THE EFFECT OF PURCHASING ON PRODUCT DEVELOPMENT FOR BEVERAGE MANUFACTURING FIRMS IN NAIROBI, KENYA

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DECLARATION

I declare that the work contained in this project is my original work and has not previously, in part or in its entirety, been presented at any other university for assessment or award of degree.

Signed …… Date ……..

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D61/80779/2015

This project was submitted for examination with my authority as the university supervisor.

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DEDICATION

I dedicate this project first and foremost to God almighty for the outpouring of grace upon my life for speedy completion of this project.

ACKNOWLEDGEMENT

I would like to thank God, almighty, for enabling me to complete this study. I would also like to appreciate my supervisor Michael K. Chirchir for his patience, guidance and support through the various stages of this study. Further acknowledgement goes to my brother Abdisalam Abdullahi and dear wife: Sara Ahmed for their support.

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ABBREVIATION AND ACROYNMS

CC	Cost Competence
DC	Delivery Competence
EC	Environmental Protection Competence
FC	Flexibility Competence
GDP	Gross Domestic Product
GRN	Goods Received Note
GSCM	Green Supply Chain Management
IEA	Institute of Economic Affairs
IS	Information System
JIT	Just in Time
KNBS	Kenya National Bureau of Statistics
KRA	Kenya Revenue Authority
KTDA	Kenya Tea Development Agency
LPO	Local Purchase Order
NP	New Product
NPD	New Product Development
QC	Quality Competence
R&D	Research and Development
RDT	Resource Dependence Theory
SSM	Strategic Supplier Management
TPC	Theory of Production Competence
TTM	Time-to Market

ABSTRACT

The ever changing customers tastes and preferences and growing demand for better, quality and superior products puts companies in dilemma of sustainable profit margins. Many manufacturing companies have experienced complex challenges which are precipitated by change in technology. This study set to determine the effect of purchasing on product development for beverage manufacturing firms in Nairobi, Kenya. To achieve this, the specific objectives included: establishing the extent to which purchasing function is involved in development of new products development and determining the effect of purchasing on new product development for beverage manufacturing firms in Nairobi, Kenya. The researcher applied descriptive survey design in carrying out the research. The study targeted 38 beverage manufacturing firms in Nairobi and its environs. The study relied on primary data collected using questionnaires. The study applied SPSS in analyzing data collected. The findings of the analyzed data indicated that there were no stock-outs resulting from late supplier delivery and this affected new product development to a large extent. Transparency, honesty, integrity and professionalism of purchasing staff was emphasized to a great extent as their means were above 4.0, the firm had clear and standardized purchasing procedures in place to a large extent with mean values being above 4.4. Vendor- supplier managed inventory system existed in the firm to a large extent. Supplier delivery reliability influenced new product development to a large extent with mean values of 3.8, purchasing procedures and policies had improved time to market of new product to a large extent as mean was above 4.2, supplier delivery reliability was significant at 5% level of significance as it had p-values of below 0.05. Competence of purchasing employees had significant effect on product development as the p value was 0.029. Purchasing procedures and policies significantly contributed towards product development as the p- value was 0.024. Purchasing IS has significant effect on product development as the p values 0.021. The study concluded that suppliers provided access to unique assets and resources. Cost savings were realized to a large extent through supplier delivery reliability, training of staff was a continuous process, purchasing policies and procedures informed decision making, technology was part of the strategy in new product development to a large extent and purchasing affected new product development. The study recommends that procurement departments of all beverage manufacturing firms and other companies operating in Kenya should largely embrace just-in-time approach in service delivery to enhance new product development. The top management of beverage manufacturing companies needs to raise deep concerns on staff's personal academic development. Beverage manufacturing firms in Kenya embrace the best technology practices in their respective companies to enhance new product development. The limitation of the study was that the researcher feared that some respondents may not be willing to share information that they deem as confidential and they may be reprimanded by their superior. The researcher further foresaw that some respondents may not fill the research instrument and return it in time, to curb this; the researcher got contacts of the respondents and kept reminding them to fill the research instrument in an effort to increase the response rate. The study suggests further studies in other sectors for example the public sector where efficiency and effectiveness is an issue. Similar other studies can be done among firms listed on Nairobi Security Exchange NSE by selecting specific counters or all the listed firms.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

In the recent past purchasing and supply chain management function has shown improvement and gained prominence in the role they play in product development. Many manufacturing companies have moved from seeing purchasing function as one of the tactical support but rather as a strategic capability that contributes to the product development and the overall goal (Ellram & Carry, 1994). Both the academics and practitioners agree on the efficiency and effectiveness of a supply chain management which can results to the sustainable competitive advantage, but little empirical research on the optimal design and fashioning of purchase function to achieve these benefits (Cousins, Lawson, & Squire, 2006). Monczka, Trent and Handfield, (2002) discussing the configurations of purchasing function in manufacturing support, buying price, integrated strategic sourcing, consolidation and supply chain management failed to give tangible empirical evidence on the role of purchasing function in product development.

