages in the supply chain that considers environmental sustainability and include; green procurement decisions, green production processes, green distribution and transportation, reverse logistics operations and green packaging.

Global retailers such as Wal-Mart and other supermarkets all over the world are responding to pressures on packaging, waste reduction and other environmental issues of Green Supply Chain Management, despite challenges which they face in its implementation. ASDA a subsidiary of Walmart at the United Kingdom which is second largest chain by market share retailing food, clothing, toys and financial services supermarket have made tremendous efforts towards promoting green initiatives as a strategy to cut cost, however, customers reluctance and perception that green products are expensive make them reluctant in embracing SSCM (Seth & Randall, 2005). Coca Cola Company, the world's leading producer and retailer of soft drinks also face issues in making the entire value chain go green due to stakeholders' resistance. Stakeholders are therefore the most prevalent obstacle towards realization of sustainable supply chain. Coca Cola having diverse stakeholders in different parts of the world like; distributors, packaging, and other stakeholders makes it difficult to convince them to work towards one goal (Milovanović, Barac & Andjelković, 2009).

Decisions on procurement influence environmental effort through purchasing green products, and exerting influence on the suppliers. Green purchasing ensures that purchased items possess desirable ecological attributes, such as reusability, recyclability and non toxic materials (Zhu, Sarkis, & Lai, 2007). Green purchasing also address issues such as waste reduction, material substitution through proper sourcing of raw materials and waste minimization of hazardous materials. Supplier involvement is crucial to achieving environmental goals (Rao, 2006).

The objective of supply chain sustainability is to create, protect and grow long-term environmental, social and economic value for all stakeholders involved in bringing products and services to market (Hasan, 2013). On a global scale industrial pollution is the main contributor to the so called: (Green house effect and global warming). The environment and safety are not just social or political issues they are ingredients to performance of organizations. It is reasonable to state that manufacturing industries are major players in environmental issues, but when the issues relate to safety for products, they apply to all supply chain partners, retailers included. Despite the efforts to achieve sustainability they still face challenges as far as embracing the concept of sustainable supply chain in various supermarkets in this region is concerned. The greatest challenge being that there has not been a major support on the part of the government to support this initiative (Kumar, 2013).

## **2. Statement of the Problem**

With increased consumer interest in environmental impacts, green supply chain management is becoming increasingly important for retail chains, consumer product goods and business partners. While the value of integrating environmental thinking into distribution practices is rarely disputed, literature to-date has been sparse in conveying tangible evidence regarding performance and business benefits (Sharma, 2011).

The UN Global corporate sustainability report compact, (2013), revealed that companies are increasingly talking about supply chain sustainability and making solid progress on setting expectations for suppliers, however, they are yet to support expectations with concrete actions that drive sustainability performance in their supply chain. Supermarkets are not an exception; they have been forced to embrace sustainable supply chain practices due to increase in public awareness and stakeholder pressure arising from; investors, shareholders, customers, and non-profit organizations (Wollmuth & Ivanova, 2014).

However, despite these pressures, their attempts to adopt green initiatives have been faced with various challenges. Wasonga (2014) undertook a study focusing on Kenyan supermarkets to ascertain the extent to which they are adopting sustainable supply chain; and the findings revealed that the rate of adoption was to a low extent. This study therefore sought to find out the challenges that supermarkets face in implementation of SSCM.

## **3. Objectives of the Study**

To establish the challenges encountered in implementing sustainable supply chain management in selected supermarkets in Nairobi, Kenya.

The study was guided by the following specific objectives:

1. To determine the influence of organization culture on implementation of sustainable supply chain management among selected supermarkets in Nairobi Central Business District.
2. To establish the influence of stakeholder involvement on implementation of sustainable supply chain management among selected supermarkets in Nairobi Central Business District.
3. To examine the influence of resources allocation on implementation of sustainable supply chain management among selected supermarkets in Nairobi Central Business District.
4. To establish the influence of government regulations on implementation of sustainable supply chain management among selected supermarkets in Nairobi Central Business District.

