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LOGISTICS MANAGEMENT PRACTICES AND PERFORMANCE FOOD AND BEVERAGE MANUFACURING FIRMS IN NAIROBI CITY COUNTY, KENYA

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ABSTRACT

The study sought to investigate the effects of Logistics Management Practices on Performance Food And Beverage Manufacuring Firms In Nairobi City County,Kenya. The study sought to accomplish the following specific objectives: to establish the effects of green technology on the Performance Food And Beverage Manufacuring Firms In Nairobi City County,Kenya, and to investigate how green technology affects on the Performance Food And Beverage Manufacuring Firms In Nairobi City County,Kenya. This research adopted a descriptive approach on the effects of Logistics Management Practices on performance of manufacturing firms. The target population of this investigation composed of the Management staff of mananufactering firm in kenya. Simple random sampling technique was applied to come up with a sample size where primary data was accumulated specifically from respondents and for this study the research used a questionnaire. The questionnaire consisted of close and open-ended questions. The research conducted a multiple regression analysis so as to determine the relationship between Logistics Management Practices and performance. The target population was 187 administration staff. The research used stratified random sampling procedure to select a sample size of 127 respondents. Quantitative data was collected using questionnaires and analyzed by the use of descriptive statistics using SPSS and presented using tables, pie charts and bar graphs. The results indicated that 94% agreed that green procurement impacts on organizational performance in the manufacturing firms, 75% of the respondents were of the sentiments that green technology significantly affects performance in the manufacturing firms. The coefficient of determination (R-square) was 0.728 implying that the four variables jointly accounted for up to 72.8% of the variation in Performance Food And Beverage Manufacuring Firms In Nairobi City County,Kenya. It follows 27.2% of the variation Performance Food And Beverage Manufacuring Firms In Nairobi City County,Kenya. The study recommends that another study should be carried out on the same topic that evaluates a broader range of the effects of Logistics Management Practicespractice on performance in the manufacturing firms or covers another industry in the economy such as the banking industry, transport industry, and the agricultural industry among others.

Key Words: Green Procurement, Green Technology, Logistics Management Practices

Background of the Study

Among several challenges that firms face globally such as high costs, stringent regulations, economic recessions and stiff competition, environmental degradation has also raised fears. Firms have become increasingly concerned over sustainability and environmental management. Logistics Management Practiceshas gained prominence due to its ability to provide solutions to this concern. The rise of Logistics Management Practicesis driven by several factors. Customers have put immense pressure on companies to become more environmentally responsible. In an online study conducted by the Nielsen Company (2015), 66% of worldwide respondents are willing to pay more for goods and services that come from companies that are committed to corporate social responsibility and environmental conservation, a rise from 55% in the year 2014, and 50% in 2013. Government and non-governmental bodies have acted as drivers to the adoption of Logistics Management Practicesthrough formulation and implementation of environmental acts, policies and agreements. Economic incentives have also contributed to the growth of reverse logistics. According to Ruiz-Benítez and Cambra-Fierro (2011), Logistics Management Practicesleads to reduced costs, improved customer service, increased productivity, increased facility output and improved service levels.

Theories that explain the relationship between Logistics Management Practicesand operational performance include the resource based view, natural resource based view, institutional theory and stakeholder theory. The resource based view argues that for a firm to gain competitive advantage, it must possess resources that are rare, difficult to imitate, non- substitutable and valuable (Wernefelt, 1984). Firms can adopt Logistics Management Practicesas a resource that possesses these qualities such that they are able to gain competitive advantage. The natural resource based view argues that a firm cannot simply rely on core competencies without taking the natural environment into account (Hart, 1995). Logistics Management Practicesplays a key role in protecting the environment through reduction in waste associated with recycling as well as reduction in energy consumption through reusing. The institutional theory proposes that normative, mimetic and coercive forces influence how firms behave (Di Maggio & Powell, 1983). These three forces play an important role in encouraging the adoption of reverse logistics. The stakeholder theory argues that a firm is in a relationship with its stakeholders and this relationship may change from time to time depending on the firm's behaviour (Freeman, 1984). These stakeholders can influence the firm to adopt Logistics Management Practices such as the case of customers putting pressure on firms to become more environmentally responsible.

In Kenya, Logistics Management Practiceshas been incorporated into the automotive, manufacturing, service, ICT, medical and even the liquefied petroleum gas (LPG) firms though the level of adoption varies. For liquefied petroleum gas companies, Logistics Management Practicesplays a crucial role in ensuring profitability and survival. These companies practice Logistics Management Practicesthrough return of cylinders for refilling, reuse and proper disposal. The major challenges faced by LPG firms in Kenya are loss of cylinders, pirate filling, high cost of filling, illegal and legal competitors, inability to trace flow of cylinders, inadequately trained staff, safety concerns and heavy taxes (Chege, 2013). Around 5-7% of the population presently uses liquefied petroleum gas as a primary source of fuel whereas the rest use charcoal, firewood, dung or crop waste (Global LPG Partnership, 2013).