Product development is a very critical process to companies especially manufacturing companies. Corswant and Fredriksson, (2002) noted that most of the auto manufacturers in order to cope with the rapid technology development they seek new organizational forms of interacting and incorporating suppliers in developing new products and enhancing on the existing ones with the key objective of production cost reduction. Involvement of suppliers in product development through a purchasing function enhances product acceptance to the market, (Fredrik von Corswant, 2015). Dubois and Gadde, (2000) observed that many companies do not take full advantage of buyer-supplier cooperation utilizing external resources in adding value to purchasing function. It still

remain a big challenge in developing and managing long-term buyer-supplier relationships which play very important role in product development, (Bemelmans, Voordijk, Vos, & Buter, 2012). Purchasing function therefore has a large impact on the product development through contribution of suppliers' efforts, (Schiele, 2007).

Product development issues are complex by nature and very involving in any manufacturing company that requires full support of purchasing function (Poissonnier, 2017). Development of better technology advanced products has become an inter-organizational process involving many players geographically dispersed in different manufacturing sites, (Contractor, Kumar, Kundu, & Pedersen, 2010). The more geographical distant the players in product development are the more complex and challenging is to develop a new product, (Narasimhan & Nair, 2005). According to Kauppi, Brandon- Jones, Ronchi, and Van Raaij, (2013), facilitating any serious product development necessitates both a proficient purchasing function and advanced supplier integration tools. On the other hand it has been argued that distant purchasing and dispersed geographical players in new product development (NPD) may extend lead times which in turn have negative effect on time-to-market (TTM), (Bengtsson & Berggren, 2008).

Liu, Chaminade, and Asheim, (2013), for companies to remain competitive and relevant there must be constant NPD, improvement on old products to serve additional purposes and improvement in quality to make it super product. Further, there is need to co-locate and integrate key processes, activities and knowledge in product and manufacturing processes through a purchasing function. Thus, further analysis on the role of purchasing

function in local and global purchasing for new product development is interesting and required, (Ulrich & Ellison, 2005).

1.1.1 Purchasing

Purchasing and procurement are mostly taken to mean the same, although purchasing has been presented to mean actual buying while procurement given a broader meaning, (Waters, 2009). Purchasing is the management of the external resources of a company in a supply chain ensuring effective and efficiency of supply of services, goods, knowledge and capabilities that runs, manage and maintains primary and support activities of the company, (Weele, 2012). Purchasing can be into broad categories of small and large purchases based on various characteristics that include economic value, volume, technological complexity, specificity, essentiality, variability and fragility, (Gonzalez-Benito, 2002).

Small purchase may involve machine parts, office supplies which are infrequent or stationeries, office machine repairs, auto parts and miscellaneous inform of both services and goods. While large purchases may be inform of large dollar amount, high volume in quantity, more specific, more frequent usage, and anticipatory use. The predominant difference in small and large purchase is the value of items, frequency of usage and amount in quantity required, (Parikh & Joshi, 2005). Parikh and Joshi, (2005) further argue that purchases both small and large follow a standardized process that involve: requisition by end users, approval from section head, approval from purchasing and finance sections, subsequent sourcing of quotations and issue of local purchase order

(LPO) to supplier, acknowledgement of the order and order fulfilment, order receiving into the firms' stores and warehouses and lastly issuing of the materials to the end users.

Ramsay, (2001) pausing a valid question on strategic irrelevance of purchasing for years resurrecting and becoming the most important function for the future of the company. Purchasing function has undergone tremendous changes over time, majority being induced by factors outside the organization, (Macbeth & Ferguson, 1994). Companies have been therefore forced to operate within the structure, roles and operations of the purchasing department. With the pressure of reducing costs and producing quality products, purchasing has changed its role form just buying goods and services to full sourcing. Purchasing has assumed full partner status to other departments like marketing, manufacturing and engineering. It is therefore worth noting that majority of the companies are confronted with myriad of challenges that include intense competition, new technologies, fragmented customer markets, scarce sources of supply, fluctuating interest and exchange rates and costly regulations, (Humpreys, P. et al., 1998). They further state that forces in terms of challenges confronting companies have clearly shown the significance of the purchasing function and most importantly elevated the visibility and strategic importance of purchasing.

Purchasing as a strategic function now has attached more significance importance to strategic supplier management (SSM) where a pool of suppliers that companies rely on are reduced. Consequently over 40 years now the old purchasing has evolved itself from what it used to be known as tactical/operational and to a great extend clerical function to a much important strategic function. Shapiro (2006) argues that the traditional view of

purchasing was more on adversarial model commonly targeting price reduction in purchased goods and services which was its key or primary goal.

