



Sustainable Supply Chain Practices And Competitive Advantage In The Horticultural Sector In Kenya

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ABSTRACT

Agriculture being the main economic activity and contributor to the country's GDP, fruits and vegetables takes the bigger percentage of the agricultural productivity. Competitive advantage in this sector is key in enhancing sustainability and performance of the sector. The study therefore seeks to address the influence of sustainable supply chain management on the competitive advantage in the horticultural industry in Kenya. Specifically, the study sought to find out the relationship between green purchasing and competitive advantage in the horticultural industry; establish the relationship between reverse logistics and competitive advantage in the horticultural industry; and analyse the moderating effect of value addition on the relationship between sustainable supply chain and competitive advantage in the horticultural industry. The study adopted several theories to support the specific objectives which are transaction cost economies theory, institutional theory, theory of reasoned action, diffusion innovation theory and stakeholder theory. The study adopted a descriptive research design while the target population was 236 horticultural firms in Nairobi Kenya. A census was used whereby all the 236 firms included in the study. Questionnaire was used to collect the study data while the data was analysed through mixed analysis where both qualitative and quantitative techniques was used. Inferential analysis was used to establish the relationship between variables. The data was presented in form of tables and figures. The study found a positive relationship between green purchasing and competitive advantage in the horticultural industry in Kenya. Also, further reverse logistics had a positive influence on competitive advantage in the Horticultural Industry in Kenya. The study recommends that the management of the horticultural companies should improve on their green purchasing practices. This can be done by applying flexible sustainable supply chain practices through research so as to understand the changing environmental needs and remain relevant in the market. The study also recommends that the companies should ensure that their reverse logistics are properly structured. This would ensure that customer needs are met, ensuring customer loyalty and making it difficult for competitors to imitate simple services that are geared towards value creation and the environment.

Keywords: Competitive Advantage, Green Purchasing, Horticultural Industry, Green Distribution, Sustainable supply chain, Value Addition

INTRODUCTION

In the wake of 21st century, businesses are faced with a wide range of dynamics most of which have threatened their continued performance and sustainability. From changes in technology, increased competition, globalization, to increased awareness and cultural diversity, modern businesses ought to be more diverse and properly managed for them to steer performance and competitiveness. One of the major processes in a modern firm that requires proper attention for enhanced performance and effectiveness is the supply chain. Sustainable supply chain has been emphasized across the globe as one of the major aspects of saving the World from the continued global warming and environmental unfriendly activities.

Every aspect of the society is continually encouraged to make any contribution that reduces environmental pollution and promotes the welfare of the society now and in future. This outlines the role played by the green production network the board in advancing the general World ecological objectives. Practical production network has been broadly characterized as the administration of material, data and capital streams as well as participation among organizations along the inventory network while taking into account objectives from every one of the three elements of maintainable advancement, i.e., monetary, natural and social into record which are gotten from client and partner prerequisites. In practical supply chains, natural and social criteria should be satisfied by the individuals inside the inventory network, while it is normal that intensity would be kept up through gathering client needs and related financial criteria

Globally, external pressure and incentives set by governments, customers, investors and stakeholders are regarded as the starting points for sustainable supply chain management (Maignan, Hillebrand, & McAlister, 2012). This creates demands for definition of life cycle-based standards for the environmental and social

performance of products to be implemented throughout the supply chain. Internal as well as external capabilities have to be developed. Lintukangas, Hallikas and Kähkönen (2013) conclude that sustainable supply chain management has to take into account a wider range of issues and therefore look at a longer part of the supply chain. The implication of this is an increased need for cooperation among partnering companies in sustainable supply chain management. But according to findings in Lemmet (2012) review, the integration is currently limited. To become sustainable enterprises Carter and Roger (2008) say the organizations need to change their company cultures and mind-sets; sustainability must be a part of an integrated strategy and deeply incorporated in the organizational culture. Companies with such an approach are called visionary and seem according to Carter and Rogers as likely to be rated among 100 best companies of the Dow Jones Sustainability Indexes.

Regionally, both the social and ecological points of view of SSCM must rely upon the aware of monetary objectives of the associations. Specifically, Carter and Rogers (2008) have clarified that the expression “Great” in the SSCM structure which implies that the convergence of social and natural however overlooks the financial point of view of the triple primary concern. In addition, they likewise proposed that it is not important to compel associations to embrace social and ecological objectives identifying with the inventory network. Indeed, Porter and Kramer (2002) guaranteed that actualizing SSCM ought to consider inside the more extensive setting of an association's vital and money related goal to accomplish the social dependable objective.

Locally, sustainable supply chain has not be so much emphasized but most of the leading companies in the country have focused on enhancing sustainable supply chain by focusing on the key measures to enhance their contribution in the environmental development such as reverse logistics and supplier management (Nasiche&Ngugi, 2014). Mwengi (2016) stated that focusing on reasonable store network in creating nations and especially in Kenya has been constrained by different viewpoints. Developing ecological concerns, for example, an unnatural weather change, and social issues, for example, human rights and wellbeing, have constrained numerous organizations to incorporate a more extensive scope of targets as opposed to simply monetary related objectives (Gupta & Palsule-Desai, 2011).

Moreover, the weight from partners, including clients, governments, non-administrative associations, open experts and worker's organizations have constrained organizations to oversee progressively maintainable supply chains (Kipkorir & Wanyoike, 2015). Besides, the presentation of different natural enactment (for example carbon charge) just as measures (for example ISO 14000 arrangement or Social Accountability 8000) and announcing systems should power organizations at the chain level to move past the single economic objective and incorporate a multi-objective approach in order to balance every one of the three components of manageability. Adjusting various destinations could frequently be clashing because of exchange offs between the three elements of supportability (Laboso, 2013). Considering the provider determination, for example, providers might be founded on various monetary, social-and ecological related execution markers.

The aforementioned point highlights that sustainability issues could significantly impact decisions at the supply chain level. While some social or environmental initiatives may provide financial benefits (e.g. managing energy usage efficiently), there are other factors that could undermine the financial performance directly or indirectly (Machogu, 2014). Despite this fact, the implications of social and environmental aspects in decision-making are now more essential than before. That is why many senior managers state that sustainability issues will be critical for their businesses' future success, as mentioned in the report published by the United Nations Global Compact and Business for Social Responsibility (2010).

Competitive advantage is the extent to which an organization can create a better position than its competitors (Porter, 1985; Schwab, 2014). To maximize the competitive advantage all members of the supply chain must continually work together to serve the end consumer (Ogrean & Herciu, 2010). Porter (1985) suggests that the way a company associates with other companies in its value chain can affect competitive advantage, especially when external assets are created distinct from other value chains. Aiginger (2016) contend that strategic options for sustainability may be the decisive factor that would allow companies to create the unique competitive advantage over product images and sales, market share and new market.

Reducing the product development cycle time and hence the time to introduce a new product can create a comparative advantage in terms of market share, profitability and long-term competitive advantage (Mbekeani, 2017). Over the past decade, resource-based researchers have identified a number of dynamic capabilities that create value, including the ability to innovate. Innovation speed is particularly important in environments characterized by intense competition (Utkulu & Dilek, 2014). Saboniene (2019) describes a framework for competing and identifying five elements: competitive pricing, high-end pricing, quality customer value, reliable delivery, and changeability of new production.

In a global perspective, the concept of competitive advantage has been discussed intensively in business strategy. Many scholars have defined the concept of competitive advantage, such as Dong, Xu, and Zhu (2015) stated that competitive advantage is the capacity of an organization to create and maintenance defensible position over its competitors. Riaz and Jansen (2012) also suggested that competitive advantage is obtained by the firm when its actions in an industry or market are able to create economic value and few competing firms are engaging in similar actions. Furthermore, Salam (2017) argues that competitive advantage comprises of

distinctive competencies that sets an organization apart from competitors, thus giving them an edge in the marketplace (Rifin, 2010).

