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GREEN PACKAGING, GREEN DISTRIBUTION AND COMPETITIVE ADVANTAGE IN THE HORTICULTURAL SECTOR IN KENYA

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Abstract

Sustainable supply chain management has been at the stake of every organization that seeks to enhance the achievement of organizational goals. On the other hand, horticultural industry has been a key economic booster in the country for decades. 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 influence of green packaging on competitive advantage in the horticultural industry; assess the relationship between green distribution 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 green packaging has positive influence on competitive advantage in the horticultural industry in Kenya. Green distribution had a positive influence on competitive advantage in the horticultural industry in Kenya. The study recommends that the companies should involve all shareholders in green packing activities. This would ensure that they understand green packaging and challenges that come with the process so that they can fully embrace green packaging benefits. The study recommends that the horticultural firms should include green distribution as one of their strategies. This is because green packaging in essential if the company should be committed to in order to remain innovative, effective, competitive and efficient in today's ever changing dynamic marketing environment.

Keywords: Competitive Advantage, Green Packaging, 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.

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.

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; &Merllies, 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 paper sought to relationship between green packaging, green distribution and competitive advantage in the horticultural sector in Kenya

Objectives of the Study

The main objective of this study was to establish the relationship between green packaging, green distribution and competitive advantage in the horticultural sector in Kenya. The following were the specific objectives for the study.

1. To determine the influence of green packaging on competitive advantage in the Horticultural Industry in Kenya
2. To examine the influence of green distribution on 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}: Green Packaging has a significant positive influence on competitive advantage in the Horticultural Industry in Kenya

H_{A2}: There is a significant positive influence of green distribution 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

Theoretical Review

Institutional Theory

Institutional theory analyses the impact of outside weights on the firm (Hirsch, 1975; Lee et al., 2013) and how undertakings receive arrangements and actualize procedures that are authentic inside their authoritative fields (Scott and Christensen, 1995; Lee et al., 2013). Further associations think about industry standards, firm custom, and the board trends, among

different worries, to figure their systems (Lee et al., 2013). Institutional hypothesis offers a valuable research structure for the investigation of GSCM in regard to how outside elements constrain firms to actualize certain GSCM rehearses (Sarkis et al., 2010; Lee et al., 2013).

Inside the setting of GSCM, on-screen characters in the production network work in a manner that satisfies client and legitimate prerequisites, further weights from government organizations and national/worldwide controllers will impact the reception of naturally mindful conduct (Zailaniet al., 2012). Narasimhan& Carter (1998) expressed that organizations have regulated natural practices in light of weight from outside and inner powers just as a consciousness of the outcomes of resistance with ecological objectives. This theory can interface Sustainable supply chain practices like green packaging, green purchasing and green distribution which are the subject of this study since they entail environmentally, socially and ecologically responsible behaviour greatly influenced by the pressure to conform to existing standards.

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.