Bruno (2017), writing on the new role of purchasing in managing extended enterprise argued that most manufacturing companies currently concentrate on the key areas or value chain that brings much value or in essence that controls the success factors. He further states that since purchasing function has become very strategic it is network based quickly transforming the value chain to meet the market expectations and the existing constraints before the competitors. According to Bruno (2017), purchasing must evolve and move from one-2-one relationship to ecosystem approach of relationships which is community based with value creating vision. In regard to this, purchasing function can therefore be rated on the axis of innovation and axis of transformation.

1.1.2 Product Development

Product development refers to a complete process of innovation and creativity of coming up with a superior quality product or service that offers numerous solutions, (Cadden & Downes, 2013). Von Corswant and Tunalv (2002), highlighting on the importance of product development and collaboration with suppliers concluded that this relationship is complex and more multifaceted. They further noted that internal organization of suppliers towards production, product development process and the cooperation between suppliers and manufacturers is of crucial importance to the success of the NPD process. Handfield and Lawson (2007), in coming up with a complete new product or service, i.e. NPD process is the initiative of both the suppliers and the manufacturers who directly get

involved in five different phases that include: strategy, concept, development, pilot and production.

Product development is a very important phenomenon to most companies especially auto manufacturers who seek new organizational ways of interacting with suppliers in coming up with new quality product, (Corswant & Fredriksson, 2002). According to Melkas and Harmaakorpi (2008), significant source for product development is knowledge and information which is extracted from external partners especially suppliers. The flow of data which gives meaning in terms of knowledge plays a pivotal role. Knowledge with the meaning of state of ideas, concepts, facts, data and techniques in most cases generates the new product idea, (Court, 1997).

Conventional thinking that is challenged through successful inputs from external actors spur creativity resulting in development of new products. Grunert et al., (2005) noted that through successful new product development and its subsequent launch, increases company's market orientation ability and responsiveness to changing market needs. Carlile (2002), asserts that in product development there is extensive assessment and sharing of knowledge across organizational boundaries which takes into considerations whom to involve in information sharing and how configuration of knowledge shall be done.

Successful product development process requires information that must cross the lines between context of technology and context of consumption (Kristensen, 1992). It is worth noting that translating good information which is need-related into better product responses is extremely valuable in product development processes. The knowledge context that each company has may influence its product development activities. Others

may be influenced by management activities towards external inputs that are crossing the organization's boundaries, (Poul H. & Kristin B., 2009). The critical factors that influence the entire process include the collaborative atmosphere and the actors' positional differences in the value network, (Grunert et al., 2005).

1.1.3 Beverage Manufacturing Firms in Kenya

According to Kenya National Bureau of Statistics (KNBS), (2016) the manufacturing industry in Kenya grew at 3.5% in 2015 and 3.2% in 2014 contributing to 10.3% to gross domestic product (GDP). Wesgro, (2015), Kenya food and beverages; sector overview, observed that soft drinks grew by 5.3% in 2015 and 4.8% in 2014. While fruit juices grew by 1.4% and 1.3% respectively. Among the statistics the beverages sector is equally represented. The beverages industry in Kenya constitutes a large portion in the manufacturing sector thus its significance in offering employment, collection of revenue through tax by the government and earning of foreign exchange through export of the products to foreign markets, (Institute of Economic Affairs, (IEA), 2002). This industry is very significant because of its linkages with other industries and sectors such as transportation, advertising and glass making. Kenya's bottled beverage is composed of carbonated soft drinks portion, the dominant market player being the Coca-Cola Corporation. Softa Bottling Company also having a share of the Kenyan market, (IEA, 2002). According to Giathi, (2003), the major players included: Picanna Juices, Kuguru Food Complex Limited, Delmonte and Coca-Cola. Currently there are many players in the Kenyan market, e.g. Nairobi Bottlers, Equator Bottlers, Kisii Bottlers, Beverages Services, Coastal Bottlers, (Excise Licensed Manufactures Report– KRA, 2017).

1.2 Research Problem

The ever changing customers tastes and preferences and growing demand for better, quality and superior products puts companies in dilemma of sustainable profit margins. Many manufacturing companies especially those producing medical equipment have experienced complex challenges which are precipitated by change in technology. Advancement in technology have rendered many products which were earlier selling like hot cakes to be obsolete. Therefore, research and development (R&D), creativity and innovations are highly required tools for manufacturing companies. As noted by Wynstra et al., (2001), a number of researchers have pointed to suppliers as crucial contributors of knowledge to the process of NPD in manufacturing companies. However, many studies on supplier contribution and the role of purchasing function in the process of developing a new product has majorly dwelled on automobile industry, (Poul et al., 2009).

The beverage industry in Kenya is arguably the second if not the first most significant industry and sector for various reasons that include: provision of employment, generation of revenue, foreign exchange earner, and most importantly generates the most needed drinks that supplements traditional tea and coffee, (Wesgro, 2015). Besides, beverages industry is important because of the pivotal role in terms of linkage between it and other industries like glass making, advertising and transportation, (The Institute of Economic Affairs, 2002). Beverages forming a larger portion in food sector therefore becomes very interesting and important object of analysis in broader aspects.