In Africa, competitive advantage has mainly involved the particular choice regarding the market in which a firm would compete, depending on market share in clearly defined segment using price and product performance attribute (Mahmood, 2014). Igwebe (2016) contemplated that for firms in Nigeria to sustain their operations, they adopted the competitive advantage formulae whereby they establish the products that are well embraced in the market and major in such products while applying strategies such as cost saving as a way of making the products stand those of their peers.

In Malawi, Kanabiel (2013) suggested that for modern business to stand the over-increasing competitive pressure, they ought to focus on how good they were in standing against those in the similar market and with similar or equal capacity. Through this, the firms are able to build a stringer muscle as far as their operations and diverse strategies are concerned thus gaining competitive advantage.

Locally, competitive advantage has also been given its portion of attention among researchers and scholars although not as much as other aspects of organizational development such as performance, growth and sustainability (Mweria, 2015). However, the few studies carried out locally have proved competitive advantage to be a major aspect to determine the effectiveness, efficiency and future success of an organization. Onyango (2017) elucidated that competitive advantage explained how well a company was ready to block new entrants strategically and stand a chance to command a given market thus ensuring sustainability. Maruhe (2014) on the other hand contended that competitive advantage was the reason why most multinationals thrived in Kenya and that the companies steered their success through ensuring that all the aspects of competitive advantage such as cost leadership, differentiation, differentiation and other related strategies were upheld. While assessing the impact of supply chain on firm competitive advantage, Abdirahim (2013) established that market share, market penetration, flow of products and customer flow best explained the competitive advantage of a firm. These measures will also be adopted in the study at hand.

The horticulture industry in Kenya plays an important role in food security, employment creation, and poverty alleviation (Agricultural Sector Coordination Unit [ASCU], 2011). The sector contributes enormously to food security and household incomes to a majority of Kenyan producers who carry out one form of horticultural production or another and employs over six million Kenyans both directly and indirectly thus improving on their livelihoods (Ministry of agriculture, 2010a). However, the potential for horticultural production in the Arid and Semi-Arid Lands (ASALs) of Kenya has not been fully utilized to be of help to the communities living in those regions (Ministry of Agriculture, 2010b). This is because farming in Kenya is mainly rain fed and the arid and semi-arid regions lack sufficient rainfall to support sustainable rain fed farming (Ministry of Agriculture, 2010b).

Statement of the Problem

The Government of Kenya's Medium-Term Plan Three (2018-2022) underscores the pivotal role of the horticultural subsector comprising of cut flowers, vegetables, nuts and herbs to Kenya's export drive, economic growth and development at large (GOK,2018). According to Wainainah (2015), Kenya ranks as the largest horticulture exporter in Sub-Saharan African with a 16% EU market share. The subsector contributes enormously to food security and household income (Research Solutions Africa, 2015)

Kenya's Vision 2030 lists limited value addition coupled with high production costs among other factors as making Kenyan agricultural exports less competitive in the global market (GOK, 2017). The competitive advantage of the horticultural subsector which is the fastest growing in the Kenyan agricultural sector(Kenya Horticulture council- KHC, 2017) is affected by factors such as stringent production standards and trade regimes ,climate change and variable weather, sluggish recovery in Europe, internal structural and institutional issues such as inefficiencies in supply chain (AFA, 2017). The introduction of tax by the EU in 2014 resulted in decline in quantity and earnings for vegetable exports compared to the 2013. Similarly, the competitive advantage of the sector was affected by government delay in signing the Economic Partnership Agreement (EPA) owing to disagreements between the government and EU over trade terms (Sparks, 2016). From the year 2008, Kenya's global market share fell from 1.28% in 2008 to 1.03% in 2017 according to a global competitiveness study commissioned by USAID. Moreover, the growth in agriculture value added declined from 5.5% in 2015 to 4.0% in 2016 and further declined to 1.6% in 2017 with underdeveloped value chains cited as a major challenge in the horticultural subsector (GOK, 2018).

Developed economies have seen their produce perform better in the market through proactive measures such as value addition whereby the produce is reproduced into more usable products thus making more returns and being more competitive in the market (Kaplinsky, 2010). Studies have revealed that through aspects of competitive advantage such as cost leadership and differentiation, products such as agricultural produce and minerals in countries such as China and Israel have been able to capture and penetrate the global market (Yeng, 2012; &Merillies, 2014). On the other hand, sustainable supply chain has been considered a key aspect in promoting competitive advantage through a well embraced way of differentiating organizational products from those of the competitors (ILO, 2013; VIETRADE, 2014). However, very little has been done to link sustainable

supply chain and competitive advantage in the horticultural industry which has been facing shrinking competitiveness in the global market over the recent past. This study seeks to fill the existing gaps by unveiling the influence of sustainable supply chains on competitive advantage of the horticultural sector in Kenya.

Objectives of the Study

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The main objective of this study was to establish the influence of sustainable supply chain management on competitive advantage in the horticultural industry in Kenya.

The following were the specific objectives for the study.

1. To find out the relationship between green purchasing and competitive advantage in the Horticultural Industry in Kenya
2. To establish the relationship between reverse logistics and competitive advantage in the Horticultural Industry in Kenya
3. To analyse the moderating effect of value addition on the relationship between sustainable supply chain and competitive advantage in the Horticultural Industry in Kenya

Research Hypotheses

The study was guided by the following alternative hypotheses.

H_{A1}: There is a significant positive relationship between green purchasing and competitive advantage in the Horticultural Industry in Kenya

H_{A2}: Reverse Logistics have a significant positive influence on competitive advantage in the Horticultural Industry in Kenya

H_{A3}: Value addition has a significant positive moderating effect on the relationship between sustainable supply chain and competitive advantage of the Horticultural Industry in Kenya

Justification of the Study

The farmers in the horticultural industry will benefit from the study findings in that they will identify the best ways to enhance value addition in their produce through which they increase their returns. The study will point out the aspects of sustainable supply chain that can be adopted to enhance the value addition thus the farmers can adopt these strategies to enhance the quality of their produce.

Most of the horticultural produce in Kenya is exported to international markets such as UK and Canada. Through the research findings, the exporters and middle men who sell the produce to those markets will benefit from the findings in that they will identify the measures they may take into consideration so as to enhance the value of the produce thus making them more competitive in the market. The management of the firms involved in exportation will reap from the study findings through which they will find the best sustainable supply chain aspects to focus on so as to influence the competitive advantage and performance of the produce.

The findings will be significant to the government and policy makers in the agricultural, trade and exportation sectors. This is because they will identify the need for sustainable supply chain and how to make it effective in the horticultural industry. Recently, the government through the ministry of environment introduced a policy to ban the plastic bags and related substances. The findings will therefore enable them (policy makers) to find better criteria to have this policy adhered to especially in the horticultural sector.

Theoretical Review

Transaction Cost Economics Theory

Transaction cost economics focuses on minimizing the total transaction costs of producing and distributing a particular good or service. It specifies the conditions under which a firm should manage an economic exchange internally within its boundary or externally through inter organizational arrangement (Lau & Wang 2009). This theory centres on the association of exchanges that happen at whatever point a decent or administration is exchanged from a supplier to a client over a mechanically distinct interface. At the point when exchanges happen inside an association, the exchange expenses can incorporate overseeing, observing faculty, getting data sources and capital hardware. The exchange expenses of purchasing a similar decent or administration from an outer supplier can incorporate the expenses of source choice, contract the executives, execution estimation, and question goals. In the context of this study, this theory can be interfaced with green purchasing and green distribution since through embracing green products and green distribution practices, firms tend to contain production costs hence improving the firm's performance.

Theory of Reasoned Action (TRA)

The TRA model, developed by Ajzen & Fishbein (1980), is a conviction frame of mind social goal model, which proposes that a person's impression of what others consider significant is influenced by their goal and that disposition assumes a noteworthy job in foreseeing conduct (Netemeyer et al., 1993). In this investigation, green obtaining is identified with a company's expectation to purchase an item that is less harmful to the earth and the general public on the loose. Vazifehdosta (2013) confirmed that customer's goal to purchase green items is incredibly impacted by uplifting disposition and the apparent green estimation of the items. An examination by Rizwan et al., (2013) additionally discovered that purchaser's disposition impacts his or her green item buy goal.

