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INFLUENCE OF REVERSE LOGISTICS PRACTICES ON CUSTOMER PERCEPTION OF MOTOR VEHICLE DEALERS IN KISUMU COUNTY, KENYA

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ABSTRACT

Reverse logistics is an approach in supply chain management that is relatively new hence a lot of emphasis has not been put to it by manufacturing companies in order to attain optimum performance. Most establishments had not put up arrangements to help them handle product returns and remanufacture and how to handle green aspects of supply chain. The overall objective of this study was to establish the effects of reverse logistics practices on customer perception by motor vehicle dealers in Kisumu County, Kenya. The research was steered by two objectives; To examine the extent to which product reuse on reverse logistics practices affects customer perception of motor vehicle dealers in Kisumu County and to establish whether product remanufacture on reverse logistics practices affects customer perception by motor vehicle dealers in Kisumu County. This study embraced a descriptive research design. The target population of this study was fifty employees including staff in the finance, procurement, sales and warehouse departments of seven motor vehicle dealers whose business was dealership in new vehicles and parts in Kisumu County. The research used a structured questionnaire to collect primary data for making conclusions. Data was then evaluated using tables and percentages. Purposive sampling method was used. Data was analyzed using SPSS. Inferential statistics such as correlation and regression was also used. The study found out that product return and product remanufacture positively and significantly influenced customer perception among motor vehicle dealers in Kisumu County.

Key Words: *Products Returns, Products Remanufacture, Reverse Logistics, Supply Chain Management*

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INTRODUCTION

With globalization, there has been witnessed an increase in demand for high performance standards in the areas of cost, quality, performance and reliability and time compression. Consequently companies are being forced to develop global management expertise so as to compete competitively in the global market. Hitt, Ireland and Hoskinsson (2001) noted that global standards are not fixed but require continuous improvement from a company and its employees. Thus the ability of an organization to handle product returns has become an important factor in logistics. Due to strict legislation on environment conservation, respect for consumer rights and due to cut throat competition among industry players, organizations has been compelled to rethink the role of reverse logistics.

According to Rodgers and Tibben –Lembke (1998) reverse logistics comprises of processing returned goods due to cyclic inventory, replenishment, salvage, recalls and excess inventory. It also includes reutilizing programs; harmful material program, outmoded items, disposition and asset take back. De Brito (2002), Wang (2010), Ravi and Shankar (2014), supply chain companies have endured radical conversion in the manner they function since the last era. Companies are finding that though they are streaming products towards the direction of end customer, a range of goods return back the supply chain for a number of causes such as manufacturing returns, commercial returns, product recalls, warranty returns, service returns, end of use returns and end of life returns. To accentuate the importance of reverse logistics in the total incorporation of supply chain management, the return route was auxiliary to the Supply Chain Operation Reference Model (Schultz 2002).

Ravi and Shankar (2005), emphasize the importance of reverse logistics by mentioning that it plays a significant role in the salvage of parts from end –of – life vehicles, remanufacturing of used parts and stock balancing of new parts from dealers. In another study, Andel (1997) emphasizes on how reverse logistics can influence customer satisfaction and also compete in the industry where there is intense competition and also where profit margins are low. It can also be used to clean customers' obsolete and slow moving stock. Dowlatshahi (2010) says that reverse logistics can improve a firm's productivity and profitability by using low-cost, traditionally unused inputs and resources which can minimize the threat of governmental regulation besides improving the corporate image of the organization.

Walters (1989) defines customer perception as the whole practice by which an individual develops knowledge of the surrounding and infers it so that it will fit into his or her frame of orientation. Stephen (1995), says that a product is whatsoever is given to a consumer which either resolves a problematic situation or provides an advantage as well as any add-on including guarantees. Getting the right quality of the product requires an understanding of what the customer expects. This means that quality need not only do what it I expected to do, but should be compared also with how it can play out compared to its competitors or rivals. Issues to determine will include but not limited to performance standards, conformance to specifications, colour, weight, packaging size and shelf life.

The global automotive industry is dominated by Toyota, General Motors, Volkswagen, Ford, Honda, Chrysler, Nissan and BMW. With globalization of this sector gaining storm in the mid 1990's, these companies built facilities in different foreign countries and also formed mergers, strategic alliances amongst the industry players (Bera 2004). Zhaoanjian Mao and Yang Jin (2014) in their research on reverse logistics in Automotive industry determined that reverse logistics is of importance in coming up with a reverse logistics system. This arising because t reverse logistics will not only emphasize automotive returns

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but will also appreciates resource upkeep and environmental fortification.