A number of studies have been carried out on purchasing function and product development in organizational supply chains. Trevor and Stephen, (2013), in their study on developing a business process for product development found business model that

strives in creating more holistic view of supplier integration which extends the scope beyond the individual firm-centric factors. The paper also establishing and developing importance of supplier collaboration, SC designing and the broader consideration of the value network. The study further established that strategic supply chain (SSC) relationships are important and viewed as competitive advantage. Interest in the concept is gaining momentum across many supply chains and industries including product development in engineering sector.

Jan Lith, Voordijk, Castano, and Vos, (2015) study on assessing maturity development of purchasing management in construction established results that demonstrated an increase in maturity of the strategic purchasing function. They further advise that the management of a purchasing function to have large influence on the overall performance of the prime contractors since they spent substantial part of their turnover on purchasing. The purpose of their study was therefore to measure the maturity of purchasing function and its subsequent role in construction industry. The case companies were found to have reached maturity in which they were coordinating supply chain activities well. Hugues, (2017) studying on progression of purchasing to strategic function level i.e. from purchasing to external resources management. After terming purchasing as a necessary evil, he went ahead to conclude that purchasing is a key function in the development of competitive advantages of companies. It is intrinsically important for companies to access better the resources than their competitors or ahead of them. Hugues further noted that companies are unable to innovate on their own thus requiring engagement of partners especially suppliers through purchasing function.

According to Kamenya (2014), on supplier evaluation and performance of large food and beverage manufacturing firms in Nairobi, Kenya; there is evidence of positive relationship between the supplier evaluation criteria and methods with firms' performance. Mumbi (2016), studying on green supply chain management and organizational performance of food and beverages manufacturing firms in Kenya concluded that there exists strong relationship between GSCM initiatives and organizational performance of beverages and food manufacturing firms. The study confirms the direct relationship and link of the greening of the supply chain and the ultimate performance of the firms in manufacturing. Koech, (2016) study on the role of purchasing consortia in the tea industry in Kenya and using case study of region five of the Kenya Tea Development Agency (KTDA) Ltd. The researcher concluded that most tea manufacturing firms in Kenya under the umbrella of KTDA have not fully realized benefits of purchasing consortia and thus why have not embraced the concept.

It is evident from the studies above that there lacks research on the effect of purchasing in product development for beverage manufacturing firms in Kenya. This study therefore is aimed at filling this knowledge gap by answering the research questions: To what extent is the purchasing function involved in new product development? What is the effect of purchasing on new product development for beverage manufacturing firms in Nairobi, Kenya?

1.3 Research Objectives

This research aimed to address the following three research objectives:

i. To establish the extent to which purchasing function is involved in development of new products for beverage manufacturing firms in Nairobi, Kenya.

ii. To determine the effect of purchasing on new product development for beverage manufacturing firms in Nairobi, Kenya.

1.4 Value of the Study

This study aimed hoped to contribute value in a number of ways. Firstly, it would be useful to policy makers especially the management of the manufacturing companies with the application of the findings and recommendations of the study to improve on the process of developing new product. The management would also realize the strategic role a purchasing function can play towards contribution to a competitive advantage every company desires to achieve. The best practices that would be established through this study would also inform the management on which way to effectively and efficiently improve their supply chain. The study therefore hoped to contribute value to policy development and management practice in the entire manufacturing sector.

Professionals and academicians would be in position to well understand major practical ways of generating value to companies through purchasing function. Besides, the study aimed to contribute knowledge to purchasing and supply chain management through literature review. The facilitation of theory building in line with the role of strategic purchasing function and its contribution to the overall success of the company especially manufacturing companies through constant innovation of new products. The study was therefore hoped to be used as reference material and point for other subsequent research work and studies.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter reviews existing literature on the various aspects of the topic that include: purchasing and NPD. It also looks at the theoretical framework and discusses several theories that support this line of argument. Various prepositions are discussed as they are depicting by conceptual framework and conclusion drawn through summary of studies and the research gap.

2.2 Theoretical Literature Review

Firms and companies in general operate in a wider and broader environment that poses both the opportunities and challenges. The opportunities and challenges are well explained through theories which strive to attach sense. With the advent of purchasing as the cost center and evolution of outsourcing as some of the initiatives of cost reduction in the companies, therefore it was important to develop theories that assist in defining the concepts. Purchasing and NPD process is therefore explained using two theories of resource dependence theory and theory of production competence.

2.2.1 Resource Dependence Theory

Teece, Pisano and Shuen, (1997) likens resource dependence theory (RDT) with dynamic capacities and approaches based on key competences which are crucial and useful and aid in understanding current and new mission of purchasing as a function. The theory is important in specific aspect as it postulate key ingredients of capacity and resources which are crucial for strategy and act as source of success to any development process in

this case NPD. The scarcity of resources leads to generation of various numerous risks one of them being supply security. This ideally is a great challenge to many manufacturing firms which for purchasing team their main goal is to secure their supply.