The hypothesis has been exposed to reactions by a few creators, the most significant analysis is that the hypothesis of contemplated activity isn't falsifiable since a hypothesis must be falsifiable to be a decent hypothesis, henceforth if the hypothesis of contemplated activity isn't falsifiable, then it is not a good theory regardless of how many researchers believe it to be useful. The theory is useful in the study of reverse logistics as it explains a firm's deliberate decision to engage in activities that promote the environmental and social wellbeing of the society.

Conceptual Framework

A conceptual framework is a written visual presentation that explains either graphically or by narration, the main things to be studied; among them are the key factors, concepts or variables and presumed relationships among them. It provides a coherent, unified and orderly way of seeing related events or processes relevant to a study/research. Conceptual framework serves as springboard for theory development and shows the relationships of the stated hypothesis with central factors or key concepts. Creswell (2013) defined Conceptual framework as a concise description of the phenomena under study accompanied by a graphical or visual depiction of the major variables of the study.

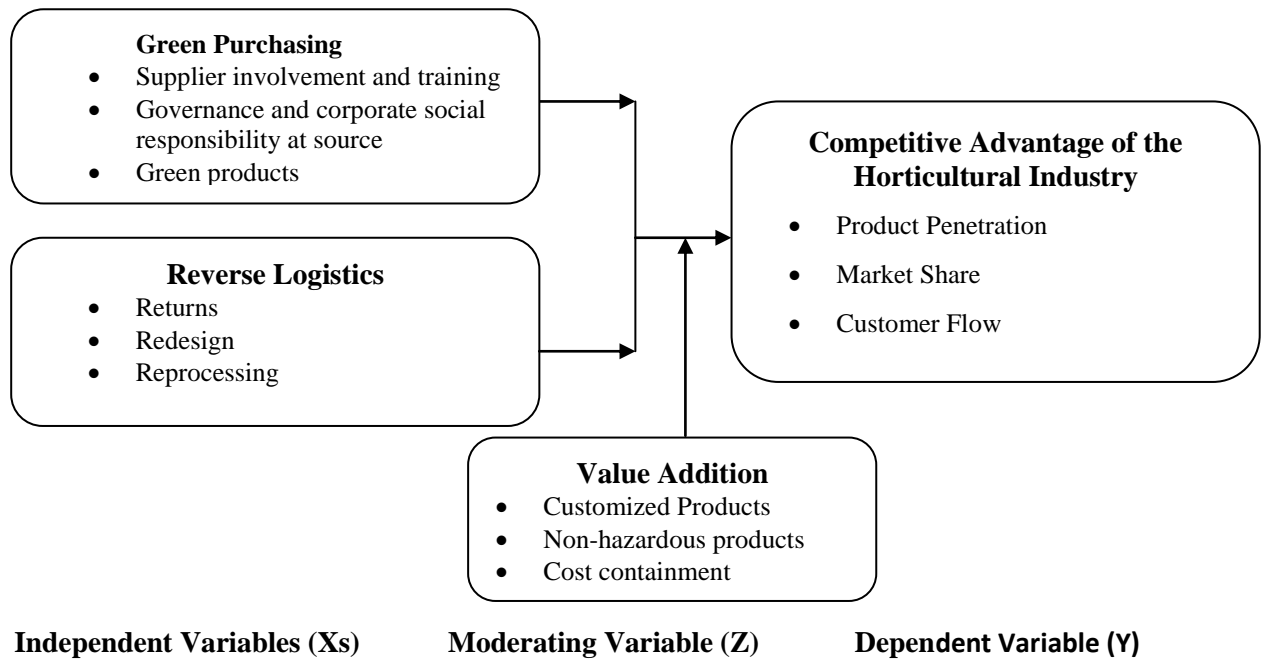


Figure 1: Conceptual Framework

Green Purchasing

Purchasing is one of the key strategic business processes used by many companies to perform series of activities (Wu, 2008; Olaore & Adebisi, 2013). Purchasing function plays a vital role in choosing the right product as purchased raw materials, components, parts and supplies can signify more than 50 percent of sales dollar (Wisner *et al.*, 2012; Olaore & Adebisi, 2013). Therefore, selecting the right suppliers is one of the important tasks of purchasing which directly reduces purchasing risk and maximises overall value to the buyer organisation (Rajan *et al.*, 2010). Additionally, purchasing can be served as a crucial link between the sources of supply and the organisational itself. As competitive pressures become more acute, buyer organisations are increasingly demanding their suppliers to fulfil stringent requirements in terms of quality, quantity, cost, product mix and delivery efficiency (Hasan *et al.*, 2008) in order to gain a competitive advantage. Consequently, this demand has increased the strategic role of purchasing in today business setting.

Reverse Logistics

Reverse logistics as a supply chain concept emerged alongside other green supply chain management practices in an attempt to enhance sustainability in organizational operations (Green *et al.*, 2012). Since its emergence, scholars have conducted studies to relate reverse logistics with various components of supply chain management like supply chain performance and supply chain efficiency (Muma *et al.*, 2014). Studies have also related reverse logistics with aspects of organizational performance such as environmental performance, social performance and economic performance.

Value Addition

Value addition is any additional activity that in one way or the other changes the nature of a product thus adding to its value at the time of sale (Miles & Snow, 2013). Value adding is the process of changing or transforming a product from its original state to a more valuable state (Boland, 2009). Value addition can therefore be said to be a process of enhancing a product to gain more from it. In agriculture the role of value addition is to maximize production and economic value of a produce. It is production process phase that involves enhancing product quality for the consumer and hence brings about higher net value. According to Lambert *et al.* (2006), value addition is the variation between value of goods and services produced and the input costs used in their provision. In this context, value addition is the seafood processing industry's gross receipts (income) minus expenditure for goods and services in the production process, but this should not be mistaken for profits (Lambert *et al.*, 2006).

Competitive Advantage

A firm competitive advantage has widely been recognized as the ability of a firm to stand a chance to command a given section of the market more than its competitors with the same products and a similar operating ground. It is that which sets an organization apart, that is, its distinct edge. That distinct edge comes from the organization's core competencies, which might be in the form organizational capabilities-the organization does something that others cannot do or does it better than others can do it (Barney and Clark, 2007). According to De Wit and Meyer (2010), a firm has a competitive advantage when it has the means to edge out and outsmart rivals when contesting for the favour and following of customers. Schermerhorn, Davidson, Poole, Woods, Simon, and McBarron (2014) postulate that a competitive advantage comes from operating in successful ways that are difficult to imitate.

RESEARCH METHODOLOGY

The study applied a descriptive research design. Descriptive research design entails explanation of a phenomenon, estimating a proportion of a population with similar characteristics and ascertaining the relationship that occurs amid the variables under study (Myers, 2013). The study used positivism paradigm as the research philosophy. The paradigm uses a quantitative approach which involves data collection and the analysis of numerical data (Veal, 2005).

The target population for the study comprised of the horticultural companies in Kenya. There are approximately 289 horticultural firms in Kenya where 236 of them have their offices or representatives in Nairobi. These companies are involved in farming, purchasing and exportation of horticultural products. The study focused on the companies that are in Nairobi County since majority of the firms are located here thus it can be a good representative of Kenya as a country.

The sampling frame in the study will comprise of the heads of the supply chain section in the 236 horticultural companies in Nairobi County. Given the heterogeneity nature of the population, census was used whereby all the 236 horticultural companies were selected as the sample size. Afterwards, purposive sampling will be used whereby only the supply chain managers or their representatives were picked from every company.