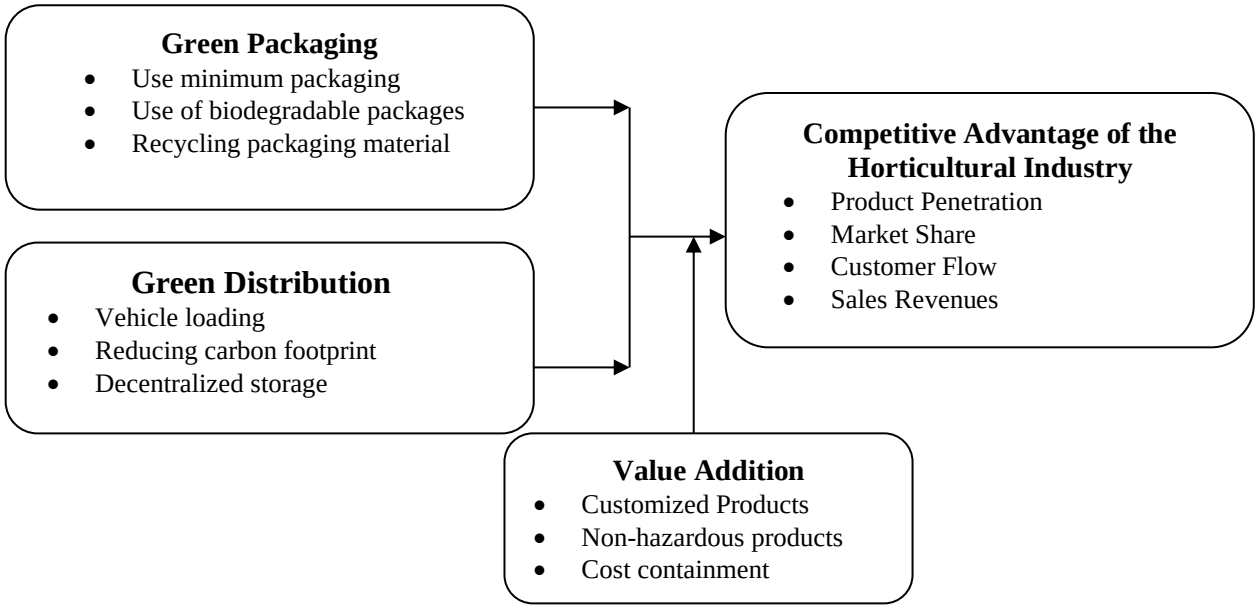

Figure 1: Conceptual Framework

Green Packaging

Packaging can be defined as all the activities of designing and producing the container for a product (Pathak, 2014). According to Manalili et al. (2014), packaging refers to the technology and material for enclosing or protecting products for distribution, storage, sale, and use. Packaging is defined by two main factors: functionality and point of destination (Arikan, 2011). Green package, can also be called ecological package or environmentally friendly package, is defined as environmentally friendly package, which is completely made by natural plants, can be recycled or second use, be prone to degradation and promote sustainable development, even during itswhole lifecycle, it is harmless to the environment as well as to the human body and livestock's health. In short, green packaging is the appropriate packaging that can be reused, recycled or degraded, corrupted and does not cause pollution in humans and the environment during the product life cycle.

Green Distribution

Distribution refers to the movement of a product from the production stage to the customer in the supply chain. Distribution determines the overall profitability of a firm as it directly affects both the supply chain cost and the customer experience. Expanded ecological mindfulness has driven more organizations to receive reasonable, or green, appropriation rehearses. These practices range from diminishing the measure of non-renewable energy sources and ozone harming substances utilized in assembling and circulation to expanded accentuation on the earth during conveyance. Toke, Gupta and Dandekar (2010) characterize green inventory network the board (GSCM) as the reconciliation of natural reasoning into store network the board, including item structure, material sourcing and determination, fabricating forms, conveyance of the last item to the buyers, and end-of-life the board of the item after its valuable life.

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. 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. 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. Reliability was used to check the internal consistency of the data measuring instrument. The study used both descriptive and inferential statistics to analyse data. Correlational analysis establishes whether or not a relationship exists between two variables. Multiple regression analyses were conducted to test the hypotheses. The analysed data was presented in form of tables, pie-charts and bar graphs. Qualitative data was presented in prose form to support the quantitative data.

Results and Discussion

The sample size of the study comprised of 236 heads of the supply chain section in horticultural firms in Kenya. 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. The data collected from the pilot study was not used in the final analysis. 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, green packaging had an average Cronbach's reliability alpha of 0.795, green distribution had a Cronbach's reliability alpha of 0.770, value addition had an average Cronbach's reliability alpha of 0.817 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 packaging	0.795	9	Reliable
Green distribution	0.770	6	Reliable
Value Addition	0.817	5	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 Packaging

In this section the respondents indicated their level of agreement with statement relating to the influence of green packaging on competitive advantage in the horticultural industry in Kenya. Table 2 presents the findings obtained.