Hugues, (2017), argues that suppliers hold roughly 75 per cent of resources that the firm requires. He therefore recommends for any manufacturing firm to be successful especially in launching quality and superior products in the market timely, good workable supplier relations is paramount. The key function and role of purchasing is developing a defense mechanism of competitive advantages of firms, strategically managing external resources which are basically suppliers and their competences for a firm to achieve its stated vision. Companies are no longer able to innovate any serious product or service alone. They heavily rely on all stakeholders to achieve that. The performance of companies is intrinsically dependent on how best they can access the resources and utilize them optimally than their competitors. Hugues suggests of co-development and co-innovation with suppliers which should be a true integration of processes as compared to purchasing from suppliers.

2.2.2 Theory of Production Competence

Vickery, (1991) refers to the theory of production competence (TPC) as purchasing proficiency with rightful purchasing skills for the key purchasing processes through the supplier integration initiatives. He further states that it is the degree at which a specific company supports business strategy for the success of its processes. Kim and Arnold, (1993) defines theory of production competence as the degree of fit between competing priorities and strengths of specific manufacturing firms. Many manufacturing firms are

faced with a myriad of challenges when developing a new product. Avella and Vázquez - Bustelo, (2010), argues that theory of production should be applied exclusively as a measure of strategic manufacturing which helps firms to be competitive while ensuring capabilities are consistent with the market demands.

TPC continues to be relevant due to the extent of literature on the topic and its significant importance in linking the production competence and the business performance with final output. Production competence was seen to be the capability, preparedness or skills required for NPD process thus pursuing a business strategy of product-market specific, (Avella & Vázquez-Bustelo, 2010). This was arguably seen as higher business performance foundation for manufacturing firms. Gonza´lez-Benito, (2007), argues that purchasing is nothing but strategy alignment in form of product development and marketing of the superior new product. Schmenner and Vastag, (2006), state that production competence covers broadly fit that are between manufacturing capabilities and competitive priorities like flexibility competence (FC), environmental protection competence (EC), cost competence (CC), delivery competence (DC) and quality competence (QC).

2.3 Purchasing

Quintens, Pauwels and Matthyssens, (2006), purchasing is a multifaceted word that involves searching of the source where to obtain goods, services and other resources on any possible scale and which extends to the development and integration of supplier base. In trying to establish the critical role and the importance of supplier integration, Golini and Kalchmidt, (2011), explains through a report that gives evidence a negative impact

global purchasing has on inventory generally. They however went further to provide suggestion that the negative impact on inventory can be well addressed through full integration of suppliers. Mudambi, (2008) notes that the basic driver of innovation and new product development is efficient and effective supplier coordination and cooperation. Exploitation of potential capabilities strategically collaborating with supply chain partners in managing both inter- and intra-organization processes bringing about the most needed supply chain integration, (Flynn, Huo & Zhao, 2010). Sschiele, (2010), asserts that integration of suppliers results to better innovation performance in terms of new product development. In order for a manufacturing firm to harness innovation potential from suppliers, effective outsourcing should therefore be a priority which can easily be supported by supplier integration, (Bengtsson, von Haartman & Dabhilkar, 2009). Supplier integration is the leverage of performance in NPD as it improves on time to market the new product, (Perols, Zimmermann, & Kortmann, 2013).

Competence of purchasing employees is key to new product development process, (Kauppi, Brandon-Jones, Ronchi & van Raaij, 2013). They further state that purchasing function is critical as it contributes heavily to the implementation of a business strategy. Managing integration and being at the core of implement business strategy, then it requires employees with better skills in purchasing and of high level of competence, (Luzzini & Ronchi, 2011). Employees' competence results to high purchasing capabilities which leverage on innovation of suppliers and thus birth of new product, (Schiele, 2010). Narasimhan and Das, (2001) stressing on the importance of purchasing proficiency and good practices contributes heavily on the better performance of manufacturing firms. In developing purchasing typology, (Cousins, 2006) stressed on the

purchasing function skills and employees levels of competence. Van Weele, (2009), the performance of supplier integration and the relationship between buyer-supplier largely depends on how skilled purchasing department is and the competence of the staff.

Green purchasing is a very important component in the process of innovation and new product development. Blome, (2014), buying goods and products that are environmentally sound is not an option for any manufacturing firm that prioritize rate of launching new product and TTM. New product development process for a manufacturing firm should be a process which takes into consideration measures that not only protects the environment but also add value, (Sterner, 2012). Green purchasing therefore should be compliant with both the aspects of environmental, economic and social considerations.