## **4. Review of Related Literature**

Hervani, Helms and Sarkis (2005), undertook a review on green supply chain management for process industry and concluded that because of changing supply chain requirements to enhance environmental needs, managers need to focus on green approach in order to handle necessary supply chain change. Stewart (2010) studied on the norms of employees' impact upon sustainable performance and management, and the findings showed that attraction of organization norms, values and beliefs have strong effect on organizational performance and environmental

sustainability. Hervani, Helms and Sarkis, (2005), also argued that because of changing supply chain requirements to enhance environmental needs, managers need to focus on green approach in order to handle necessary supply chain change. Barney and Clark (2007) highlight that though resources are rare they should be allocated in a way that do not compromise organization needs to secure sustainable environment.

Zalami (2005) also noted that culture can either enhance or inhibit institutional transformation depending on whether or not the existing culture is aligned with the goals of the proposed change. This is also supported by O'Donnell (2006) in terms of culture facilitating innovative initiatives in the public sector and providing a supportive environment for developing change. Kandula (2006) studied the relationship between organization culture and performance, and established that organizational culture has an active and direct role in organizational performance

Gupta and Palsule-Desai (2011) undertook a study on how various supply chain members influence the extraction, transportation, production and consumption of materials and products. The findings showed that organization and supply chain members are invoked by pressures at both internal and external shareholders to implement sustainable supply chain. They believe that supply chains must pay attention to environmental impact across the entire value chain, including those of suppliers, distributors, partners and customers. Companies have to view sustainability as an integral part of decision-making, rather than a constraint.

Carter and Easton (2011) conducted a research study to find out stakeholder influence on adoption of social and environmental practices across supply chain. The findings revealed that stakeholder exert pressure to companies to adopt sustainable practices. Benito (2006) studied on the role of stakeholder pressure in implementation of environmental practices and established that only non-governmental pressure can explain implementation of environmental practices. In addition Sarkis *et al.*, (2010) proposed a theoretical framework based on the integration of stakeholder theory and revenue based theory to investigate the relationship between stakeholder pressure and adoption of environmental practices. The findings indicated that typically firms need to improve capabilities and adopt strategies of their key stakeholders.

A study by Gatari and Were (2014) on the challenges facing the implementation of green procurement in manufacturing sector in Kenya, a case study of Unga Limited Kenya; established that the cost of green procurement is relatively high and the resources required to implement green procurement are limited in manufacturing sector. They recommended that there is need for allocation of resources necessary for effective implementation of green procurement.

Malaba, Ogolla and Mburu (2014) conducted a study on the influence of green supply chain management strategy on procurement performance of sugar industry in Kenya. The study used a cross sectional survey research design on 11 sugar factories in Kenya consisting of 4 Parastatal Companies and 7 Private Companies. The study established that resources such as professional experience, supply knowledge training, and technical knowledge influenced green supply chain management strategy which further influenced procurement performance.

Government rules and regulation is a major driver for companies' environmental management regulations through increase in threats, penalties and fines for non-compliance among companies (Ram & Narwal, 2013). Helen (2010) argued that government has opportunity of utilizing its procurement spend and power to motivate developments of markets for sustainable products and

services. Belfitt *et al.*, (2011) confirmed that if companies are legally required to purchase sustainable products government will compel them to restructure their supply chain to ensure compliance with regulations.

## 5. Research Methodology

This study was conducted in 5 supermarkets which have been in the retail industry for more than 10 years and have their outlets in Nairobi Central Business District (CBD) area. These supermarkets were; Nakumatt, Tuskys, Uchumi, Naivas and Ukwala. The target population was 92 managers in five supermarkets in the CBD. The study adopted a census approach since the study population was small. Therefore all the 92 respondents, that is, 26 senior managers and 66 middle level managers who included the branch managers/assistant branch managers and departmental heads in the branches.