Logistics Management Practiceshas ended up being more noticeable in both the business organization and the scholarly community as of late, spreading over such various territories as recycling, remanufacturing, data technology, warehousing, activities, and ecological supportability, among others (Dowlatshahi, 2012). Internationally, logistics directors understand that the switch channel is an objective for gains in effectiveness and decrease of expenses and have begun to give more consideration regarding this region, along these lines utilizing Logistics Management Practicesas a potential market differentiator and be Among several challenges that firms face globally such as high costs, stringent regulations, economic

recessions and stiff competition, environmental degradation has also raised fears. Firms have become increasingly concerned over sustainability and environmental management. Logistics Management Practiceshas gained prominence due to its ability to provide solutions to this concern. The rise of Logistics Management Practicesis driven by several factors. Customers have put immense pressure on companies to become more environmentally responsible. In an online study conducted by the Nielsen Company (2015), 66% of worldwide respondents are willing to pay more for goods and services that come from companies that are committed to corporate social responsibility and environmental conservation, a rise from 55% in the year 2014, and 50% in 2013. Government and non-governmental bodies have acted as drivers to the adoption of Logistics Management Practicesthrough formulation and implementation of environmental acts, policies and agreements. Economic incentives have also contributed to the growth of reverse logistics. According to Ruiz-Benítez and Cambra-Fierro (2011), Logistics Management Practicesleads to reduced costs, improved customer service, increased productivity, increased facility output and improved service levels.

The manufacturing sector plays a key role in Kenya's economic growth. The main goal of this sector is to increasingly contribute to Kenya's GDP by at least 10% per annum (KIPPRA, 2013). Additionally, the manufacturing sector was expected to record a 10% growth in the 2008-2012 medium term period driven. This was largely driven by local markets, regional as well as global markets. The performance of the manufacturing sector in Kenya has not been without challenges. The development and graduation of the firms in the manufacturing sector has not been acknowledge to its full potential because of different factors such as high cost of credit leading to high cost of raw materials, restrictive legislation in relation to environmental regulation in accordance with effluence emission or disposal and inability for industries to meet ISO 14001 environmental certification and ISO 9001 product quality standards limits their product qualities and efficiencies. This makes consumers distrust these organizations and their products and/or services (Zhu & Sarkis, 2011).

Additionally, the sector is highly fragmented with more than 2,000 manufacturing units hence divided into several broad sub-sectors, as shown in figure. The top most manufacturing subsectors account for 50 per cent of the sector GDP, 50 per cent of exports, and 60 per cent of formal employment. Nearly 50 per cent of manufacturing firms in Kenya employ 50 workers or less. Most manufacturing firms are family-owned and operated. In addition, the bulk of Kenya's manufactured goods (95 percent) are basic products such as food, beverages, building materials and basic chemicals. Only 5 per cent of manufactured items, such as pharmaceuticals, are in skill-intensive activities (KAM, 2013). This sudy expouned on the knowledge gap anufacturing firms in Kenya are mainly focusing on becoming efficient and flexible in their manufacturing methods in order to increase their profits and ensure that they produce environmental friendly products that boost trust and confidence of consumers (Bolo & Wainaina, 2011).

Statement of the Problem

The manufacturing industry is a fast growingsector in developing countries, Kenya included. In Kenya, the sector contributes over 10% to the GDP according to the 2014-2015 national budget. However, high cost of production and often low quality of raw materials has become a major problem for leading manufacturers in the country. This, it is alleged, has made some players in the sector to implement a number of cost cutting measures some of which focused on contravening internationally recognized practices. Thus, chemical manufacturer in the country for instance are now forced operate under quite rigorous and strict environmental regulation and legislation due to the effects of their effluence to water bodies. Similarly, the Government of Kenya in 2009 was forced to ban the use of all plastic bags due to their adverse effects on the environment which had a negative effect on plastic manufacturers as well as

supermarkets across the country. (KAM, 2014). This study sees Logistics Management Practicesas a possible cure to these challenges.

Empirical evidence adduced shows researcher such as, Eltayeb *et al.,* (2011), Rao and Holt (2009), De Giovanni and Vinzi (2012), Green et al. (2011) and Azevedo *et al.,* (2011) have attempted to link adoption of Logistics Management Practices to firm perfomance. According to their research findings, Rao and Holt (2009) showed that there exists a positive relationship between Logistics Management Practices and firm perfomance , De Giovanni and Vinzi (2012) established that the existing relationship was not significant while Azevedo *et al.,* (2011) found a combination of positive relationship aswell as other relationships. Thus, globally, evidence from the literature show a lack of consensus on the impact of Logistics Management Practiceson firm performance.

A study done by Hussein and Shale (2014), on effects of sustainable procurement practices on firm performance in manufacturing sector in Kenya agreed that corporate social responsibility, product reusability, supplier involvement and ethical practices contribute to Logistics Management Practicesin the firm. With all these studies that little research has been conducted on Logistics Management Practices. With these learning gaps this study tends to bridge the existing knowledge gap by exploring and surveying the effect of Logistics Management Practiceson Performance Food And Beverage Manufacuring Firms In Nairobi City County,Kenya.

General Objective

The main objective of this study was to assess the effects of Logistics Management Practices on Performance Food And Beverage Manufacuring Firms In Nairobi City County,Kenya.

Specific Objective

i. To assess how green procurement affects on the Performance Food And Beverage Manufacuring Firms In Nairobi City County,Kenya.
ii. To establish the effects of green technology on the Performance Food And Beverage Manufacuring Firms In Nairobi City County,Kenya.