South Africa has been regarded as the most developed country in Africa. The growth of South Africa as an economic giant in this continent has been attributed to the presence of raw materials, proper infrastructure and cheap and readily available labor. These factors have attracted international investors in this part of the world. In 2005 South Africa produced 78.7% of the vehicle production in Africa (Mbiko 2007). The companies based in South Africa are based in the provinces of Gauteng where BMW, Fiat, Nissan and Ford. East Cape Province hosts Daimler-Chrysler and General Motors. Toyota operates in Kwazulu Natal Province.

Several research studies have been done in Kenya in relation to reverse logistics. However from the studies available none has been done in the motor vehicle sector. In his study, Wanjora (2014) concluded that reverse logistics adoption in Kenya is greatly influenced by legislation. It also noted that manufacturing companies had their own policies that they voluntarily implemented so as to implement the negative effects of economic activities on the environment. The study also revealed that manufacturing companies can be driven to reverse logistics practices to gain economically.

Statement of the problem

Increased customer awareness, demand for a green and pollution free environment, rapid changes in consumer preferences and stiff competition among motor vehicle manufacturing and assembly plants has to a larger degree led to the upturn in prominence of reverse logistics not only globally but also in Kenya. Between September 2007 and February 2011 it was reported that there were seventy five recall incidents involving various Toyota models. The volumes of these vehicles ranged between seven thousand units and 4 million units. Based on these volumes it was important to determine its effect on customer's reaction. According to Yom-Kiun and Hugo (2013), between 2009 and 20 13 over 30 million Toyota cars were recalled and this affected a company which has been seen to be stable in the market It was found out that major recalls had a negative impact on the market share. In another study which they did, it was found out that only the severe product recalls influenced customers demand for a new car. It is important to note that in United States of America, the NHTSA reported accidents by Toyota models due to faulty accelerator pedals, and faulty airbags. This affected consumers' expectations to the extent that Toyota's competitive advantage reduced by 20% towards the end of 2010. In the same country, this body observes that automotive recalls have not only been consistent for the past twenty years but have seen a sharp increase from 95 distinct events to over 177 events per year. The number of vehicle recalls has also increased from 15 million units to 20 million units over the past 20 years.

Several studies have been done on reverse logistics both globally and in Kenya. Turrisi (2012) researched on the impact of reverse logistics on supply chain performance in Italy. Regionally, a study was conducted by Adebambo (2014) on the effects of reverse logistics objectives on economic performance of food and beverage companies in Nigeria.

Kabergey (2015) carried out a research on effects of reverse logistics on operational performance of sisal processing companies in Nakuru County. Reverse logistics, according to Abdullah and Yaakub (2014), has become a necessity in the manufacturing industry due to legislations and environmental concerns governments obligate them to recycle and take back their damaged or aged products. Customer perception is an important tool in Marketing since it helps an organization get feedback regarding how a customer views its products or services. Studies have been done to determine how consumers perceive products or services with respect to quality, price and level of service among other facets. Alvaro, Oscar and

Mercedes (2016) did a study on the impact of buyer quality perception on effectiveness of commercial stimuli for electronic products. Rudi Bruil (2010) did a study on Halal logistics and effects of customer perception. Edward Mecer (2016) observed that although consumer perception of a product is partly based on his experience with the product or service, customer perception is also determined by other factors.

Several research studies carried out both locally and internationally in the sphere of reverse logistics in addition to those on Customer perception; though no study has been embarked on to ascertain the effects of reverse logistics among motor vehicle dealers in Kisumu County, Kenya. This study intended to bridge the gap by determining the effects of reverse logistics on customer perception by motor vehicle dealers in Kisumu County.

Research Objectives

The general objective of this study was to determine the influence of reverse logistics on customer perception by motor vehicle dealers in Kisumu County. The specific objectives were:-

- To examine the influence of product return on customer perception of motor vehicle dealers in Kisumu County.
- To establish whether product remanufacture influences customer perception of motor vehicle dealers in Kisumu County.

Research Hypotheses

H1. Product return influences customer perception of motor vehicle dealers in Kisumu County.