The study collected primary data through the use of a questionnaire. Pilot test was conducted to check for validity and reliability of the questionnaire. Reliability was calculated using Cronbach's alpha test while validity of the instrument was established by the supervisor who reviewed the items in the questionnaire. The collected data as analyzed through descriptive and inferential statistics. Descriptive statistics were used to describe and summarize the data to enable meaningful description; and they included measures of relative frequencies, measures of central tendency, and measures of variability. Inferential statistics included use of a linear multiple regression to establish the relationship between independent variables the dependent variable. The analysis was aided by Statistical Package for Social Sciences (SPSS) software. The analyzed data was presented using frequency tables, bar graphs and pie charts.

The regression model took the following form:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \epsilon$$

Where, Y = Implementation of SSCM, X<sub>1</sub> = Organization culture, X<sub>2</sub> = Stakeholder involvement, X<sub>3</sub> = Resources, X<sub>4</sub> = Government regulation,  $\beta_0$  = Constant term,  $\epsilon$  = Error term while  $\beta_1$ -  $\beta_4$  = the regression coefficient or change in Y by each  $\chi$

## 6. Results and Discussion

The study found out that management support influenced implementation of sustainable supply chain management (mean score =3.63). However, the respondents indicated that resistance to change by managers (mean scores = 3.07) and employees (mean scores = 2.70) influenced implementation of sustainable supply chain management to a moderate extent. These findings show that organizational culture such as employees' resistance to change and management support and decisions may influence or affect implementation of sustainable supply chain management. These findings are in agreement with those of Zalami (2005) who noted that culture can either enhance or inhibit institutional transformation depending on whether or not the existing culture is aligned with the goals of the proposed change. The findings are also supported by Stewart (2010) study on the norms of employees' impact upon sustainable performance and management, and the

findings showed that attraction of organization norms, values and beliefs have strong effect on organizational performance and environmental sustainability.

It was also found out that suppliers influence implementation of sustainable supply chain management (mean scores = 3.60) and that manufacturers influence implementation of sustainable supply chain management (mean scores = 3.52). The respondents also indicated that customers influence implementation of sustainable supply chain management to a moderate extent (mean scores = 3.45). The results show that stakeholders such as manufacturers, suppliers and customers influence implementation of sustainable supply chain management. The findings are in agreement with those of Gupta and Palsule-Desai (2011) who revealed that organization and supply chain members are invoked by pressures at both internal and external shareholders to implement sustainable supply chain. The findings are also in agreement with Carter and Easton (2011) who revealed that stakeholder exerts pressure to companies to adopt sustainable practices.

The study findings show that financial constraints (mean scores = 3.23) and human resource (mean scores = 3.20) influence implementation of sustainable supply chain management to a moderate extent. Moreover, adequacy of financial resources to enable implementation of sustainable supply chain management (mean scores = 3.09); and technical resources (mean scores = 2.98) were found to influence implementation of sustainable supply chain management to a moderate extent. The above findings show that resources such as financial resources and human resource influence implementation of sustainable supply chain management. The findings are in agreement with those of Malaba *et al.*, (2014) who established that resources such as professional experience, supply knowledge training, and technical knowledge influenced green supply chain management strategy. The need for resource allocation has also been emphasized by Gatari and Were (2014) who recommended that there is need for allocation of resources necessary for effective implementation of sustainable supply chain.

The respondents agreed that government policies influence implementation of sustainable supply chain management; and on inadequacy of government policies on implementation of sustainable supply chain management, and that government has failed to enforce laws and regulations geared towards implementation of sustainable supply chain. This implies that the effect of government regulations on implementation of sustainable supply chain management was not being felt. The findings are in line with those of Gatari and Were (2014) who indicated that poor legal and regulatory framework affected the implementation of green procurement in manufacturing sector in Kenya. They recommended that there is need for improvement of legal and regulatory framework for effective implementation of green procurement. In China, Zhu *et al.*, (2007) showed that government regulations increased their environmental awareness. They concluded that the Chinese government has established a good foundation for further development. This shows that government regulations are key to successful implementation of sustainable supply chain management.