LITERATURE REVIEW

Theoretical Review

Resource Based View Theory

The Resource-based View (RBV) is considered as a standout amongst the most powerful speculations in administration. The term asset is wide in nature, in that it alludes to not just physical (substantial) resources, for example, gear, plants, and area, yet in addition to immaterial resources, for example, administration expertise, learning, and authoritative resources (Dietrich & Krafft, 2012). Asset based theory sees the firm as a heap of quirky assets and resources, which underlines the utilization of rate, significant, in-imitable and un-substitutable assets to increase supportable upper hand. Sehgal (2010) noticed that asset based view researches the significance of inner assets in deciding firm activities to make and keep up an upper hand and enhance performance. In any case, just having such assets does not ensure the advancement of upper hand or the production of significant worth. To get predominant performance, firms should adequately oversee, apportion, and endeavor assets. All the more particularly, firms that can accurately coordinate assets to particular projects and occasions or to ecological open doors will probably create capacities that outcome in better performance (Sehgal, 2010). There are dependably issues with the absence of administration data that does not give a total perspective of assets of a firm to make designation and misuse. The viable and proficient distributions and administration of assets are affirmed to be a key factor impacting recycling (Sehgal, 2010; Zacharia *et al*., 2011).

Mellewigt and Nothnagel (2011) in their exact research found that new writing approaches have broadened the hypothetical system of the asset-based theory that recognizes assets and capacities, and distinguishes the connection between them as the establishment for a long-haul procedure. Abilities are mind boggling packs of aptitudes, resources, and amassed information practiced through authoritative procedures, which empower firms to organize exercises and make utilization of their assets. Firms contend in view of their assets and abilities, and unmistakable capacities of firms are basic assets of supported upper hand and predominant performance. Contingent upon asset allotments, firms may have techniques to enhance capacities, or create connections (outsourcing, key union, or joint endeavor) to actualize items recycling effectively (Mellewigt & Nothnagel 2011).

As indicated by Taylor *et al.*, (2012), recycling is an extremely exceptional instrument backward logistics hones in manufacturing industries. It has prompted an extraordinary decrease of operational expenses by 12% in the associations which is a lift to the performance. Like the subject of asset-based view, Coca-Cola has been working with non-administrative associations on ecological discussion and guaranteeing they center around recycling of plastic jugs and underscoring on the utilization of glass bottles which has turned out to be an exceptionally positive activity and has enormously enhanced their performance.

Theory of Technology Diffusion

Technological advancement was depicted by Josef Schumpeter as containing of a few phases: "development" the main being utilization of the specialized expertise of a thought; "development" the following being another item being business presentation of a thought and "dissemination" the aloof utilization of another strategy for getting things done by a few people (Schumpeter, 2009). In this way the advantages of another technology are immeasurably appreciated through the dispersion procedure.

Technology dispersion theory urges associations to be particular and to receive ecological cordial advances that ensure the earth (Testa, 2012). The theory is material to this investigation since green creation is quickly developing in significance which requires green technology selection. Rising economies extend as populaces develop and the assets on the planet are experiencing various difficulties. In inventory network administration, the green technology reception assumes a key job in the creation work in assembling organizations, for example, CocaCola Company restricted which give the developing necessity to products, are connected to antagonistic condition impacts (Blome, 2014).

Conceptual Framework

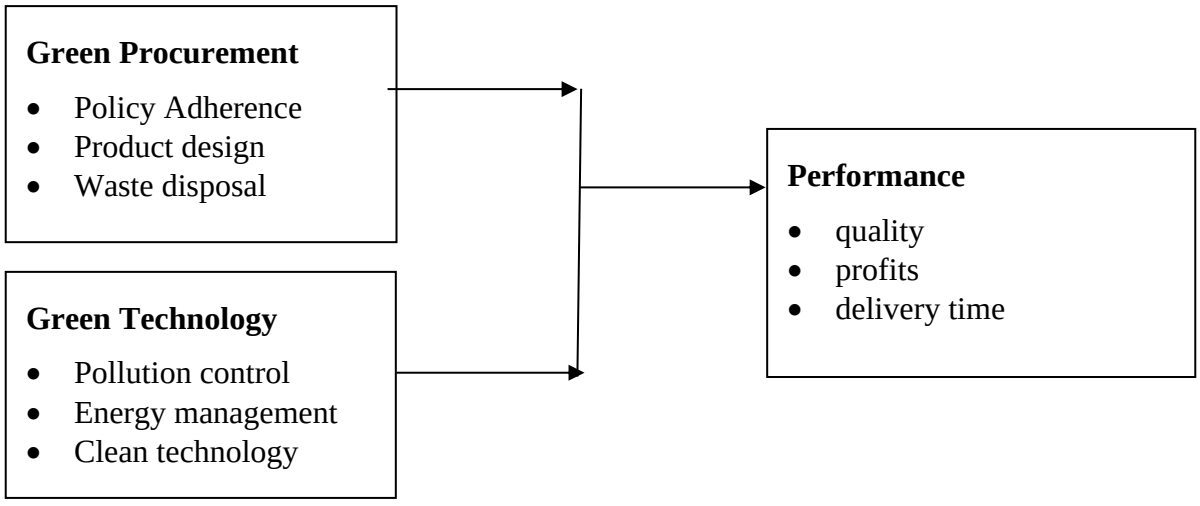

Figure 2. 1: Conceptual Framework

Green Procurement

According to Lee *et al.*, (2011) green procurement is the adoption of certain environment friendly policies whereby organizations ensure that suppliers meet their environmental objectives, the buying firm may deploy collaboration-based activities that include training, environmental information sharing and joint research (Arlbjorn & Luthje, 2012). When a firm embraces green procurement, the organization's performance stands to be boosted since there is minimal costs incurred and thus a manufacturing firms will have high performance levels.