H2. Product remanufacture influences customer perception of motor vehicle dealers in Kisumu County.

LITERATURE REVIEW

Theoretical Framework

Stakeholder Theory

It states that an organization has several interactions with numerous integral groups and that it can stimulate and sustain the support of them by considering and balancing their pertinent interests (Clarkson, 1998; Freeman & Evan, 1991; Jones &Wicks, 1999). It looks at the interactions in an organization between its internal and external environment, how these associations influence the organization's manner of shepherding its activities. Stakeholders of a commercial enterprise include suppliers, customers, shareholders, employees, government, nonprofitmaking community and resident community among others. Increased threats to the environment and depletion of the same has steered the demand for green products and appeals for more rigorous guidelines for eco-friendly environment (Delmas &Toffel, 2004). An organization can either be proactive or reactive in addressing its stakeholders' needs. Henriques and Sadorski (1999) state that proactive approaches to environment are associated with high pressures from organizational stakeholders such as suppliers, customers, employees and shareholders and community stakeholders who include Non-Governmental Organizations and social groups. The importance of each stakeholder varies with time based on the issues facing the organization (Buysee and Verbeke, 2003).

The stakeholders will include governments and trade unions. There are other categorizations that relate to grouping stakeholders which include direct and indirect stakeholders, primary and secondary stakeholders or based on multiple dimensions of urgency, power and legitimacy (Mitchell, 1997). Rodgers and Tibben Lembke (1999) argue that a lot of organizations have liberalized their return policies due to stiff competition. This is evident that stakeholders have influence in the organizations

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activities. According to De Brito and Decker (2004), companies adopt reverse logistics because they fear paying for heavy penalties due to non-compliance with environmental regulations. Due to customers demand for better quality products and also timely delivery of the same, companies may use the information gathered from reverse logistics to improve product quality.

This theory has the purpose of certifying that the managers of companies have the responsibility of guaranteeing that the anticipations of multiple pressure groups such as employees, customers, partner firms, shareholders and the community are met. Even though their interests are varied they may expect the firm's management to pay attention and focus on the achievement of their demands. Thus a manager should ensure that environmental legal requirements are met so as to comply with the law, same way the manager has to ensure that the needs of the customer are met by supplying quality products at the right price. Shareholders' needs also have to be met by ensuring that the company does not engage in activities that may have an implication on its financial position.

Product Life Cycle Theory

This theory was developed by Venon (1966). This theory states that a product goes through various stages over time beginning with the development, birth growth, maturity and decline. It goes further to show how and at what stages firms move their products and innovations through markets and also show the sales of the products over time. Each stage is characterized by its own distinct marketing opportunities and restraints. The stages in product life cycle are product planning, introduction, growth, maturity and decline. At the product introduction stage, an unknown product is introduced in the market, sales are low, and economies of scale are also low due to low production. The promotion of the product is geared towards acquainting the buyers with the product. The pricing plan is focused on first-time buyers and enticing them to try the product. The growth stage follows in this cycle and at this stage and there can be witnessed a growth in sales due to some product awareness by the buyers who are willing to buy them. New buyers enter the market as previous buyers come back as repeat buyers. Production may increase due to increased demand, economies of scale are achieved which leads to cost reduction. Profit margins are often large. Various players move in the market which leads to rivalry because the market is growing speedily. Promotion and pricing strategies are revised to take advantage of the growing industry. At the maturity stage, the market becomes saturated. Production equals demand. There is slow growth, since there are few buyers given that majority of buyers are repeat buyers. Competition is intense leading to aggressive promotional and pricing strategies to capture market share from competition or just to maintain market share (Kotler 2012). At this stage there is intensive price war which leads to lower profit margins. Product differentiation may not influence buyer preferences because of product standardization. Companies are advised to adopt product modifications or improvements to the production processes so as to gain competitive advantage.

At the decline stage, the company is experiencing decline in sales. The product may become obsolete and old fashioned. As a result of decline in sales, the revenues will also decline to a point where it may not be economically viable to continue production. The product is either withdrawn at this stage or sold to an interested investor (Aswathappa, 2010). This theory assists organizations in managing their market mix at different stages of the product at a particular time as well as its production status. It also helps the organization in knowing how and when to allocate resources for the product so as not to either underspend or overspend. The motor vehicle assembly sector is a dynamic one which means that minimal stocks of units and spares have to be kept so

as to avoid overstocking of stocks which may be obsolete or may become obsolescent.