Table 2: Influence of green packaging on competitive advantage

Statement	Mean	Std. Dev
The company has put appropriate measures to reduce the packaging material used so as to reduce wastage	4.007	1.251
We encourage our suppliers to use biodegradable materials	3.817	1.142
The material used in packaging is produced in a manner that itself is environmentally friendly and non-hazardous	3.902	1.235
The suppliers of the packaging materials are effectively involved so as to enable them produce environment friendly materials	3.764	1.168
The storage of the merchandise in our firm is put at one central place to avoid repackaging	3.975	1.169
The customers are encouraged to adopt to the bio-degradable materials when seeking for repackaging of their orders	3.836	1.426
Our firm encourages recycling of materials used in packaging	3.831	1.300
The process of packaging is mainstreamed towards avoid emissions or any other polluting means	3.837	1.207
Through adherence to green packaging prospects the company has enhanced efficiency and cost saving thus enhancing value addition	3.903	1.345

From the finding presented in Table 2 , the study found that majority of the respondents agreed that the company has put appropriate measures to reduce the packaging material used so as to reduce wastage as shown by mean of 4.007 and standard deviation of 1.251, the storage of the merchandise in our firm is put at one central place to avoid repackaging as shown by mean of 3.975 and standard deviation of 1.169, through adherence to green packaging prospects the company has enhanced efficiency and cost saving thus enhancing value addition as shown by mean of 3.903 and stand deviation of 1.345, the material used in packaging is produced in a

manner that itself is environmental friendly and non-hazardous as shown by mean of 3.902 and standard deviation of 1.235, the process of packaging is mainstreamed towards avoid emissions or any other polluting means as shown by mean of 3.837 and standard deviation of 1.207 , the customers are encouraged to adopt to the bio-degradable materials when seeking for repackaging of their orders as shown by mean of 3.836 and standard deviation of 1.426, their firm encourages recycling of materials used in packaging as shown by mean of 3.831 and standard deviation of 1.300 and they encourage their suppliers to use biodegradable materials as shown by mean of 3.817 and standard deviation of 1.142. The study revealed that horticultural firm's commitment and goodwill to enhance green packaging in the procurement operations is through using recyclable materials for environmentally friendly packaging, using unique, innovative, or high-tech materials, going natural for environment-friendly packaging, creating custom packaging boxes to preserve space and materials throughout the distribution process, incorporating packaging into the product and arranging our products in different ways. The findings concur with Doszhanov and Ahmad (2015) study which portrayed that there are significant relationships between green brand awareness, green brand trust, green perceived value, and customer's intention to use green products. Ogecha (2016) Found that recycling had a significant influence on value addition and customer service through meeting the customer needs and expectations.

Green Distribution

In this section the respondents were requested to indicate their level of agreement with statement relating to the influence of green distribution on competitive advantage in the horticultural industry in Kenya. Table 3 presents the findings obtained.

Table 3: Influence of green distribution on competitive advantage

Statement	Mean	Std. Dev
We have put measures to ensure the warehouses and distribution centres are decentralized near the customers	3.955	1.199
The vehicles used in distributions are put in good condition to ensure they deliver efficiently and less pollution	3.961	1.149
Measures are put by the organization to ensure the distribution means used observe carbon print	3.816	1.214
Vehicles are effectively loaded to reduce the number of trips during distribution	4.021	1.265
The trips are properly arranged to ensure same-route customers are supplied in one trip	3.836	1.313