Green Technology

In the recent happenings, green technology is now being practiced in Kenya and organizations are doing so to protect environmental degradation. New green management measures can be considered as organizational environmental technologies. According to the Oslo-Manual of the OECD and Eurostat (2010), organizational technologies in general refer to the implementation of new management techniques such as Total Quality Management (TQM), the introduction of significantly changed organizational structures, and the implementation of new or substantially changed corporate strategic orientations. Therefore, this will help manufactuuring to improve its performance levels and become more profitable when it ensures that green procurement is practiced and successful.

Empirical Review

Green Procurement and Firm Performance

As indicated by Lee *et al.*, (2011) green acquisition is the reception of certain condition well disposed approaches whereby associations guarantee that providers meet their natural targets, the purchasing firm may convey coordinated effort based exercises that incorporate preparing, ecological data sharing and joint research (Arlbjorn & Luthje, 2012). To execute GLP associations ought to take after practices which comprise of natural store network administration rules. Various investigations have attempted to recognize green practices in associations which are alluded to as ecological and quality administration systems. Inside natural administration is basic to enhancing the association's ecological performance. Green Procurement (GP) alludes to the act of counteracting waste and contamination by thinking about ecological effect, for example, value, performance, and different elements when settling on buying choices (Holbrook, 2009). GP is the manner in which buyers utilize their capacity to profit the earth by purchasing items that have lesser impact on the natural effect (Commission for Environmental Cooperation, 2009).

Green procurement is the choice of merchandise and enterprises that limits ecological effect where associations are required to do an investigation of the natural effect of an item over its lifecycle. Green Procurement is otherwise called Affirmative Procurement. This is alluded to as the buy of items and administrations which are ecologically well disposed. The items or administrations acquired ought to have a lower affect on the earth over as long as they can remember cycle than the standard proportional (Mulwa, 2010).

As indicated by Zhu and Sarkis (2011) they saw that quality administration greases up performance of GSCM. They recommend that under thorough quality control, associations can enhance their ecological practice by gaining from encounters of their quality administration programs. By getting "green" testaments, for example, the ISO arrangement of natural administration systems EMS and principles, associations can make organized components for persistent change in ecological performance. As firms play along together in the production network to accomplish upper hand and win the request at the main issue, all individuals from the affix need to synchronize their methodologies toward the end clients' heading.

As indicated by Braunscheidel *et al*., (2011) he saw that production network methodology and upper hand must fit together and the consistency between client needs and store network

abilities must exist. Keeping in mind the end goal to accomplish the vital fit, firms ought to have the capacity to comprehend and astutely practice their client needs to coordinate their administration necessities. It is additionally proposed that organizations can configuration production network in assigning undertakings as to beating contenders from other esteem chains by coordinating the upper hands the supply chains have with those the clients want (Eltayeb, Zailani, & Ramayah, 2011).

Holbrook (2009), recommend that GP incorporates hones that incorporate; Recycled materials, association can purchase or reuse materials so as to lessen cost and contamination in nature. Vitality proficient items and vitality productive reserve control gadgets. This can incorporate acquiring for items that can perform exceptionally and utilize less vitality, model, most organizations these days have supplanted human work with machines which are more productive and utilize less vitality to work. Bio based items, bundling materials which are biodegradable as opposed to utilizing polythene materials. Non-ozone draining substance and need synthetic compounds, associations ought to embrace synthetic compounds and creation rehearses which are naturally amicable keeping in mind the end goal to ensure the ozone. Elective Fuels this incorporates utilization of different types of energizes, for example, bio-diesel, bio-gas, and ethanol.

Green Technology and Firm Performance

Green technology is a term for the most part utilized on the other hand to clean technology. Different terms like as alleviation and adjustment advances, and natural technologies, atmosphere related advances, or deviations thereof (Feder, 2013). Supportability is advanced utilizing green technology while ozone depleting substance emanations are decreased, or help in the environmental change arrangement. An assortment of items and systems can be incorporated into green technology. Naturally Sound Technologies was produced by the International Patent Classification Committee. The accompanying general classes of such advances are incorporated into the Green Inventory: elective vitality creation, farming/ranger service, vitality atomic power age, transportation, protection, squander administration, and managerial, administrative or plan perspectives (Gollin, 2011).

Green technology which encourages spotless and sustainable power source is the most noteworthy. Consuming of petroleum derivatives is the center provider to the arrival of man-made carbon dioxide. Because of burning of gas, coal and oil 80% of such CO2 emerges (Sunding, 2012). It ought to likewise be noticed these assets that can't be reestablished are assessed to last just sixty years other than outflows of carbon emerging from the utilization of vitality sources. Burning of non-renewable energy sources as vitality options require to be taken likewise. Utilization technologies and produce is a broad zone of secured by green technology. Associated with the picking and use of green advances is the use of technologies of condition for evaluating and directing, remediation and reclamation and contamination anticipation and control (Adesina, 2011). This minimization can be in utilization, for example, proficient apparatuses or crossover autos or underway like SO2 windmills or scrubbers.

Kiberenge (2014) completed an investigation on the selection of Logistics Management Practicesin data and interchanges technology firms in Kenya. He found that a large number of the administrators in the ICT division have embraced Logistics Management Practicesto calculable levels because of its hugeness for their tasks. He found the primary boundaries to successful selection of Logistics Management Practiceshones were lacking money related assets, insufficient human capital, poor joint effort between store network accomplices, poor IT system and friends estimate. He additionally specified the fundamental drivers of Logistics Management Practicesas government bolster, asset designation, nature of returned items and performance estimation of reverse logistics. Kiberenge's examination did not address parts of firm performance.