Just in time (JIT) approach is a philosophy that aims in creation of excellence in a supply chain converting the chain into value chain and a self-disciplined process, (Tatoglu, 2007). Further, he asserts that JIT approach has fundamental purpose of delivering the requirements just in good time when they are required to be processed. The philosophy therefore insists on low or no inventory stocking. Battistoni, (2013), did establish that full application of JIT philosophy has some economic benefits which range from improvement in efficiency of operations, reduction of wastes, and ultimately continuous improvement in a supply chain. In addition, he also established that the firms no longer incur holding costs, stock-out costs and obsolete.

2.4 Purchasing and New Product Development

Haartman and Bengtsson, (2015) large scale research studies and impact of global purchasing innovations of product concluded that NPD and innovation performance are

even rarer. They further question the effect of product innovation with the critical management of external knowledge. Their main objective and purpose of the study was to analyze empirically impact of purchasing globally, supplier integration and innovation. The main motive of supplier integration in NPD process is benefit on technology, cutting edge knowledge and competences, (Kotabe, Murray and Mol, 2008). Some of the effects of purchasing through supplier integration is the time taken to deliver new product on the market or TTM and the number of new products or services innovated within a period of time, (Monczka et al., 2005). Fawcett, Magnan and McCarter, (2010) when making his observations and subsequently offering advice to firms' management to integrate their purchasing function and optimally maximize it on the NPD process and the entire innovation chain. Schiele, (2010) supporting this narrative by confirming that integration of suppliers results to better innovation performance.

The product development has been viewed as the milestone and bloodline under which growth of both local and international companies thrive on. According to Keller and Kotler, (2006), innovation and product development aid companies in gaining competitive advantage, attracting and retaining customers as well as strengthening ties with their distribution network. When implementing a business strategy the purchasing function plays a pivotal role and it is at the core of implementation which requires proper supplier integration, (Kauppi et al., 2013). Ronchi and Luzzini, (2011) states that high purchasing skills is required for any superior performance in innovation to occur though noting that evidence from empirical studies showing some level of weakness. Schiele, (2010) further supporting the purchasing capabilities in leveraging innovativeness of suppliers. The performance of manufacturing firms heavily rely on purchasing practices

and proficiency in managing all the activities especially supplier-buyer relationship which results to optimal delivery of output, (Narasimhan & Das 2001). Cousins, Lawson and Squire, (2006) coming up with purchasing roles that featured the status, skills of the purchasing personnel, differences in in strategic involvement and internal integration.

2.5 Empirical Literature Review

Empirical review assist in understanding the true effect of purchasing on the process of new product development with main motive of benefiting on technology, cutting edge knowledge and competences, (Kotabe, Murray and Mol, 2008). Flynn, Huo, and Zhao, (2010) in their study of impact of integration to the performance of supply chain did observe that supply chain integration is truly the degree at which manufacturers collaborates strategically with all the players in the chain to collaboratively manage inter- and intra-organization processes. They further asserts that integration of suppliers through purchasing results to better performance including product innovation and that purchasing and NPD are synonymous in wide and broad aspects. Through supplier integration manufacturing firms have the opportunity of harnessing innovation potential, capabilities and skills which is direct resultant to new product development process improvement to TTM. The study looked at supply chain as a whole component and failed to discuss in specifics the role purchasing plays to achieve a firm's objective.

Kamenya, (2014) study on supplier evaluation and performance of large food and beverage manufacturing firms in Nairobi, Kenya. The main purpose of this study was to evaluate the importance of measuring the contribution of key suppliers towards manufacturing firms' performance. The researcher established that food and beverage

firms contact supplier evaluation exercise and that there is a strong positive relationship between performance and the supplier evaluation criteria. The key aspects considered include environmental consciousness of the supplier firm, employee capabilities, and price competitiveness which were found to be significant. Financial stability, quality issues, supplier organization culture, production capability, preference and reservation factors were found to be insignificant. The study falls short of indicating the importance of purchasing on the entire process of manufacturing food and beverage.

Using benchmarking approach in assessing maturity in development of purchasing function in construction industry, Van Lith, Voordijk, Castano & Vos, (2015), looked at the contribution of the purchasing to the prime contractor. The main purpose of their study was to establish the role purchasing department have to the overall success of a project since majority of their turnover is spent on purchasing. The major findings for this study is that there exist some maturity in terms of managing strategic relationships and smooth coordination of all supply chain activities. The study also noted the application of IT as playing a specific role too. The study also had as main shortcoming the failure by researcher to mention in broader terms the impact purchasing can have on innovation and even new product development.

Koech, (2016), examining how purchasing consortia contributes value to tea industry in Kenya and using Kenya Tea Development Agency Limited (KTDA) as case study. The researcher's key findings were most tea manufacturing firms are not benefiting from the value being generated from purchasing consortia as majority have not fully embraced the concept. However, it is also noted that the inequality among the expected members and the anticipated sharing of the benefits further complicates the whole process. The

shortcomings of this study include the failure of the researcher not comparing both the firms under KTDA and the ones that are not members of KTDA and also the true value purchasing function generates to the manufacturing firms in the process of new product development.