From the findings in Table 3, the respondents were in agreement that vehicles are effectively loaded to reduce the number of trips during distribution as shown by mean of 4.021 and standard deviation of 1.265, the vehicles used in distributions are put in good condition to ensure they deliver efficiently and less pollution as shown by mean of 3.91 and standard

deviation of 3.961 and standard deviation of 1.149, they have put measures to ensure the warehouses and distribution centres are decentralized near the customers as shown by mean of 3.955 and standard deviation of 1.199, the trips are properly arranged to ensure same-route customers are supplied in one trip as shown by mean of 3.836 and standard deviation of 1.313 and measures are put by the organization to ensure the distribution means used observe carbon print as shown by mean of 3.816 and standard deviation of 1.214. The study revealed that most horticultural firm were committed to ensuring green distribution achieved through clean idle truck policies, speed management policies, having econ friendly tires, using the best additives available, engine shutdown policies, adoption of solar energy at the warehouse and waste recycling programs. Hasan (2013) concluded that green distribution has an important part to play in the connection between natural development and upper hand. Al-Odeh and Smallwood (2012), indicated the factors like fuel, methods of transport, framework, and operational practices are significant components to consider in creating green transportation. Muma *et al.* (2014) found a positive connection between green circulation and ecological execution.

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 4presents the findings obtained.

Table 4: Value addition in the Horticultural Industry

Statement	Mean	Std. Dev
Our company has ensured access and availability of customized products across all our supply chains	3.738	1.168
The company is committed towards having non-hazardous products across all its product lines in the market	3.988	1.182
Since the company started focusing on sustainable supply chain management the operational costs have been contained to some percentage	3.902	1.235
The company has increased its internal efficiency as a result of focusing on sustainable supply chain management	3.850	1.220
Value addition in the products by our company has contributed to the company's performance	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 2.

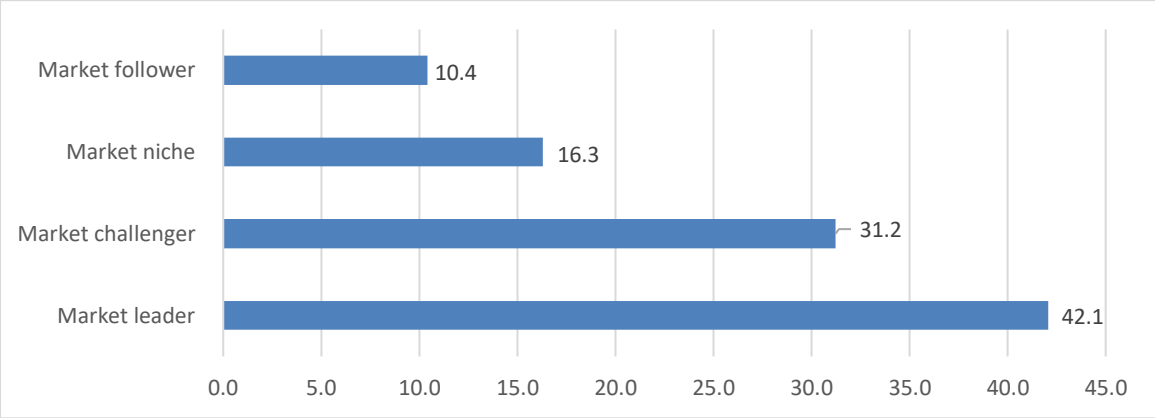

Figure 2: Competitive Position of Organization in Relation To Other Players

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 concur 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 ±0.1 <r< ±0.29; medium if ±0.3 <r< ±0.49; and strong if r> ±0.5.

Table 5: Correlation Matrix

Variables				
		Competitive Advantage	Green Packaging	Green Distribution
Competitive Advantage	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	221		
Green Packaging	Pearson Correlation	.837**	1	
	Sig. (2-tailed)	.000		
	N	221	221	
Green Distribution	Pearson Correlation	.867**	.125	1
	Sig. (2-tailed)	.000	.098	
	N	221	221	221

From the findings in Table 5, green packaging and competitive advantage in the horticultural industry in Kenya is seen to have a significant relationship (p=0.000<0.05). In addition, the relationship between these green packaging and competitive advantage was found to be positive and strong (r= 0.837). This suggests that the level of competitive advantage in the horticultural industry in Kenya is dependent on green packaging. Green distribution is seen to have a strong positive relationship with competitive advantage in the horticultural industry in Kenya (r = 0.867). Green distribution and competitive advantage are also seen to have a positive significant relationship (p=0.000<0.05). This implies that the level of competitive advantage in the horticultural industry in Kenya is dependent on their green distribution.