Conceptual Framework

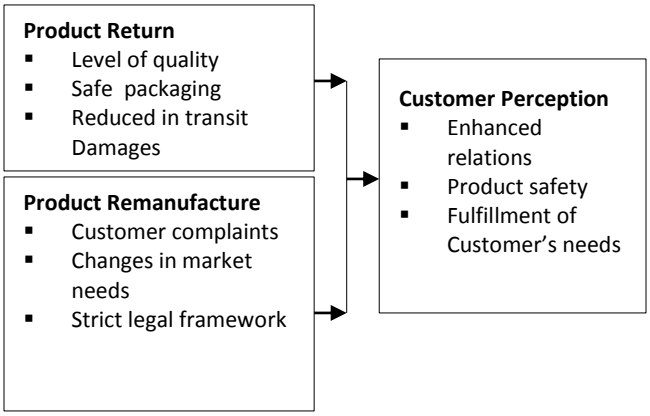

Figure 1: Conceptual Framework
Source: Author (2019)

Remanufacturing reverse logistics practices

Remanufacturing reverse logistics denotes circumstances where a product is collected from the field, evaluated and subsequently either repaired, repaired or revamped. This entails replacing faulty parts with repaired or new parts. This activity occurs when there is no likelihood of direct reuse of the product or such reuse is no longer cost-effective. If managed correctly it can produce beneficial trade prospects through evoking otherwise lost value (Toffel, 2004). Its practices take account of setting up of repair workshops, training employees on refurbishing and setting up of warehouses for storage of parts. Another common characteristic in remanufacturing is issuance of warranty (Azevedo, 2011).

Xia Wen,Jia Dian and He Yu (2011) describe product remanufacture as the process whereby the waste products are taken back to the original state, which they say is an important contributor in reverse logistics. Remanufacturing in reverse logistics may be used to describe a process whereby waste products go through a recycling process to restore the state that the product may be re-used or re-sold. It is a process where waste products are recycled, dismantled, tested or replaced so as to get some re-usable value by re-application or create new products. The new product has similar performance as the original products or in some cases superior performance. Remanufacturing is currently mainly used for automobiles, printers, copiers, mobile phones, television sets, refrigerators, air conditioners, washing machines, tires and products such as printed circuit boards. Management of the remanufacturing process is important since uncertainty has been observed to be a major characteristic which makes it different from other forms of production. One important feature of remanufacture is to fully coordinate the two supply system of parts, one for the new parts system (usually composed of external suppliers) and re-parts supply system (usually composed of internal storage dismantling and recovery workshops).

According to Li and Xiao (2009), out of 1 million engines remanufactured, there was a 61% reduction in costs, 46% reduction in production cycle. They also found out that auto-parts remanufacturing through advanced cleaning, repair and surface treatment technology can make waste components achieve performance as new products. This process also inherits 70% of additional worth of the old commodity, costs 50% less than the old product and can attain savings of 60% of energy and 70% of material.

They further term the process of remanufacture to comprise of assembly (recovery), revealing, appraisal, grouping, disassembly and cleaning. Next the goods are remanufactured and then lastly redeployed. The unwanted material that businesses accumulate is warehoused in the waste warehouse, whereas destruction plant is for the destruction remanufacturing process. The recoverable parts are located in the recoverable parts warehouse and so on (Xue, Xu & Chen 2009).

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Steinhilper (2001) perceives that remanufacturing encompasses disassembling of parts, cleaning of parts, scrutiny and sorting, repair, refurbishment or replacement of faulty parts and also assembly and testing. Numerous establishments undertaking reverse logistics tend to conglomerate manufacturing in matching with remanufacturing in closed loop supply chain. Savaskan(2004)avers to the fact that the visualization of remanufacturing in a closed loop supply chain is a invigorating and re-forming that spreads and increases a product life cycle. Aside of the economic and environmental inferences that remanufacturing products can fetch, new products face pressures that result into a series of alternatives to remanufacturing.