Both primary and secondary data was used in obtaining the needed data and information. During the data collection, both qualitative and quantitative data was required, which justifies the need to have primary data. Primary data was collected from the supply chain managers or their representatives. Primary research was done using a self-structured questionnaire. Secondary data was collected from existing literature on the study area.

Cronbach's coefficient alpha which determines the internal consistency or the average correlation of items within the test was used after collection of data to test the findings. Alpha values range from zero- no internal consistency to one -complete internal consistency. Flick (2014) posits that reliability of over 0.70 is considered acceptable. There are three genres of validity, namely, face, content and construct validities (Rudestam & Newton, 2015). Face validity was estimated by use of correlations between the objective and subjective items utilized in the scales. Content validity was assessed through review and verification of the extant literature for the items contained in the questionnaire. Finally, construct validity was assessed from the correlations of items. Positive and significant correlations are expected for convergent validity while for divergent validity, items were expected to positively and significantly correlate with one another, but not with items from other dimensions (O'Leary, 2014).

The study used both descriptive and inferential statistics to analyse data. Descriptive statistics such as frequency distribution and measures of central tendency was used to analyse the demographic data. These tests were performed in addition to tests of skewness and kurtosis on the data for normality. Testing of the hypothesis was done by calculating an F-Value using a two-way ANOVA. Determination of the location of the differences between all mean pairs will be done using Scheffe's posterior contrast test, which is readily applicability to groups of unequal sizes. It is also relatively insensitive to departures in normality and homogeneity of variances. Correlational analysis and independent-samples z-tests were performed to determine relationships and compare the mean scores. Correlational analysis establishes whether or not a relationship exists between two variables.

Multiple regression analyses were conducted to test the hypotheses. In adopting the 95% confidence interval, the hypotheses were considered significant if the p-value is below 0.05. Multiple regression analysis allows for the examination of relationships between several independent variables and one dependent variable. The two-directional analysis of variance (ANOVA) is another regression technique that was used. The ANOVA allowed the researcher to compare between groups with two or more levels. Thus, ANOVA was used to answer the entire question.

In order to establish the combined influence of the independent variables on the dependent variable, a multiple linear model was used. Therefore, the model for this study was consolidated as:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \epsilon$$

The models were derived from the independent variables and dependent variable and how they interact with the moderating variable.

$$Y = \alpha + \beta_0 + \beta_1 X_1 + \beta_1 Z + \beta_2 X_1 Z + \epsilon$$

$$Y = \alpha + \beta_0 + \beta_2 X_2 + \beta_2 Z + \beta_3 X_2 Z + \epsilon$$

Where:

A_B is the competitive advantage in horticultural sector

X_1 is the Green purchasing

X_2 is the Reverse logistics

Z is the moderating Variable (Value addition)

E is an error term

α is a constant term

β_1, β_2, \dots are coefficients for the variables.

RESEARCH FINDINGS AND DISCUSSION

The sample size of the study comprised of 236 heads of the supply chain section in horticultural firms in Kenya. The research assistants dropped the questionnaires and agreed with the heads of the supply chain section when to return and pick them. Out of 236 questionnaires which were distributed, 221 were duly filled and returned. The drop-off and pick-up-later method yielded the high response rate of 93.6%.

A pilot survey of 24 respondents comprising of 10% of the sample size was carried out to test the reliability and validity of the research instrument intended to be used in the research study. According to Kothari (2012) Cronbach's Alpha coefficient of 0.7 and above, is within accepted rule of thumb thus depicts good reliability. From the findings, the construct of green purchasing had an average Cronbach's reliability alpha of 0.762, reverse logistic had a Cronbach's reliability alpha of 0.783 and competitive advantage had a Cronbach's reliability alpha of 0.825. This shows that the questionnaire met the reliability criteria ($\alpha > 0.7$).

Table 1: Reliability Test Results

Variable	Cronbach's Alpha	Number of items	Interpretation
Green Purchasing	0.762	6	Reliable
Reverse logistics	0.783	7	Reliable
Competitive advantage	0.825	10	Reliable

Descriptive Statistics

In this section, the study presents findings mainly on Likert scale questions for each study variable. The heads of supply chain section in the horticultural industry were asked to give the level of agreement in regard to various statements relating to the study objectives. The question was on a 5-point likert scale. To measure the indicators of independent variables, a five-point Likert scale was used. Where 1 was strongly disagree, 2 was disagree, 3 was moderate, 4 was agree and 5 was strongly Agree.

Green Purchasing

The head of supply chain section were asked to indicate their level of agreement with the following statement relating to the influence of green purchasing on competitive advantage in the Horticultural Industry in Kenya. Table 2 presents the findings obtained.

Table 2: Influence of Green Purchasing and Competitive Advantage

Statement	1 %	2 %	3 %	4 %	5 %	Mean	Std. Dev
Our firm cooperates with suppliers for eco-design of inputs.	2.7	2.1	2.7	79.7	12.8	3.982	1.370
Our firm purchases environmentally friendly materials.	4.8	4.8	7.5	74.9	8.0	3.777	1.275
Our firm conducts environmental audits for supplier's internal management.	2.7	2.7	5.9	80.7	8.0	3.889	1.381
Our firm conducts governance and corporate social responsibility seminars.	2.7	4.8	2.7	78.6	11.2	3.915	1.343
Our firm has reduced purchase of items that are difficult to dispose of.	2.1	5.3	14.4	77.5	0.5	3.698	1.331
Our firm has reduced the purchase of hazardous materials	2.7	2.7	5.9	74.9	13.9	3.948	1.263

From the study findings shown in Table 2, the study revealed that majority of the respondents agreed that their firm cooperates with suppliers for eco-design of inputs as shown by mean of 3.982 and standard deviation of 1.370. Their firms have reduced the purchase of hazardous materials as shown by mean of 3.948 and standard deviation of 1.263. Their firm conducts governance and corporate social responsibility seminars as shown by mean of 3.915 and standard deviation of 3.915. Respondent further agreed that their firm conducts environmental audits for supplier’s internal management as shown by mean of 3.889 and standard deviation of 1.381. their firm purchases environmentally friendly materials as shown by mean of 3.777 and standard deviation of 1.275 and their firm has reduced purchase of items that are difficult to dispose of as shown by mean of 3.698 and standard deviation of 1.331. The study revealed that horticultural firms has promoted green purchasing in the supply chain processes through asking potential suppliers to provide the organization with the most environmentally sound product, with the highest quality, at the lowest price, requestion supplier for the most energy-efficient product at the same or lower price than a traditional alternative, developing a code of conduct that includes green, spelling out the expected behaviors in terms of labor, products, emissions and handling of waste, educating the supplier on the importance of going green , sponsoring training programs for supplier and explaining to them exactly what the company is looking for in supplier , keeping tabs on suppliers, either by encouraging them to audit mechanisms and practicing what our organization teach. The findings concur with Pak (2013) who found that green purchasing was a major aspect in green supply chain that ensured the best products were acquired thus promoting value addition. Pak (2013) contemplated that through purchase of goods that are environmentally friendly and involving the suppliers in producing such goods, there is high capability of the firm to record increased supply chain performance and at the same time increase the value of the products. Min and HGalle (2011) established that involving suppliers was one of the major practices of promoting green purchasing through which sustainable supply chain was obtained.

Reverse Logistics

This section sought to determine the head of supply chain section level of agreement with statement relating to the relationship between reverse logistics and competitive advantage in the horticultural industry in Kenya. Table 3 presents the findings obtained.