Nyakundi (2013) completed an examination on appropriation of green assembling hones by sustenance handling firms in Mombasa County, Kenya. A progression of sustenance preparing firms in Mombasa County recorded by Kenya Association of Manufacturers (KAM) were focused on. An example of 66 firms was taken. The outcomes acquired demonstrated that green assembling hones selection was at usage organize as most nourishment handling had thought about reception. The investigation likewise settled that the major apparent advantages of receiving green assembling were; decrease of waste water, decrease of recurrence of ecological mischances and decrease in scrap rate.

RESEARCH METHODOLOGY

Research Design

Research design is a detailed outline of how an investigation took place (Kothari, 2009). The study adopted a descriptive research design. Descriptive research involves gathering data that describe events and then organize, tabulate, depict and describe that data collection (Kothari, 2009). The descriptive design is deemed appropriate because the main interest is to establish the relationship and analyze how the factors supported matters under analysis in one organization. It was chosen because it enables the research to generalise the findings to a larger population. According to Mugenda and Mugenda (2008) it is important and appropriate to use data where subjects are observed in either natural set ups without manipulating the environment. It can be used when collecting information about people's attitudes and opinions. It was an efficient way to obtain information needed to describe the attitudes, opinions and views of inventory management on the effects of Logistics Management Practices on performance of manufacturing firms.

Target Population

Study population is a well-defined or specified set of people, group of things, households, firms, services, elements or events which are being investigated. Thus the population should fit a certain specification, which the research is studying and the population should be homogenous (Cox, 2012). The research targeted the top-level managers, and middle level managers of manufacturing firms who made a total of 187 respondents. This population provided a significant representation.

Table 3. 1: Target Population

Category	Population	Percentage
Top level managers	49	26
Middle level managers	138	74
Total	**187**	**100**

Source: HR registry (2025)

Sampling Technique

In this study stratified and simple random sampling were used to select the objects that represented the population. There were often factors which divide the population into sub-populations. This had to be accounted for when we select a sample from the population. In order for us to obtain a sample that was a representative of the population, stratified method of sampling was used (Kirk & Miller, 2009). A stratified sample was obtained by taking samples from each stratum or sub-group of a population. A population with several strata, was required to have the proportion of each stratum in the sample, this was the same as in the population. Using this method, the sample was divided into different strata's at the organization thereby the divisions were according to their working departments. Its advantages was that; the cost per observation in the survey was reduced, and that estimates of the parameters were used for each sub-population. In addition to that, the sampling method ensured that all members of the

population were included in the study. A census method of sampling was preferred because it is free from bias and therefore each unit had a chance to be included in the sample (Cooper & Schindler, 2010).

Sample Size

This was a survey and therefore the research studied manufacturing firms. However, from the possible 187 target population, stratified random sampling was employed to select managers from the organization and obtain a total of 127 sample population. This was 60% of the total population. Kothari (2009) argues that if well chosen, samples of about 30% of a population can often give good reliability findings. In addition Mugenda and Mugenda (2008) states that in stratified sampling where population within each strata is known, a sample of 50% is adequate representation for data collection. The managers are deemed suitable for the study as they have better knowledge and awareness on the issue at stake and would provide specific information from a management perspective. This study used Yamane formula to calculate the sample as shown below:

$$n = \frac{N}{1+N\ e\ (\text{square})}$$

$$= \frac{187}{1+187 \times (0.05)^2}$$

Sample size = 127 respondents

Data Collection Methods and Instruments

According to Cox (2012) there are many methods of data collection. The choice of a tool and instrument depends mainly on the attributes of the subjects, research topic, problem question, objectives, design, expected data and results. This is because each tool and instrument collects specific data. Primary data was gathered directly from respondents and for this study the research used a questionnaire. The questionnaire consisted of close and open-ended questions. The research instruments were organized based on the objectives of the study. The questionnaire consisted of two sections, where the first part mainly contained information on the company background which was the gender, age and years of experience. This enabled the research to know the nature of the respondents, while the second part focused on the effects of Logistics Management Practices on Performance Food And Beverage Manufacuring Firms In Nairobi City County,Kenya (Peil, 2011). This enabled the research to be in a position to analyze the effects of Logistics Management Practices on performance of manufacturing firms and any other factor not mentioned in the study.

Pilot Testing

The aim of the pilot study was to test the reliability of the questionnaires. According to Cooper (2010), a pilot test is necessary for testing the reliability of data collection instruments. Cox (2009), explains reliability of research as determining whether the research truly measured that which it was intended to measure or how truthful the research results are. Pilot study was conducted to detect weakness in design and instrumentation and to provide proxy data for selection of a sample.

The researcher selected a pilot group of 5 individuals from the target population to test the reliability of the research instrument. The pilot data was not included in the actual study. The pilot study allowed for pre-testing of the research instrument. The clarity of the research instruments to the respondents was established so as to enhance the instrument's validity and reliability. The study enabled the researcher to be familiar with research and its administration

procedure as well as identifying items that required modification. The result helped the researcher to correct inconsistencies that were seen to arise from the instruments, which ensured they measured what was intended.