(Golinska & Kawa, 2011) Perceive that remanufacturing, which permits corporations to evoke residual value add-ons in form of disassembles, reassembly and also re-claiming of materials. Guide (2000) notes that remanufacturing is dissimilar to repair since parts and components are disassembled and are then given back to like- new conditions. Kim (2008) alludes to the fact that the motor sector has the lengthiest practice in remanufacturing amongst businesses. This is for the reason that 10% of all cars and automobiles require an engine replacement during their life, thus arousing a need to explore the ambiguity of remanufacturing. The uncertainty can be qualified to the amount of waste material to be recycled, vagueness of recovery and arrival time, doubt of product quality of the recycled goods, ambiguity of demand for the remanufactured product and doubt regarding remanufacturing overheads. Different categories of material require dissimilar circumstances which result in intricacy of remanufacturing logistics comprising production scheduling, stock, structural model, network design and management.

Product returns reverse logistics practices

Product return denotes to the taking back of raw materials and components which have been bought but unqualified acceptance, as well as the transportation, inspection and storage related logistics relevant to the return of sold products (Figenbaum & Thomas, 1986). Reynaldo and Ertel (2009) opine that locomotive companies were playing a significant part in the entire motorized supply chain. They also point to the fact that in the course of reverse logistics, there are several-for-one dealings between the enterprises within supply chain downstream with the end user for locomotive companies. If locomotive enterprise embraced a relaxed return and recall rule, this could diminish the grievances reports that included wholesalers, retailers and ultimately consumers. It would also permit companies to fortify their communication with supply chain downstream, which would additionally reduce and answer problems of information asymmetry which synchronizes the relationship among locomotive enterprises downstream.

Ko and Evans (2005), observe that the return of products can be separated into five categories namely: non-defective returns from clients and retailers or distributors, return of defective products that are mostly due to manufacture technology and quality management whose outcomes is quality function defects. Strivastava and Strivastava (2006) terms product return as product recall which means that companies must recuperate on the hand products from wholesalers, retailers or end-users. Distinctive explanations for product recall are ones that have been sold and found to be defective. Other reasons comprise of damages during handling and transportation procedures, return of order processing faults in the packaging process and returns instigated by supply delays. A product may be recalled from the buyer just to boost the image of the advertising firm and ultimately improve the position of the consumer in the market.

Other explanations may be because of product expiration or when rules mandate that they be returned to source (Vlachos & Decker, 2003). Goods

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can also be returned for in-house reasons due to internal management and technical issues such as quality concerns, product packaging concerns, product defects, internal product parts missing and also where the product is defective. Davis (1998) summarized product return motives according to their headstreams which he categorized into five. The first motivation is that a product may be give back from the customer in occasions where the retailers, which in most cases are supermarkets, are not content with the return policy. This is observed to improve the standing of the consumer however it is prone to exploitation by some customers who return goods which do not have quality glitches.

The other cause is that a product may be returned from the vendor for the reason that the retailer may want to retain consumer loyalty with his customer and as such may not validate or screen the grievances from the consumer before returning the product to the manufacturer. Return may also arise when sales personnel of the vendor do not give the client a noble understanding of the product's benefits and weaknesses. The third reason is due to in-house reasons which include poor in-house organization and technical concerns comprising product quality glitches and misplaced internal parts. Supply chain associated matters can also be a motive for product returns. Logistics and supply chain management obliges close partnership and mutual trust among the players in the chain. However unintentional interruptions may occur in the production or delivery in the supply chain. This may affect delivery of the final product. Goods may also be damaged or pilfered in the course of shipment and this will result in product return which results in reverse logistics.

The last reason is due to expiration, national supervisory requirements needed to destroy, recycle and also to recover manufactured goods (Vlachos & Deckker, 2003). Mukopadhyay and Setopurto (2004) state that in industrialized countries, a product recall can be accessible in two ways: one is through the deliberate certification, obligatory recall; another is through compulsory certification, a voluntary call.

Empirical Review

Numerous studies involving reverse logistics have been done both locally and globally. Somuiywa and Adebayo (2014) did an empirical study on the effect of reverse logistics objectives on economic performance of food and beverages companies in Nigeria. The study established that firms were effective in using reverse logistics to reduce total logistics cost, advance customer fulfillment, and also augment competitive benefit. The study recommended that for reverse logistics to be successful, top management must guide and support its implementation. Waithaka (2012) studied the reverse logistics practices in medical supplies by looking at the case of Kenya Medical Supplies Agency (KEMSA).The study found out that the adoption of reverse logistics practices at KEMSA was low, however it was also observed that there was a positive relationship between reverse logistics and operational performance of the agency.