Table 3: Influence of reverse logistics on competitive advantage

Statement	1	2	3	4	5	Mean	Std. Dev
	%	%	%	%	%		
Our firm has a supply chain framework provides for product Returns.	1.1	2.7	2.7	85.6	8.0	3.961	1.476
We have embraced a mainstream to allow our stakeholders to return goods that do not their standard or need to be remanufactured	2.7	4.8	1.1	87.2	4.3	3.856	1.525
The organization has enhanced systems for screening of defective and unwarranted returned merchandise	3.7	2.1	5.9	83.4	4.8	3.830	1.441
We are realizing cost savings because of our reverse logistics activities	2.1	1.1	2.1	88.8	5.9	3.955	1.546
Our organization has a well-organized channel for reverse logistics	3.2	3.2	5.3	82.9	5.3	3.836	1.426
The company has laid out proper measures to ensure reprocessing and rebranding of returned goods	2.1	2.1	3.7	78.6	13.4	3.994	1.343
Redesigning defective merchandise has been emphasised in our firm to meet customer demands and avoid wastage	1.1	1.1	3.2	86.1	8.6	3.988	1.475

From the findings in Table 3, the respondents were in agreement that redesigning defective merchandise has been emphasised in our firm to meet customer demands and avoid wastage as shown by mean of 3.988 and standard deviation of 1.475, their firm has a supply chain framework provides for product returns as shown by mean of 3.961 and standard deviation of 1.476, they are realizing cost savings because of our reverse logistics activities as shown by mean of 3.955 and standard deviation of 1.546, the company has laid out proper measures to ensure reprocessing and rebranding of returned goods as shown by mean of 3.994 and standard deviation of 1.343, they have embraced a mainstream to allow our stakeholders to return goods that do not their standard or need to be remanufactured as shown by mean of 3.856 and standard deviation of 1.525, their organization has a well-organized channel for reverse logistics as shown by mean of 3.836 and standard deviation of 1.426 and their organization has enhanced systems for screening of defective and unwarranted returned merchandise as

shown by mean of 3.830 and standard deviation of 1.441. The study established that additional measures taken by the firm can take to enhance reverse logistics in the procurement processes were knowing why returns happen in the first place, having a transparent monitoring systems in place, tracking all aspects of reverse logistic, collaboration with retailer and wholesalers, rethinking transport and logistics, having clearly established return plan, investing in the right technology for reverse logistics and having a return labels to the original packaging.

The findings concur with Badenhorst (2013) who established that reverse logistics was key in promoting value addition through which goods that needed to be reprocessed to enhance quality as well as enhance proper disposal were effectively taken back to the supplier. Further, promoting reverse logistics played a significant role in achieving the green supply chain management but still required cost saving measures due to the processes and costs involved in returning the commodities to the supplier. Jayant, Gupta and Garg (2012) found that as a way of promoting the effectiveness of procurement process and meeting the customer needs, reverse logistics was necessary through which the customers could return their goods if not meeting the standards or in the right description.

Value Addition

Respondents indicated their level of agreement with statement relating to moderating effect of value addition on the relationship between sustainable supply chain and competitive advantage in the Horticultural Industry in Kenya. Table 4 presents the findings obtained.

Table 4: Value addition in the Horticultural Industry

Statement	1	2	3	4	5	Mean	Std. Dev
	%	%	%	%	%		
Our company has ensured access and availability of customized products across all our supply chains	6.5	3.2	9.6	70.1	10.2	3.738	1.168
The company is committed towards having non-hazardous products across all its product lines in the market	4.8	1.1	4.8	69.5	19.8	3.988	1.182
Since the company started focusing on sustainable supply chain management the operational costs have been contained to some percentage	3.2	3.2	6.4	73.8	13.4	3.902	1.235
The company has increased its internal efficiency as a result of focusing on sustainable supply chain management	4.8	1.1	9.6	72.7	11.2	3.850	1.220
Value addition in the products by our company has contributed to the company's performance	3.2	4.8	1.1	79.7	11.2	3.909	1.359

From the finding presented in Table 4, the study found that majority of the respondents agreed that their company is committed towards having non-hazardous products across all its product lines in the market as shown by mean of 3.988 and standard deviation of 1.182, value addition in the products by our company has contributed to the company's performance as shown by mean of 3.909 and standard deviation of 1.359, since the company started focusing on sustainable supply chain management the operational costs have been contained to some percentage as shown by mean of 3.902 and standard deviation of 1.235, the company has increased its internal efficiency as a result of focusing on sustainable supply chain management as shown by mean of 3.850 and standard deviation of 1.220 and their company has ensured access and availability of customized products across all our supply chains as shown by mean of 3.738 and standard deviation of 1.168. The study revealed that horticultural firms enhance value addition to achieve its competitiveness and enhance performance, through creation superior products than competitors, having environmentally friendly products that are of higher quality , creating customized products for different market segments and having unique products that are hard to imitate in the market. The findings concur with Karantininis *et al.* (2008) concluded that organization, stage in the value chain and market power are important to innovation, and that Wholesalers and retailers tend to have a larger number of new products (Model I), whereas manufacturing firms tend to invest more in research and development. Mapiye *et al.* (2007) indicated that increased value addition can be achieved by provision of appropriate incentives for the establishment of agro processing industries in the rural areas and promotion of partnerships between communal farmers and agribusiness.

Competitive Advantage

In this section the study sought to determine from the head of supply chain section the competitive position of their horticultural firms. The study findings are present in Figure 4.5.

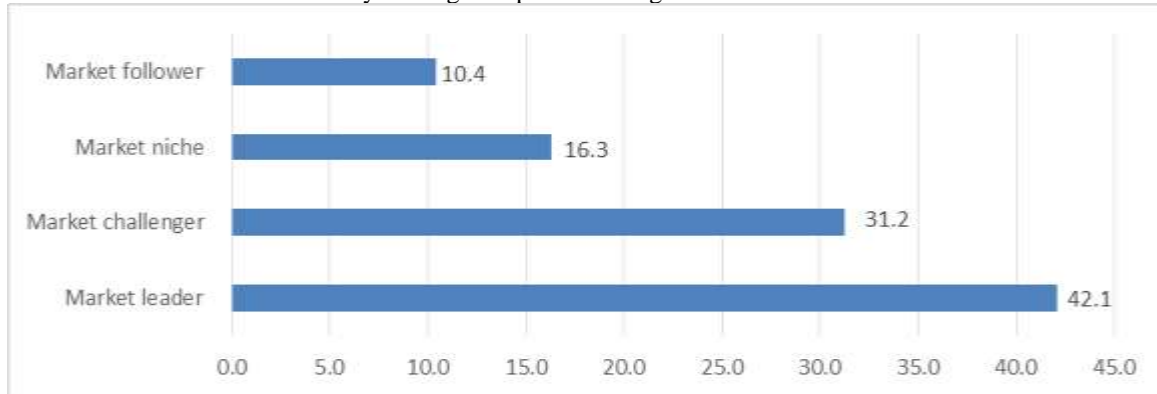


Figure 2: Competitive Position of Organization in Relation To Other Players

From the finding shown in Figure 2, the study found that most of head of supply chain section in horticulture firms in Kenya considered their organization as market leader as shown by 42.1%, 31.2% considered their organization as market challenger, 16.3% considered their organization as market niche and 10.4% considered their organization as market followers. This is an indication that most of the horticultural firms in Kenya were market challenger and market followers. From the findings the study revealed that major source of competitive advantage for horticultural firms was quality of the products, adherence to environmental laws in their operations, market segmentation through products for each market, packaging products that differentiate us from the competitors, having collaboration with suppliers who observe environmental laws and involvement in environmental corporate social responsibility activities. The findings concurs with Liao, Hu, and Ding (2017) who revealed that competitive advantage was to a great extent determined by the innovativeness of an organization. Subba (2016) established that through proper measures of supply chain management and ensuring that it was effectively done, the competitive advantage of the crop production companies was achieved.

Inferential Results

The study computed inferential statistics to test the relationship between the independent and dependent variables. The study specifically computed person product moment correlation analysis and multiple regression analysis.

Correlation Results

Correlational analysis was used to determine the strength of the relationship between the study variables. Pearson R correlation was used to measure strength and the direction of linear relationship between the independent variables and dependent variable. The association was considered to be small if $\pm 0.1 < r < \pm 0.29$; medium if $\pm 0.3 < r < \pm 0.49$; and strong if $r > \pm 0.5$.