Majority of the respondents (52.2%) reported that the supermarkets had not implemented the reuse and recycling of materials. However, 47.8% of the respondents indicated that the supermarkets had implemented reuse and recycling of materials. The results show that majority of the supermarkets were yet to implement the reuse and recycling of materials. CIPS (2012) revealed that environmental sustainability encompasses eco-friendly products and business processes, issues of pollution, waste management, disposal and recycling, the depletion of non-renewable

resources, the protection of habitats and biodiversity from urbanization and industry, the reduction of carbon-emissions, the risk of natural forces affecting supply.

On the implementation of green packaging, majority of the respondents (56.7%) indicated that their supermarkets had not implemented green packaging. However, 43.3% of the respondents indicated that their supermarkets had implemented green packaging. The study results show that majority of the supermarkets had not implemented green packaging. According to Sarkisa *et al.* (2011), SSCM entails; green procurement decisions, green production processes, green distribution and transportation, reverse logistics, operations and green packaging. The supermarkets should therefore fully implement green packaging in order to ensure successful implementation of sustainable supply chain. Majority of the respondents (70.1%) indicated that their supermarkets implemented waste management practices. Only 29.9% of the respondents revealed that their supermarkets did not implement waste management practices. The fact that supermarkets implemented waste management practices shows that the supermarkets were committed to implementation of sustainable supply chain. According to Sarkisa *et al.* (2011), SSCM address issues such as waste reduction, material substitution through proper sourcing of raw materials and waste minimization of hazardous materials.

**Table 1: Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.855(a)	0.730	0.712	0.808

a Predictors: (Constant), Government regulations, Stakeholder involvement, organization culture, Resource Allocation

R is the correlation coefficient which shows the relationship between the variables. The findings in Table 1 show an R value of 0.855, which implies that there is a high relationship between the variables. The adjusted R square is the co-efficient of determination which explains the variation between the dependent and the independent variable. The study established an adjusted R squared value of 0.712. This implies that organization culture, stakeholder involvement, resource allocation and government regulations explained 71.2% of implementation of sustainable supply chain in supermarkets in Kenya. The remaining 28.8% can be explained by others factors not included in the study.

**Table 2: Analysis of Variance- ANOVA(b)**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	106.227	4	26.557	40.629	.000(a)
	Residual	39.219	60	.654		
	<b>Total</b>	<b>145.446</b>	<b>64</b>			

a Predictors: (Constant), Government regulations, Stakeholder involvement, organization culture, Resource Allocation

b Dependent Variable: Implementation of Sustainable Supply Chain

The ANOVA sought to establish the significance of the model or whether the model can be relied upon to give reliable results. The study established an F- significance value of 0.000 (approximately 0.001). This implies that there is only 0.001 probability of the model giving a wrong prediction. The value of the critical F was 2.53, which is less than the calculated F value of

40.629. This therefore implies that the model is reliable. The regression model has a confidence of above 95% confidence level. The level of significance was therefore at 0.05.

**Table 4.3: Regression Coefficients (a)**

Model		Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.
		B	Std. Error			
1	(Constant)	-2.264	0.765		-2.960	0.004
	Organization culture	-0.688	0.188	-0.306	-3.667	0.001
	Stakeholder involvement	1.179	0.215	0.475	5.477	0.000
	Resource Allocation	1.260	0.185	0.653	6.798	0.000
	Government Regulations	-0.132	0.194	-0.049	-0.680	0.499

a Dependent Variable: Implementation of Sustainable Supply Chain

The regression coefficients in Table 3 show that there is a positive and statistically significant relationship between stakeholder involvement and implementation of sustainable supply chain as shown by  $\beta = 1.179$ ,  $p = 0.000 < 0.05$ . This implies that an increase in stakeholder involvement would significantly increase implementation of sustainable supply chain in the supermarkets. The findings are supported by Gupta and Palsule-Desai (2011) who revealed that organization and supply chain members are invoked by pressures at both internal and external shareholders to implement sustainable supply chain. They believe that supply chains must pay attention to environmental impact across the entire value chain, including those of suppliers, distributors, partners and customers. The regression results also show a positive and significant relationship between implementation of sustainable supply chain and resource allocation by  $\beta = 1.260$ ,  $p = 0.000 < 0.05$ . This implies that a unit increase in resource allocation would significantly increase implementation of sustainable supply chain in the supermarkets. These findings concur with those of Malaba *et al.*, (2014) who established that resources such as professional experience, supply knowledge training, and technical knowledge influenced green supply chain management strategy.