Mumbi (2016), study on the organization performance and green supply chain management in the food and beverage manufacturing firms in Kenya concluded that there exist a strong relationship between green supply chain initiatives and organizational performance of food and beverage manufacturing firms in Kenya. The study main purpose was to establish the extent to which food and beverage manufacturing firms have adopted green supply chain initiatives, identify challenges faced when adopting the initiatives and know how green supply chain practices contribute to firm's performance. The study however did not indicate the contribution of purchasing towards manufacturing of food and beverage products.

Poissonnier (2017) looking at how purchasing became a strategic function – advancing to the management of external resources from the normal buying. The main purpose and objective of this study was to establish the capacity of purchasing in reduction of costs but most importantly how to manage the few resources in this global world of rare resources by giving purchasing a strategic direction. The study concluded that the scarcity of resources prompted many firms to consider the roles of several departments in their companies. The department and function with most interest was therefore purchasing. The researcher further explained that purchasing through supplier integration- become the best customer to your supplier may create extensive value to

your company. The study fail short of operationalization of some of the factors that specifically results to the real value through purchasing.

2.6 Conceptual Framework

In this study, the independent variables are supplier deliver reliability, competence of purchasing employees, purchasing procedures & policies and purchasing IS while time to market & quality of new product is the dependent variable.

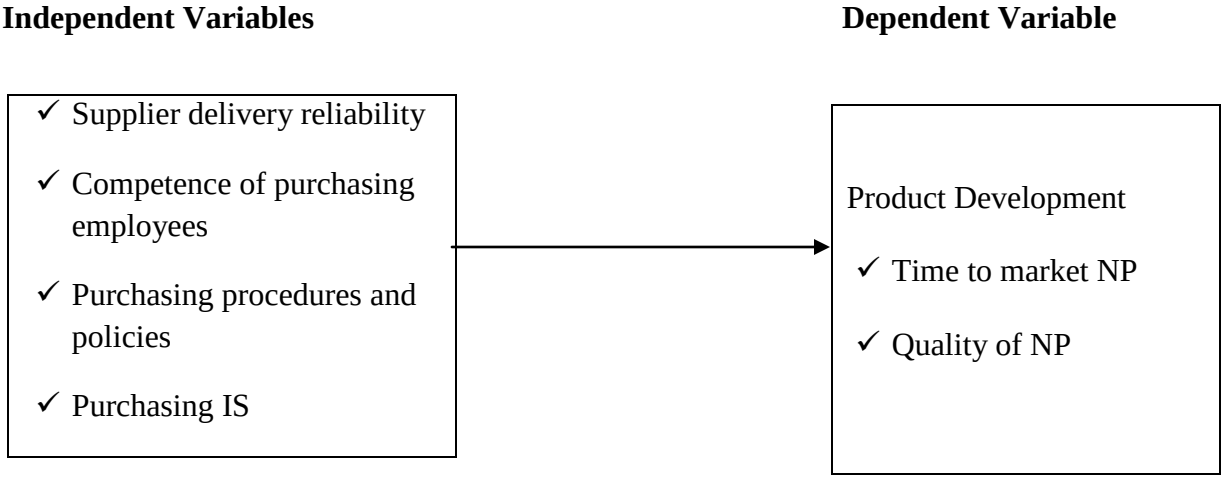

Figure 2. 1: Conceptual Framework
Source: Researcher, (2017)

The study hypothesis is;
H0: There is no relationship between purchasing and new product development for beverage manufacturing firms in Kenya.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses approaches, procedures and steps to follow in accomplishing the study. It looks at design of the research, population under consideration, sampling methods and the size of the sample. The section sets and informs on the procedures of collecting data, instrument that will be employed, how validity and reliability of the data was tested as well the techniques of analyzing data are discussed.

3.2 Research Design

The researcher applied descriptive survey design in carrying out the research. Descriptive survey aids one in data collection, shortening the process and responses with the aim of using the analysis in drawing up the interpretation. It brings out the correct features of variables under consideration without necessarily changing their correct meaning, and also giving feedback to the study objectives and current status of the population. As supported by Tanur (2000), descriptive survey is capable of producing quantitative descriptions of aspects of the population most importantly the relationship between the variables under consideration.

3.3 Population

The population of this study was all the beverage manufacturing firms in Nairobi and its environs. According to Kenya Revenue Authority (KRA), (2017), there are thirty eight (38) registered and excise licensed beverages (soft drinks) manufacturers in Nairobi and

its environments. Since the population was small and easily accessible, a census was conducted.

3.4 Data Collection

The researcher aimed at collecting primary data from all the beverage manufacturing firms in Nairobi and within locality. The main tool for data collection was a questionnaire. The questionnaire had three sections; 1, 2 and 3. Section 1 had questions on the firm's profile. Section 2 had questions on the extent to which purchasing function is involved in development of new product for beverage manufacturing firms. Section 3 had questions that probe the effect of purchasing on new product development for beverage manufacturing firms in Nairobi.