Table 5: Correlation Matrix

Variables		Competitive Advantage	Green Purchasing	Reverse Logistics
Competitive Advantage	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	221		
Green Purchasing	Pearson Correlation	.839**	1	
	Sig. (2-tailed)	.000		
	N	221	221	
Reverse Logistics	Pearson Correlation	.724**	.142	1
	Sig. (2-tailed)	.000	.058	
	N	221	221	221

From the findings in Table 5, green purchasing is seen to have a strong positive relationship with competitive advantage in the Horticultural Industry in Kenya ($r = 0.839$). The relationship between the green purchasing and competitive advantage was found to be significant ($p=0.000 < 0.05$). This means that green purchasing among horticultural firms would influence their level of competitive advantage. The findings also show that reverse logistics and competitive advantage in the Horticultural Industry in Kenya are strongly related ($r = 0.724$). The findings further show that the relationship between reverse logistics and competitive advantage is significant ($p=0.000 < 0.05$). This means that the level of reserve logistics among horticultural firm influence their level of competitive advantage.

Model Summary

Model summary was used to determine the amount of variation in the dependent variable that could be explained by changes in the independent variable. In this study, the amount of variation in competitive advantage of horticulture industry in Kenya as a result of changes in green purchasing, reverse logistics was sought.

Table 6: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.872 ^a	.760	.753	.08102

a. Predictors: (Constant), green purchasing, reverse logistics

From the findings, the value of adjusted R^2 was 0.753, an indication that 75.3% variation in competitive advantage in the horticultural industry in Kenya can be explained by changes in green purchasing, reverse logistics. The remaining 24.7% suggest that there are other factors that can be used to explain competitive advantage in the horticultural industry in Kenya that were not discussed in this study. The findings further showed that the variables under investigation (green purchasing, reverse logistics, green packaging and green distribution) were strongly and positively related as indicated by correlation coefficient value (R) of 0.872.

Analysis of Variance

ANOVA is used to test the significance of the model. In this study, significance of the model was tested at 95% confidence interval. Results are as presented in Table 4.7

Table 7: Analysis of Variance

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	20.166	2	5.041	768.111	.000 ^b
1 Residual	1.195	223	.007		
Total	21.361	227			

From Table 7, the significance of the model was 0.000. This suggests that the model developed was significant since its p-value (0.000) was less than the selected level of significance (0.05). From the ANOVA table, the f-calculated value (768.111) was greater than the f-critical value ($F_{4,182}=2.421$) obtained from the f-distribution tables. The findings therefore suggest that the model was significant and therefore, green purchasing, reverse logistics, can be used to predict competitive advantage in the horticultural industry in Kenya.

Beta Coefficients of the Study Variables

The study used the coefficients findings to test the research hypothesis. If the p value is less than 0.05, we reject the H_0 but if it is more than 0.05, the H_0 is not rejected.

Table 8: Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.506	.173		8.705	.000
1 Green Purchasing	.218	.083	.213	2.626	.009
Reverse Logistics	.228	.044	.208	5.178	.000

From the findings in Table 8, the following regression equation was fitted:

$$Y = 1.506 + 0.218 X_1 + 0.228 X_2$$

Where: Y= Competitive Advantage; X_1 = Green purchasing; X_2 = Reverse Logistics;

From the regression equation, it can be observed that when the variables green purchasing, reverse logistics, are held to a constant zero. Competitive advantage in the horticultural industry in Kenya would be 1.506.

The first research hypothesis was there is a significant positive relationship between green purchasing and competitive advantage in the horticultural industry in Kenya. The findings showed that green purchasing has positive influence on competitive advantage in the horticultural industry in Kenya ($\beta=0.218$). The influence was further found to be significant since the p-value (0.009) was less than the selected level of significance (0.05). Since the p-value is less than 0.05 we accept the alternative hypothesis that there is a significant positive relationship between green purchasing and competitive advantage in the Horticultural Industry in Kenya.

The second research hypothesis was reverse logistics have a significant positive influence on competitive advantage in the Horticultural Industry in Kenya. The findings showed that reverse logistics has a positive influence on competitive advantage in the Horticultural Industry in Kenya ($\beta=0.228$). Further, the influence of reverse logistics is seen to be significant since the p-value (0.000) was less than the selected level of significance (0.05). Since the p-value was less than the selected level of significance, we accept the alternative hypothesis that reverse logistics have a significant positive influence on competitive advantage in the Horticultural Industry in Kenya.

Moderation Regression Results

To analyse the moderating effect of value addition on the relationship between sustainable supply chain and competitive advantage in the horticultural industry in Kenya, the study computed the moderated regression analysis.

Moderated Model Summary

The model summary for moderated regression analysis was used to show the amount of variation in competitive advantage in the horticultural industry in Kenya as a result of changes in moderated sustainable supply chain practices (green purchasing*value addition, reverse logistics*value addition).

Table 9: Model Summary-Moderated

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.872 ^a	.760	.753	.08102
2	.931 ^b	.867	.864	.12513

The value of adjusted R square is 0.864. This suggests that 86.4% variation in competitive advantage in the horticultural industry in Kenya can be explained by changes in moderated green purchasing, moderated reverse logistics. The remaining 13.6% suggests that there are other factors that can be used to explain variation in competitive advantage in the horticultural industry that were not discussed in this study. The moderated variables were also strongly and positively related with competitive advantage in the horticultural industry as indicated by correlation coefficient value (R) of 0.931 which is greater than the un-moderated value (0.872)

shown in model 1. This means that the moderating variable (value addition) positively affect the relationship between sustainable supply chain and competitive advantage of the Horticultural Industry in Kenya.

Moderated Analysis of Variance

The ANOVA table for moderated regression analysis was used to determine whether the moderated model was significant. Significance of the model was tested at 5% level of significance.

Table 10: Moderated Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	20.166	2	5.041	768.111	.000 ^b
	Residual	1.195	223	.007		
	Total	21.361	227			
2	Regression	18.511	2	4.628	295.552	.000 ^c
	Residual	2.850	223	.016		
	Total	21.361	227			

From the findings in Table 10, the significance of the models was 0.000 which is less than the selected level of significance 0.05. This therefore suggests that the moderated model was significant. The findings further show that the F-calculated value (295.552) was greater than the F-critical value ($F_{4,182}=2.421$); this suggests that the moderated variables can be used to predict competitive advantage in the horticultural industry in Kenya. Since the model was significant it suggested that value addition was a significant moderating the relationship between sustainable supply chain and competitive advantage of the horticultural industry in Kenya.

Moderated Beta Coefficients of the Study Variables

The coefficients findings of the moderated regression analysis were used to test the final research hypothesis: Value addition has a significant positive moderating effect on the relationship between sustainable supply chain and competitive advantage of the Horticultural Industry in Kenya.

Table 11: Moderated Beta Coefficient

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
(Constant)	1.506	.173		8.705	.000	
1	Green Purchasing	.218	.083	.213	2.626	.009
	Reverse Logistics	.228	.044	.208	5.178	.000
(Constant)	.909	.336		2.707	.007	
2	Green Purchasing* Value addition	.398	.106	.261	3.763	.000
	Reverse Logistics* Value addition	.097	.040	.072	2.442	.016

From the findings in Table 4.11, the following regression equation was fitted.

$$Y = 0.909 + 0.398X_1 * M + 0.097X_2 * M$$

From the modelled regression equation above, it can be seen that when moderated green purchasing, moderated reverse logistics, are held to a constant zero, competitive advantage in the horticultural industry in Kenya would be 0.909.

The findings also show that moderated green purchasing has positive influence (.398) on competitive advantage in the horticultural industry and this influence is significant with a p-value of 0.000. Moderated reverse logistic is also seen to have a positive (.097) influence on competitive advantage in the horticultural industry. The influence is significant with a p-value of 0.016. These findings show that all the moderated variables had positive influence on competitive advantage in the horticultural industry and their influence was significant since each variable had a p-value less than the selected level of significance (0.05). This therefore suggests that we accept the alternative hypothesis that value addition has a significant positive moderating effect on the relationship between sustainable supply chain and competitive advantage of the horticultural industry in Kenya.