On the other hand, the study found a negative but statistically significant relationship between implementation of sustainable supply chain and organization culture as shown by  $\beta = -0.688$ ,  $p = 0.001 < 0.05$ . The results show that organization culture would inhibit or negate implementation of sustainable supply chain. These findings corroborates with those of Zalami (2005) who noted that culture can either enhance or inhibit institutional transformation depending on whether or not the existing culture is aligned with the goals of the proposed change. Stewart (2010) also revealed that organization norms, values and beliefs have strong effect on organizational performance and environmental sustainability. Also, Gatari and Were (2014) recommended that, the organizations should ensure that there is structural and organizational change to support implementation of green procurement.

However, the study found a negative and insignificant relationship between government regulations and implementation of sustainable supply chain as shown by  $\beta = -0.132$  and  $p = 0.499 > 0.05$ . This relationship may be as a result of inadequate government laws and regulations



geared towards implementation of sustainable supply chain management. These findings concur with those of Gatari and Were (2014) who indicated that poor legal and regulatory framework affected the implementation of green procurement in manufacturing sector in Kenya, and recommended for improvement of legal and regulatory framework for effective implementation of green procurement.

## **7. Conclusions**

The study concludes that organization culture in terms of; management support, resistance to change by managers and employees and management decisions influence implementation of sustainable supply chain management. Therefore, organization culture should be aligned to support sustainable supply chain management practices. The study concludes that stakeholder for instance manufacturers, customers, and suppliers influence the implementation of sustainable supply chain management. Therefore for sustainable supply chain management initiatives to be a success all stakeholders and partners in the entire supply chain should work together rather than individually. customers on the other hand should be informed on the need to purchase eco-friendly products for them to participate fully in sustainability initiative.

The study concludes that financial, human and technical resources are important in the implementation of sustainable supply chain management. Supermarkets should therefore allocate enough resources so that implementation of sustainable supply chain initiative can be a success. The study also concludes that government regulations influence the implementation of sustainable supply chain. Government should therefore enforce laws and regulations geared toward sustainable supply chain, also provide incentives to these supermarkets as a way of encouraging them to implement sustainability practices.

## **8. Recommendations**

The study recommends that the staff of the companies within the supermarkets should undergo professional training, to increase their technical knowledge relevant in Sustainable Supply Chain Management. Staff should be encouraged to embrace a culture of tolerance and readiness to accept changes more so as far as sustainable practices are concerned, since environment should be protected for generations to come.

The study recommends that awareness creation should be given to customers for them to appreciate the need to purchase eco-friendly products. This will encourage manufacturers to come up with green products. It will also motivate suppliers to consider putting sustainable products onto supermarket shelves.

The study recommends that there should be awareness creation among supermarkets in Kenya on how to embrace sustainable supply chain management practices. Government should also, create legally binding policies and framework as a way of enforcing implementation of sustainable supply chain management among supermarkets. The study also recommends that government should give incentives to manufacturers in order to help them produce green products at a lower cost and therefore make them affordable to customers.

## **9. Suggestions for Further Research**

This study sought to establish the challenges encountered in implementing sustainable supply chain management, and it was limited to five supermarkets in Nairobi CBD area. The study recommends that a replica study be conducted, considering a larger population that is representative of all the supermarkets in Nairobi. This would make it possible to generalize the findings. The study only looked at how organization culture, stakeholder involvement, resources allocation and government regulations influence implementation of sustainable supply chain management in supermarkets. A future study should identify more factors (variables) that affect implementation of sustainable supply chain management, other than the ones studied here.

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