Data Analysis and Presentation Methods

Quantitative data that was collected using questionnaires was analyzed by the use of descriptive statistics using SPSS (Statistical Package for Social Sciences) and was presented through percentages, means and frequencies. Content analysis was used to analyze data collected from the open-ended questions. According to Kirk and Miller (2009), content analysis uses a set of categorization for making valid and replicable inferences from data to their context. This offered a systematic and qualitative description of the objectives of the study. In addition, the research conducted a multiple regression analysis so as to determine the relationship between Logistics Management Practices and the variables of the study.

Data presentation is method by which people summarize, organize and communicate information using a variety of tools, such as diagrams, distribution charts, histograms and graphs (Schindler, 2012). Presentation of data was done in form of quantitative and qualitative reports which were presented in form of tables and essay. For the quantitative reports, the tables consisted of mean and standard deviation values that were used to make interpretation of the analysis. Percentage, mean and standard deviation were used to show the frequency of responses. Tables were used to display the rate of responses and to facilitate comparison. Qualitative reports were presented in form of essay which were discussed as per the study objectives aligned with the theories and empirical study. The regression equation that guided the study was: $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \varepsilon$:

RESULTS AND FINDINGS

Descriptive Statistics of Variables

Green Procurement

The study sought to find out how green procurement affects performance in the manufacturing firms. The findings were presented in table 4.1. The results indicated that 52% of the respondents agreed that the amount of investment on green procurement affects the performance, 65% agreed that the firm procures environmental friendly products, 59% agreed that green procurement helps reduce prevention waste and pollution, 43% agreed that the capital invested in green procurement has an impact on firm performance, 71% agreed that green procurement impacts on organizational decision making in the event of purchasing, 83% agreed that the firm is very strict on quality products, and 46% agreed that continuous improvement in environmental performance enables creation of structured mechanisms.

Table 4. 1: Green Procurement

Green Procurement	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly Agree (%)
The amount of investment on green procurement affects the performance	1	2	10	36	52
The firm procures environmental friendly products	0	2	3	30	65
Green procurement helps reduce prevention waste and pollution	1	0	3	37	59
Capital invested in green procurement has an impact on firm performance	7	29	5	16	43
Green procurement impacts on organizational decision making in the event of purchasing	1	1	4	23	71
The firm is very strict on quality products	0	2	1	14	83
Continuous improvement in environmental performance enables creation of structured mechanisms	1	1	10	42	46

Green Technology

The study sought to find out how green technology affects performance in the manufacturing firms. The findings were presented in table 4.4. The findings indicated that 75% of the responded agreed that level of green technology in use has an impact on the performance, 82% agreed that paperless systems have an impact on performance, 81% agreed that green technology assists the organization to run efficiently, 81% agreed that EPOS systems affects performance, 83% agreed that green technology helps the organization to save on cost of purchasing tools and labour, 81% agreed that use of computers has an impact on performance, and 66% agreed that green technology facilitates clean and renewable energy.

Table 4. 2: Green Technology

Green Technology	**Strongly Disagree (%)**	**Disagree (%)**	**Neutral (%)**	**Agree (%)**	**Strongly Agree (%)**
Level of green technology in use has an impact on the performance	1	1	1	22	75
Paperless systems have an impact on performance	1	1	2	14	82
Green technology assists the organization to run efficiently	0	1	3	15	81
EPOS systems affects performance	0	2	3	14	81
Green technology helps the organization to save on cost of purchasing tools and labour	0	2	3	12	83
Use of computers has an impact on performance	0	2	3	14	81
Green technology facilitates clean and renewable energy	0	1	4	29	66

Firm Performance

The study sought to established the changes in the profits among manufacturers between the year 2011 and 2015. The findings presented in Figure 4.1 reveal that there were unsteady trends in the profits among manufacturers in Kenya between the year 2011 and 2015. That can explain that a reduction in the cost of raw material and services due to Logistics Management Practicescan allow companies to competitively market the price of their finished goods in order to win business. The findings are consistent with the findings of a study by Wanyama (2010) who revealed increasing costs in the manufacturers in Kenya.

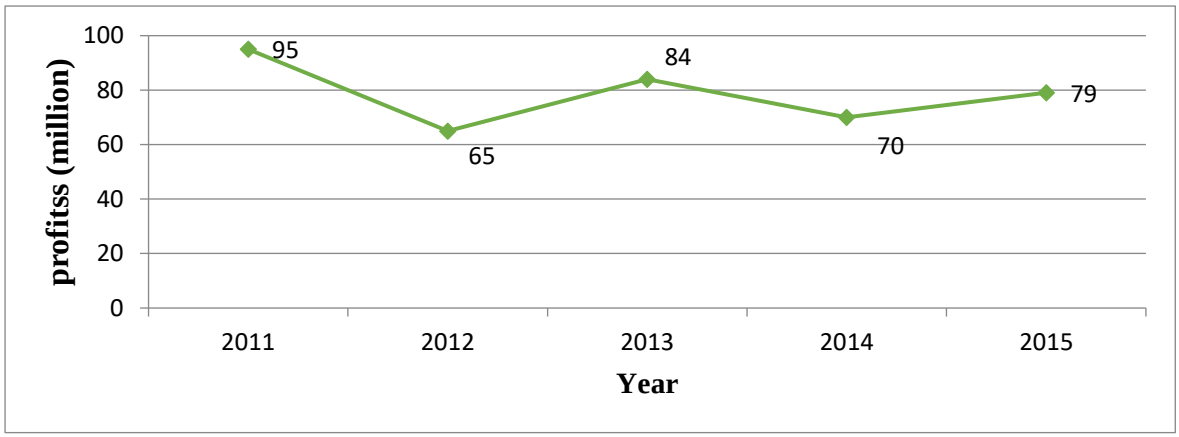

Figure 4. 1: profits of firms

The study further sought to established the changes in product quality as measured by the rejection rate among manufacturers in Kenya between the year 2011 and 2015. The results in figure 4.2 revealed decreasing trends in the product rejection rate among manufacturers in Kenya from the year 2011 to 2014, then followed by a sharp increase in the year 2015. In as much as there is an improvement in performance in terms of reduced rejections of substandard quality product, the value of as at the year 2015 indicates that still faces challenges in the manufacturing firms as Chesang (2013) attest.