CONCLUSIONS

There was significant positive relationship between green purchasing and competitive advantage in the horticultural industry in Kenya. The findings also showed that green purchasing has positive influence on competitive advantage in the horticultural industry in Kenya. The study accepted the alternative hypothesis that there is a significant positive relationship between green purchasing and competitive advantage in the Horticultural Industry in Kenya. The study concludes that green purchasing is positively related to competitive advantage in the horticultural industry in Kenya.

Reverse logistics had a significant positive influence on competitive advantage in the Horticultural Industry in Kenya. The findings also showed that reverse logistics has a positive influence on competitive advantage in the Horticultural Industry in Kenya. The study accepted the alternative hypothesis that reverse logistics have a significant positive influence on competitive advantage in the Horticultural Industry in Kenya. The study

concludes that reverse logistics is positively related to competitive advantage in the horticultural industry in Kenya

RECOMMENDATIONS

The management of the horticultural companies should improve on their green purchasing practices. This can be done by applying flexible sustainable supply chain practices through research so as to understand the changing environmental needs and remain relevant in the market. The study also recommends that the companies should ensure that their reverse logistics are properly structured. This would ensure that customer needs are met, ensuring customer loyalty and making it difficult for competitors to imitate simple services that are geared towards value creation and the environment.

REFERENCES

- Abdirahim, A. M. (2013). Environmental responsibility in SMEs: does it deliver competitive advantage? *Business strategy and the environment*. Vol. 13, no. 3, pp. 156-71,
- Abdullah, N.A.H.N., Yaakub, S., 2014, Reverse logistics: pressure for adoption and the impact on firm's performance. *International Journal of Business and Sociology*.15 (1), 151.
- Agriculture and Food Authority, AFA. (2017). *Creating Wage Employment in Horticulture Sector in Kenya*. Agriculture and Food Authority.
- Aiginger C. (2016). Competitiveness: from a dangerous obsession to a welfare creating ability with positive externalities, *The Journal of Industry, Competition and Trade*, Vol. 6, 161-177.
- Alshura, K.S.M. &Awawdeh, H.Z.Y. (2016). Green Supply Chain Practices as Determinants of Achieving Green Performance of Extractive Industries in Jordan. *International Journal of Business and Social Sciences*, 7(7) 166-177.
- ASDS, (2010). *Agricultural Sector Development Strategy, 2010-2020*.Government of Kenya.iiiEconomic survey. 2015. Kenya National bureau of Statistics. 2015 Economic Survey.
- Asfaw, S.; Mithöfer, D.; Waibel, H. (2010). What impact are EU supermarket standards having on developing countries' export of high-value horticultural products? Evidence from Kenya.*J.Int.Food Agribus. Market*, 22, 252–276.
- Aziz, T. N. A. T., Jaafar, H. S., Tajuddin, R. M., 2016, Green supply chain: Awareness of logistics industry in Malaysia. *ProcediaSocial and Behavioral Sciences*, 219, 121-125.
- Badenhorst, A., (2013). A framework for prioritizing practices to overcome cost-related problems in reverse logistics. *Journal of Transport and Supply Chain Management*, 7(1), 113-123.
- Barney, J. B., & Clark, D. N. (2007).*Resource-based theory: Creating and sustaining competitive advantage*. Oxford University Press on Demand.
- Blome, C., Hollos, D., &Paulraj, A. (2013). GP and green supplier development: antecedents and effects on supplier performance. *International Journal of Production Research*, 52(1), 32-49. <https://doi.org/10.1080/00207543.2013.825748>
- Blumberg, R., Cooper, D. R. & Schindler, P. S. (2011).*Business Research Methods* (11th ed.). Irwin: McGraw-Hill
- Bohari, M. A. A. (2015). *Developing Green Procurement Framework for Construction Projects in Malaysia*, Conference: The 6th International Conference on Engineering, Project, and Production Management (EPPM2015), At Surfers Paradise Marriott Resort & Spa, Gold Coast, Qld.
- Bryman, A. (2012). *Social Research Methods*.4th Edition. Oxford: Oxford University Press.
- Carrion-Flores, C.E., & Innes, R. (2010).Environmental innovation and environmental performance.*Journal of Environmental Economics and Management*, 59, 27-42.
- Chang, H-T., & Chen, J.L. (2004).The conflict-problem-solving CAD software integrating TRIZ into ecoinnovation.*Advances in Engineering Software*, 35, 553-566.
- Chen, Y-S., (2008).The positive effect of green intellectual capital on competitive advantages of firms.*Journal of Business Ethics*, 77, 271-286.
- Chiou, T-Y., Chan, H.K., Lettice, F., & Chung, S.H. (2011).The influence of greening the suppliers and green innovation on environmental performance and competitive advantage in Taiwan.*Transportation Research Part E*, 47, 822-836.
- Conway, S., & Steward, F. (1998). Networks and interfaces in environmental innovation: a comparative study in the UK and Germany. *The Journal of High Technology Management Research*, 9(2), 239-253.
- Creswell, J. W. (2013). *Research design: qualitative, quantitative, and mixed method approaches*. USA: Sage publication Inc.
- Dannenberg, P.; Nduru, G.M. (2013)Practices in international value chains: The case of the Kenyan fruit and vegetable chain beyond the exclusion debate. *TijdschriftvoorEconomische en SocialeGeografie*, 104, 41–56.
- Davila, A. (2012). Moving procurement systems to the internet: the adoption and use of e-Procurement technology models. *European Management Journal*, 21(1), 11-23.
- De Wit, B., & Meyer, R. (2010).*Strategy: process, content, context*. Cengage Learning EMEA.
- Demirel, P., &Kesidou, E. (2011).Stimulating different types of eco-innovation in the UK: government policies and firm motivations. *Ecological Economics*, 70, 1546-1557.
- Denzin, N., K. & Lincoln, Y., S. (eds) (2011). *The SAGE Handbook of Qualitative Research*. London: Sage.
- Dong, S., Xu, S. X., & Zhu, K. X. (2015). Research Note—Information Technology in Supply Chains: The Value of IT-Enabled Resources Under Competition. *Information Systems Research*, 20(1), 18-32.
- Dubey, R., Gunasekaran, A., Ali, S.S., (2015), Exploring the relationship between leadership, operational practices, institutional pressures and environmental performance: a framework for green supply chain. *Int. J. Prod. Econ.*160, 120–132.