Ongombe (2012) looked at the relationship between reverse logistics and competitive advantage in water bottling companies in Nairobi. The study concluded that indeed there was a strong relationship between reverse logistics and competitive advantage. Companies that implemented reverse logistics practices benefitted from increased profit margins due to reduction in production costs and increased sales. Lagat (2012) examined reverse supply chain management practices in large scale manufacturing firms in Nairobi. His study observed a significance influence of implementation of reverse logistics to organizations' financial performance. Gitau (2010) did another study on the effects of reverse logistics on performance of East African Breweries. This study found a relationship between the two.

Muttimos (2014) did a study on the relationship practices between reverse logistics and organizational

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performance of manufacturing firms in Kenya. The study concluded that manufacturing firms in Kenya have adopted reverse logistics practices to appreciable levels. The study recommended that the management of manufacturing firms consider putting in place targeted measures intended to spur adoption of reverse logistics practices. Kabergey and Richu (2015), in their study of effect of reverse logistics on operational performance of sisal processing firms in Nakuru County revealed that product recovery and product re-use both had positive effect on operational performance of sisal processing firms in Nakuru County. The researchers recommended that management of processing firms should look at reverse logistics as a strategy to achieve competitive advantage and manage it strategically just like any other key management area.

METHODOLOGY

This research project embraced a descriptive cross sectional research design. This is a method of collecting information by interviewing or administering a questionnaire to a sample of individuals (Orodho 2003). The population of this research project encompassed of motor automobile dealers who sell new motor vehicles and motor vehicle spare parts within Kisumu County. The population targeted in this research comprised of staff in procurement, marketing, stores and finance departments. This researcher used primary data. The study used structured questionnaires to collect data. The questionnaires were self-administered by the researcher through the drop and pick technique. The completed questionnaires were edited for completeness and consistency. Quantitative data collected was analyzed by the use of descriptive statistics using Statistical Package for the Social Sciences (SPSS Version 21).

FINDINGS

Examination of the influence of product reuse on customer perception of motor vehicle dealers in Kisumu County

The first objective was to examine the influence of product returns on customer perception of motor vehicle dealers in Kisumu County. For this study, variables were rated using a 5 point Likert scale ranging from 1= Not at all to 5= strongly agree and were analyzed using mean scores. A closer mean to 5 meant a stronger agreement to the research question. A score of below 2.5 indicated disagreement with the research question. A score of around 2.5 indicated uncertainty on the part of the respondent. The results are summarized in Tables below.

Table 1: Influence of product returns on customer perception of motor vehicle dealers in Kisumu County

Statement	Mean	Std. Deviation
This Firm occasionally engages in product returns	4.2	.816
Errors during packing of motor vehicle spares	4.32	.764
Product damages during transport affect our relationship	4.4	.955
This organization has a policy on product returns	4.32	.971
Our company experiences high rates of product returns	3.77	1.36
Aggregate score	**4.22**	**0.97**

N=40

The results in Table 1 indicated that the biggest influence on customer perception through of product return to was due to product damages during transportation (mean=4.4). The respondents also

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agreed that their organizations had a policy to guide product returns (mean=4.32) an observation which ranked at the same tie whereby majority of firms experienced errors during packaging of motor vehicle spare parts (mean=4.32). It was also observed that most of the motor vehicle dealers engage in product returns, thus giving a mean of 4.2. Another finding was that these companies were experiencing high rate of product returns (mean=3.77). These findings confirm that product majority of the companies engaged in product return reverse logistics practices. The findings of this study are in tandem with a study carried out by Zhaoanjian and Yang (2014) which in its findings observed that automotive returns and components are of significance in implementation of automotive reverse logistics.

Table 2: Influence of product remanufacture on customer perception of motor vehicle dealers in Kisumu County

Statement	Mean	Std. Deviation
This company has a written policy on product remanufacture	4.125	1.136
Customer complains arising from poor quality can affect customer	4.4	0 .77
We send back defective parts to the original source for remanufacture	4.32	0 .97
We send products back to for remanufacturing so as to comply with legal requirements	4.57	0 .78
Remanufactured spares and parts from this company compete on the same level with new parts	4.3	0 .91
Aggregate score	**4.32**	**0.915**