Multiple Regression Results

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, green packaging and green distribution 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 packaging, green distribution

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 packaging and green distribution. 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 7

Table 7: 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			

From Table 7, the significance of the model was 0.000. This suggests that the model developed was significance 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 packaging and green distribution 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 Ho is not rejected.

Table 8: Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.506	.173		8.705	.000

Green Packaging	.327	.114	.277	2.874	.005
Green Distribution	.604	.079	.656	7.660	.000

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

$Y = 1.506 + 0.327 X_1 + 0.604 X_2$

Where: Y= Competitive Advantage; X_1= Green Packaging; X_2= Green Distribution; ε= error term. From the regression equation, it can be observed that when the variables green packaging and green distribution are held to a constant zero. Competitive advantage in the horticultural industry in Kenya would be 1.506.

The first research hypothesis tested was green packaging has a significant positive influence on competitive advantage in the horticultural industry in Kenya. The findings showed that green packaging has positive influence on competitive advantage in the horticultural industry in Kenya ($\beta = 0.327$). The influence was further found to be significant since the p-value (0.005) 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 green packaging has a significant positive influence on competitive advantage in the Horticultural Industry in Kenya.

The second hypothesis tested was there is a significant positive influence of green distribution on competitive advantage in the horticultural industry in Kenya. The findings showed that green distribution have a positive influence on competitive advantage in the horticultural industry in Kenya ($\beta=0.604$). Further, the influence of green distribution on competitive advantage 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 that there is a significant positive influence of green distribution 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 packaging*value addition and green distribution*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 green distribution. 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 ($F_{2,182}$=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		
1	(Constant)	1.506	.173		8.705	.000
	Green Packaging	.327	.114	.277	2.874	.005
	Green Distribution	.604	.079	.656	7.660	.000

	(Constant)	.909	.336		2.707	.007
2	Green Packaging* Value addition	1.020	.083	.860	12.288	.000
	Green Distribution* Value addition	1.043	.086	.437	12.201	.000

From the findings in Table 11, the following regression equation was fitted.

$Y = 0.909 + 1.020X_1*M + 1.043X_2*M$

From the modelled regression equation above, it can be seen that when moderated green packaging, moderated green distribution 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 packaging has positive influence on competitive advantage in the horticultural industry (1.020). The influence was significant with p-value of 0.000. Lastly, the findings showed that green distribution had positive (1.043) influence on competitive advantage in the horticultural industry with significance value of 0.000. 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

The findings showed that green packaging has a significant positive influence on competitive advantage in the horticultural industry in Kenya. The findings also showed that green packaging has positive influence on competitive advantage in the horticultural industry in Kenya. The study accepted the alternative hypothesis that green packaging has a significant positive influence on competitive advantage in the Horticultural Industry in Kenya. The study concludes that green packaging is positively related to competitive advantage in the horticultural industry in Kenya. The study found that there was a significant positive influence of green distribution on competitive advantage in the horticultural industry in Kenya. The findings showed that green distribution have a positive influence on competitive advantage in the horticultural industry in Kenya. Further, the influence of green distribution on competitive advantage was seen to be significant. From the findings, the study concludes that green distribution is positively related to competitive advantage in the horticultural industry in Kenya.

Recommendations

The study recommends that the companies should involve all shareholders in green packing activities. This would ensure that they understand green packaging and challenges that come with the process so that they can fully embrace green packaging benefits. The study recommends that the horticultural firms should include green distribution as one of their

strategies. This is because green packaging in essential if the company should be committed to in order to remain innovative, effective, competitive and efficient in today's ever changing dynamic marketing environment.

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