- Eiadat, Y., Kelly, A., Roche, F., & Eyadat, H. (2008). Green and competitive? An empirical test of the mediating role of environmental innovation strategy. *Journal of World Business*, 43, 131-145.
- ElTayeb, T.K., Zailani, S. and Jayaraman, K. (2010), The examination on the drivers for green purchasing adoption among EMS 14001 certified companies in Malaysia, *Journal of Manufacturing Technology Management*, Vol. 21 No. 2, pp. 206-25.
- Failte Ireland (2013). *Operational Standards of Performance. A guide to help you through the four part process of developing new standards and improving existing ones.* Failte Ireland.
- Fleischmann, M., Beullens P., Ruwaard, B. and Wassenhove (2001). The impact of product recovery on logistics network design. *Production and Operations Management*, 10(2).
- Flick, U. (2014). *An Introduction to Qualitative Research*, 5th edition. London: Sage.
- Green, K.W., Pamela, Z., Meacham J. & Bhadauria, S. V. (2012). Green Supply Chain Management Practices: Impact on Performance. *Supply*
- Igwebe, A. (2016). Environmental strategies, upgrading and competitive advantage in global value chains”, *Business strategy and the environment*, vol. 22, no. 1, pp. 62-72.
- Jayant, A., Gupta, P. and Garg, S.K. (2012). Perspectives in reverse supply chain management (R-SCM): A state of the art literature review, *Jordan Journal of Mechanical and Industrial Engineering*, 6(1), 87–102.
- Kanabiel, P. (2013). A framework linking intangible resources and capabilities to sustainable competitive advantage”, *Strategic management journal*, vol. 14, no. 8, pp. 607-
- Kaplinsky, R., (2010) Globalization and unequalisation: What can be learned from value chain analysis, *Journal of Development Studies*, Vol. 37, No. 2., pp 117-146
- Karungani, N.P. & Ochiri, G. (2017). Effect of ICT infrastructure support on organisation
- Khor, K. S., Udin, Z. M., Ramayah, T., Hazen, B. T. (2016), Reverse logistics in Malaysia: The contingent role of institutional pressure. *International Journal of Production Economics*, 175, 96-108.
- Kipkorir, E. & Wanyoike, M (2015). Factors Influencing Implementation of Green Procurement in Multinational Tea companies in Kericho County. *International Journal of Economics, Commerce and Management*. 3 (6)
- Laboso, K. T. (2013). An assessment of the role of logistics on green procurement management at Kenya Agricultural Research Institute. *International Journal of Social Sciences and Entrepreneurship*, 1 (5), 562-586.
- Lemmet S., (2012) *The Impacts of Sustainable Procurement*. Eight illustrative Case Studies. UNEP Division of Technology, Industry and Economics.
- Liao, S. H., Hu, D. C., & Ding, L. W. (2017). Assessing the influence of supply chain collaboration value innovation, supply chain capability and competitive advantage in Taiwan’s networking communication industry. *International Journal of Production Economics*, 191, 143-153.
- Lintukangas, K., Hallikas, J., & Kähkönen, A. (2013). *The Role of Green Supply Management in the Development of Sustainable Supply Chain*. Corporate Social Responsibility and Environmental Management, n/a-n/a.
- Machogu, W. N. (2014). Factors influencing the adoption of green supply chain management strategy in industries: A case of Delmonte Company. *International Academic Journal of Information Sciences and Project Management*, 1 (2), 1-21
- Mahmood, A. (2014). Export Competitiveness and Comparative Advantage of NonAgricultural Production Sectors: Trends and Analysis Institute of Development Economics (PIDE) *paper presented at Twentieth Annual General Meeting & Conference*. 43 (4): 541- 561.
- Maignan, I., Hillebrand, B., & McAlister, D. (2012). Managing socially-responsible buying: how to integrate noneconomic criteria into the purchasing process. *European Management Journal*, Vol. 20 No. 6, pp. 641-8.
- Mapiye, C., Chimonyo, M., Muchenje, V., Dzama, K., Marufu, M.C., Raats, J.G., (2007), Potential for value-addition of Nguni cattle products in the communal areas of South Africa, *African Journal of Agricultural Research*, Vol 2(10) pp.488-495
- Maruhe, L. (2014). Proactive corporate environmental strategy and the development of competitively valuable organizational capabilities”, *Strategic management journal*, vol. 19, no. 8, pp.729- 753.
- Mbekeani, K., (2017). The Role of Infrastructure in Determining Export Competitiveness, Framework Paper. *AERC Research Project on Export Supply Response Capacity Constraints in Africa, Paper No. ESWP_05*.
- Min, H., Galle, WP, (2011). Green purchasing practices of US firms. *International Journal of Operations and Production Management* 21 (9), 1222-1238.
- Mweria, T. (2015). Competitive advantage in a Kenyan Perspective. *Lahore Journal of economics*, 14(2): 125-133.
- Nasiche, F. & Ngugi, G. K. (2014). Determinants of adoption of green procurement in the public sector: A case study of Kenya Pipeline Company. *International Journal of Social Sciences and Entrepreneurship*, 3(6); 41-58.
- O’Leary, Z. (2014). *The essential guide to doing your research project*. London: Sage.
- Ogreaan C., & Herciu M. (2010). Globalization of competitiveness – a multilevel bibliographical study. *Studies in business and economics, University “Lucian Blaga”, Sibiu*, Vol. 5 (1), 126-138.
- Olaore, R. A. & Adebisi, N. T. (2013). ‘Accounting, purchasing and supply chain management interface’, *IOSR Journal of Business and Management*, 11(2), 80-84.
- Onyango, D. (2017). Organizational alignment as competitive advantage”, *Strategic management journal*, vol. 13, no. 2, pp. 119- 134.
- Research Solutions Africa (RSA) Ltd. (2015). *Report Of A Market Study On Fresh Vegetables Market In Kenya Retailer’s Survey*. Ministry of economic affairs, Agriculture and innovation, Nairobi Kenya.
- Riaz, K., and Jansen, H.G. (2012). Spatial patterns of revealed comparative advantage of Pakistan's agricultural exports. *Pakistan Econ. and Social Rev.* 50 (2): 97- 120.
- Rifin, A. (2010). Export competitiveness of Indonesia's palm oil product. *Trends in Agric. Econ.* 3(1): 1-18.

- Rudestam, K.E. & Newton, R.R. (2015). *Surviving your dissertation: A comprehensive guide to content and process*. Thousand Oaks, California: Sage.
- Saboniene, A. (2019). Lithuanian Export Competitiveness: Comparison with other Baltic States. *Inzinerine Ekonomika-Engineering Econ.* (2): 49-57.
- Salam, A. P. D. (2017). Achieving Competitive Advantage through Managing Supply Chain Excellence: The Case of Thai Garment Industry. *In Proceedings of the international conference on computer and industrial management, ICIM* (pp. 29-30)
- Schermerhorn, J., Davidson, P., Poole, D., Woods, P., Simon, A., & McBarron, E. (2014). *Management: Foundations and Applications* (2nd Asia-Pacific Edition). John Wiley & Sons.
- Schwab K. (2014). *The Global Competitiveness Report 2014-2015*, World Economic Forum, Geneva.
- Sparks, S.A. (2016). *Post-Harvest Handling System for Fresh Fruits and Vegetables in Sub-Saharan Africa and Potential Enhancement by the Aid for Trade Initiative*. Clemson University, Georgia, USA.
- Subba, T. (2016). The Impact of Supply Chain Management Practices on Competitive Advantage and Organizational Performance. *Journal of Strategic Management*, 34(2), pp. 107-124.
- Udin, Z. (2012). Impact of Reverse Logistics Product Disposition towards Business Performance in Malaysian E&E Companies. *Journal of Supply Chain and Customer Relationship Management*, 14(2); 206-223.
- United Nations.(2015). *Sustainable Development Goals*. Retrieved, from <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>.
- Utkulu U., and Dilek S. (2014). Revealed Comparative Advantage and Competitiveness: Evidence for Turkey vis-à-vis the EU/15. *A paper presented at the European Trade Study Group 6th Annual Conference*. p.26.
- VIETRADE. Vietnam Trade promotion agency (2014). *Vietnam Fruit and Vegetables Exports to South East Asian countries*.
- Wainainah, D. (2015). *Fruits and Cut Flower Exports to Europe in Sharp Q3 Rise*. Business Daily, Friday, November 201th, 2015.
- Wang, P., Zhou, G. & Ren, J., (2010). Research on structure of reverse logistics network, *International Conference of Logistics Engineering and Management 2010 (ICLEM 2010) proceedings* 1(5), 336–362, Chengdu, China
- Wisner, J. D., Tan, K-C. & Leong, G. K. (2012). *Supply Chain Management: A Balanced Approach*, third edition, Canada, South-Western Cengage Learning.
- Wu, Y. (2008). *Green purchasing to achieve corporate sustainability*. Master Thesis For Lumes Lund University.
- Yang, W. & Zhang, Y. (2012). ‘Research on factors of green purchasing practices of Chinese’, *Journal of Business Management and Economics*, 3(5), 222-231.
- Yen, Y. X. & Yen, S. Y. (2012). ‘Top-management’s role in adopting green purchasing standards in high-tech industrial firms’, *Journal of Business Research*, 65(7), 951- 959.