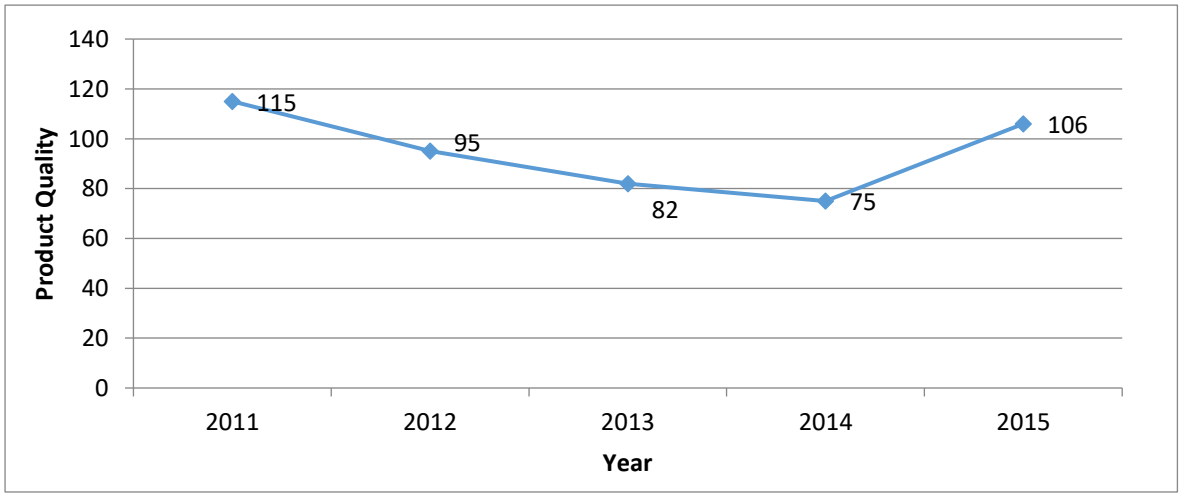

Figure 4. 2: Products Quality

The study sought to establish the changes in the delivery lead time (weeks) among manufacturers in Kenya between the year 2011 and 2015. The results presented in Figure 4.3 reveals fluctuations in the delivery lead time among manufacturers in Kenya. The delivery lead

time decreases steadily from year 2011 to year 2013 followed by an increase in year 2014 to 2015. These findings confirm an argument by Njeru (2015) regarding inefficiency and ineptness of procurement practices in many manufacturers in Kenya.

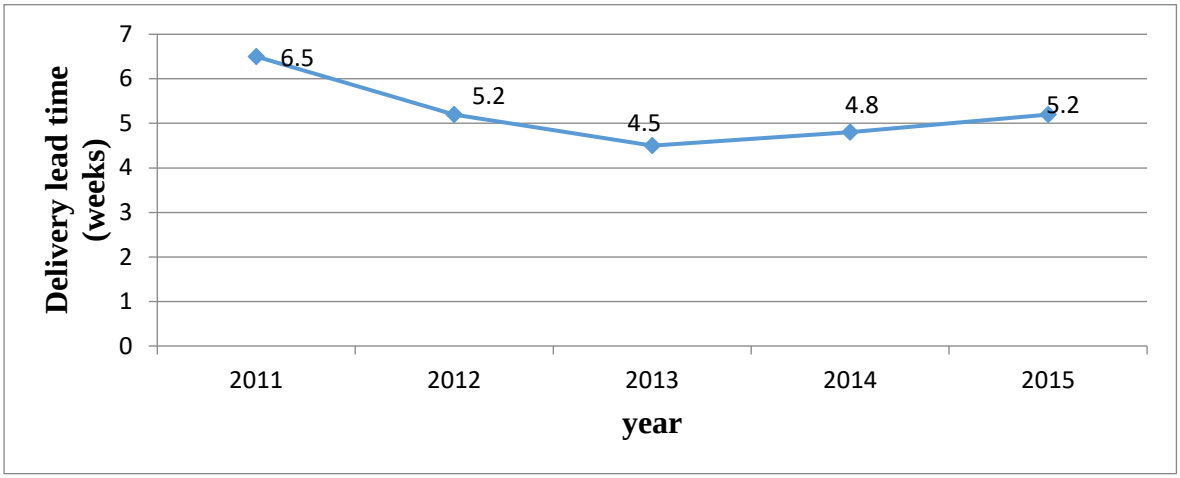

Figure 4. 3: Delivery Lead time

Correlation analysis

Correlation indicates the direction in one variable if another variable changes (Chiang, Jeon, & Li, 2007). A positive Pearson correlation value indicates a positive correlation while a negative Pearson correlation value indicates negative correlation. The study conducted a correlation analysis to establish the association among the variables used in the study. The study used Pearson correlation coefficient to determine the connection among the study variables at 5% level of significance. The study findings on correlation are as presented in Table 4.3

Table 4. 3: Correlation analysis

		Recycling	Green procurement	performance
Green Technology	Sig Pearson correlation	0.315 0.000		
Green procurement	Sig Pearson correlation	0.453 0.000		
Perfomance	Sig Pearson correlation	0.523 0.492	0.505 0.007	
	N	103	103	

Correlation results also indicated that green technology had a positive and significant association with performance among manufacturers in Kenya, (R = 0.318, Sig >0.05). This also implies that an improvement in various indicators of green technology results to a significant improvement performance among manufacturers in Kenya. The findings agree with Hald and Ellegaard (2011) who indicate a positive effect of green technology on performance.