N=40

Majority of the respondents indicated that they send back products to manufacturers so as to comply with legal requirements (mean=4.57). They also were of the opinion that customer complaints arising from poor quality can affect their relations with their customers (mean=4.4). Majority of the dealers also indicated that they take back defective parts back to their manufacturers (mean=4.32). In terms of similarities between remanufactured parts and new parts, the respondents were in agreement that both can compete at the same level (mean=4.3). In terms of having a written policy regarding product remanufacture, majority of respondents acknowledged having them (mean=4.125). These findings confirmed that most of the firms carry out product remanufacture reverse logistics practices. The results of this finding are in consonance with one by Gitau (2014) where 83% of the respondents indicated that remanufacture of products played a key role in reverse logistics. They were also similar to one study by Shumon (2010) which revealed that remanufacturing is associated with benefits to the consumers such as high quality products and reduced product prices.

Table 3: Customer perception of motor vehicle dealers in Kisumu County

Statement	Mean	Std. Deviation
Reverse logistics practices help in enhancing relations with our suppliers	4.3	.96

Through reverse logistics practices we have seen enhanced relations with our customers	4.32	.88
As a customer product safety is paramount to me	4.75	.43
Through reverse logistics practices our company's image is enhanced	4.5	.64
If handled properly reserve logistics can increase customer satisfaction	4.7	.51
Aggregate score	**4.5**	**0.689**

N=40

The results for Table 3 indicated that majority of respondents see product safety as being an important consideration in relation to customer perception (mean= 4.75). The same organizations also felt that if reverse logistics was handled properly, then customer satisfaction was bound to increase (mean=4.7). In terms of boosting the company's' image, the majority of the respondents felt that through reverse logistics could be achieved (mean=4.5). In terms of managing relations with partners across the supply chain, majority of the respondents indicated that there could be experienced enhanced relationships with suppliers (mean=4.32) and also enhanced relationships with customers (mean=4.3).

Hypothesis testing

H_1. Product return influences customer perception of motor vehicle dealers in Kisumu County.

The results (β=0.415;$p \leq 0.05$), indicated that there is a significant relationship. This meant that as it stands, product returns, can influence customer perception among motor vehicle dealers in Kisumu County. As such the alternative hypothesis was as accepted. These results were similar to the findings by Somuyiwa and Adebayo (2014) who found out that product returns had a significant relationship of (0.627≤ 0.05), on economic performance.

H_2. Product remanufacture influences customer perception of motor vehicle dealers in Kisumu County

The results (β=0.347; $p \leq 0.05$), indicated that there is a significant relationship. This meant that as it stands, product remanufacture can influence customer perception among motor vehicle dealers in Kisumu County. As such the alternative hypothesis was accepted. These results contradict those of Khadija (2015) which showed an insignificant value of (β=0.415; $p \geq 0.05$) of remanufacturing on operation performance.

SUMMARY

The first objective of the study was to examine the influence of product return on customer perception of motor vehicle dealers in Kisumu County. From the results obtained it was evident that most of the organizations engaged in product returns since they also had product return policies. These dealers also experienced errors in packaging which necessitated product returns to a great extent. The companies also indicated that because of high product returns, their relationship with customers was being affected. It was also observed that a majority of firms do engage in product returns due to quality related issues and also due to obsolescence and end-of-life reasons.

The second objective was to establish whether product remanufacture influences customer perception of motor vehicle dealers in Kisumu County. According to the findings of this study, majority of the respondents' organizations had written policies on product remanufacture. The same respondents also observed that poor quality of spare parts can lead to customer complaints which may

affect the customers. Majority of the respondents also sent back defective parts to the original source for reworking. The same majority of respondents also felt that remanufactured products could compete at the same level with new spare parts in the market.

CONCLUSIONS

Based on the findings of this study it was found out that errors during packing motor vehicle spared contributed the most to product returns. This was been seen to be a reason to affect relationships between the motor vehicle dealers and their customers. Thus the dealers should thus find ways of minimizing incidences of product returns by reviewing their quality control and quality assurance procedures throughout the supply chain.

It was also observed from the findings that product remanufacture has a big influence on customer perception. Organizations should as such ensure that since defective products are usually sent to the point of origin, the same should be done in a manner that assures the customer of compensation in a timely and cost effective manner.

Recommendation for further study

Further studies should be conducted on the key influencers of reverse logistics practices. Similar studies should be done on reverse logistics practices among motor assembly companies on the environment.

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