Concisely, the correlation results showed that green procurement is positively and significantly related with performance among manufacturers in Kenya (R = 0.789, Sig<0.05) implying that improvement in various indicators of green procurement resulted to a significant improvement in performance among manufacturers in Kenya. This finding is consistent with the argument by Chen and Paulraj, (2004) who argued that green procurement improves the performance of the buying firm thus enhancing its competitive advantage.

Regression Analysis

This study used the following regression model to determine the influence of Logistics Management Practices on Performance Food And Beverage Manufacuring Firms In Nairobi City County,Kenya: $Y= \beta 0 + \beta_1 X_1 + \beta_2 X_2 + \varepsilon$ Where; Y = performance of manufacturing firms, X1 = green technology , X2= green technology. This multiple regression model was adopted to determine the effect of green technology, green procurement and performance of manufacturing firms.

The model summary results as presented in Table 4.4 revealed that the four independent variables of green technology and green procurement had a strong positive influence on performance among manufacturing firms in Kenya. as shown by a joint Pearson correlation of 0.853. This implies that an overall improvement in all the four independent variables of green technology, green procurement resulted to a strong positive improvement in the performance among manufacturers in Kenya.

The coefficient of determination (R-square) was 0.728 implying that the two variables jointly accounted for up to 72.8% of the variation in performance of manufacturing firms firms in Kenya. It follows 27.2% of the variation performance among manufacturing firms in Kenya was accounted for by other factors not covered in the model presented in this study.

Table 4. 4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.853	0.728	0.709	0.225164

The F statistic indicating the overall significance of the model is significant at 5% (Sig < 0.000) showing that the model was significant. The F calculated statistic of 39.464> F (4, 159) critical value of 2.429 confirming that the model was significant. The model significance results therefore imply that the two independent variables of green technology and green procurement adopted in the study are suitable factors in predicting variation in performance among manufacturing firms in Kenya. The results are presented in Table 4.5.

Table 4. 5: Analysis of Variance (Model Significance)

	Sum of Squares	Df	Mean Square	F	Sig.
Regression	8.003	2	4.015	39.464	0.000
Residual	2.991	101	0.051		
Total	10.994	103			

Green Technology and Performance

Green technology has a positive and significant standardized coefficient value (β=0.195, T-value =2.519, p<0.05) as indicated in table 4.6 and figure 4.8 and 4.9. The positive relationship means if, green technology increases by 1, performance in the manufacturing firms will increase by 0.195.

Green Procurement and Performance

Green procurement has a positive and significant standardized coefficient value (β=0.180, T-value =2.723, p<0.05) as indicated in table 4.6 and figure 4.8 and 4.9. The positive relationship means if, green procurement increases by 1, performance in the manufacturing firms will increase by 0.180.

Table 4.6: Path Coefficients

Path	Regression weight	Standard Error	T Statistics	P values
Green Technology -> Performance	0.195	0.077	2.519	0.013
Green Procurement -> Performance	0.180	0.066	2.723	0.007

CONCLUSION AND RECOMMENDATIONS

Conclusion

Green procurement and performance in the manufacturing firms

Procurement is a very crucial process in any organization especially in the manufacturing industry, with the recent uptake in the use of green procurement. Now organizations are bound to gain a lot from the vast cost saving on green products procurement. It is evident that performance in the manufacturing firm's practices in the organization are dependent on the procurement process. This study has proved that green procurement should be done on routine basis to ensure high levels of performance in the manufacturing firms.

Green technology and performance in the manufacturing firms

The study concludes that green technology affects the performance in the manufacturing firms. Green technology adoption, the study found that there was strong positive correlation between green technology adoption and organizational performance in the manufacturing firms in Kenya. The study also concluded there is a positive relation of green technology adoption on organizational performance in the manufacturing firms in Kenya.

Recommendations

Green procurement and Performance in the manufacturing firms

Proper and continuous green procurement should be done to keep abreast with the changing world. Staff has the most important factor in Logistics Management Practicespractice. The organization should ensure that green procurement is done often in the organization and the management should support green procurement in the organization so as to even create a competitive edge in the market.

Green technology and performance in the manufacturing firms

In order to increase and improve the management of the procurement system in the manufacturing industry in Kenya, manufacturing firms should understand the changing technological environments and adopt the new technology that will enable them to be more efficient and faster serviced delivery to their customers thus increasing the operations of the organization. Improved green technology will minimize costs and increases service delivery. The study recommends that the organization do put in place up to date and most effective green technology applications, this is because applications of green technology enhances organization control, green technology facilitates faster movement of goods, enhanced processes, thus ensuring high levels of organizational performance in the manufacturing firms in Kenya.

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