The researcher considered two respondents from each beverage manufacturing firm. The two respondents were either supply chain mangers or their equivalents i.e. operations mangers and head of research and development or innovation and production section. The choice of the respondents was informed by the fact that, these specific individuals are knowledgeable enough in these specific sections and thus issues being researched on got correct and valuable responses. The questionnaire was administered through drop and pick later method.

3.5 Data Analysis

The data collected was prepared by means of coding the sorted data for purposes of appropriateness in the analysis process. The researcher utilized frequencies in presenting the manufacturing firms profile status and also in establishing the extent to which

purchasing function is involved in development of new product. Regression analysis was used in determining the effect of purchasing on new product development. The regression model was as follows: $Q = a + b_1 x_1 + b_2 x_2 + b_3 x_3 + b_4 x_4 + e$. Where: Q = Quality of NP; TIM = time to market; a = the Q intercept when x is zero; b_1, b_2, b_3 and b_4 = regression coefficients of the independent variables; x_1 = supplier delivery reliability; x_2 = competence of purchasing employees; x_3 = purchasing procedures & policies; x_4 = purchasing IS and e = error term.

Table 3. 1: Data Collection and Analysis Summary

OBJECTIVE	**SECTION**	**ANALYSIS**
Firm Profile	Sec 1	Descriptive Statistics
Obj 1: To establish the extent to which purchasing function is involved in development of new product for beverage manufacturing firms.	Sec 2	Descriptive Statistics
Obj 2: Effect of purchasing on new product development for beverage manufacturing firms in Nairobi.	Sec 3	Regression Analysis

Source: Researcher, (2017)

CHAPTER FOUR:DATA ANALYSIS, RESULTS AND DISCUSSIONS

4.1 Introduction

Chapter four presents results of the analysis as per the data collected from the field. The study sought to examine the extent to which purchasing function is involved in development of new products for beverage manufacturing firms in Nairobi, Kenya, and to determine the effect of purchasing on new product development for beverage manufacturing firms in Nairobi, Kenya. The researcher relied mainly on primary data collected using questionnaires. The collected primary data was sorted and coded into SPSS software and the analysis was done using both descriptive and inferential statistics. The findings are presented using Frequency Tables.

4.1.1 Response Rate

The researcher targeted 38 beverage manufacturing firms in Nairobi and its environs which formed the sample size. Out of the 38 questionnaires distributed to these respondents, 31 of them were dully filled and returned to the researcher. This represented a response rate of 82% as indicated in Table 4.1.

Table 4.1: Response Rate

	Frequency	**Percentage**
Response	31	82
Non Response	7	18
Total	**38**	**100**

Recommendations by Babbie (2004), indicate that return rates of over 50% are acceptable to analyse and generalize finding to the entire population of interest, return rates lying between 60% to 70% is recommended as being very good while those in the ranges of over 80% are termed as excellent. Therefore, the response rate in regard to the current study was sufficient for analysis and presentation of the findings.

4.1.2 Validity and Reliability Test

The researcher conducted pilot testing to test the validity and reliability of the research instruments. A Cronbach Alpha was computed and benchmark of 0.7 was established, where a coefficient of above 0.7 indicated reliability of the instruments used in the study. The findings are indicated are shown in Table 4.2.

Table 4.2: Validity and Reliability Test

Variable	No. of Items	Cronbach Alpha
Supplier Delivery Reliability	5	0.775
Competence of Purchasing Employees	5	0.872
Purchasing procedures and Policies	5	0.783
Purchasing IS	5	0.817
Product development	8	0.732

Table 4.2 shows how reliability and validity of the research instruments was measured. From the findings, supplier delivery reliability had Cronbach coefficient of 0.775, competence of purchasing employees had 0.872, purchasing procedures and policies had 0.783, purchasing IS had 0.817 and product development had 0.732. All the study

variables had Cronbach coefficients above 0.7, showing the research instruments were reliable as required by Cronbach (1951).

4.2 Beverage Manufacturing Firm Profile

The profiles of the beverage manufacturing firms are shown in subsequent sections**.**

4.2.1 Name of the Company

The study sought to examine the mane of beverage companies that took part in research. From the findings, several companies took part in the study with different sizes but had operations in Nairobi and it environ.

4.2.2 Company Ownership

The ownership structures of the beverage firms studied by the researcher are shown in Table 4.3.

Table 4.3: Company Ownership

Variable	Frequency	Percent
Local	26	83.9
Foreign	5	16.1
Total	**31**	**100.0**

Most of the studied companies, 83.9% were owned locally. Foreign ownership stood at 16.1%. This shows that locals played a greater role in ownership of beverage manufacturing firms as compared to foreigners. There are several advantages of local

ownership including job creation and economic growth. A company dominated with foreign ownership repatriates the profit to mother country as compared to a locally owned company.

4.2.3 Position in Firm

The researcher sought to determine the positions held by respondents in their respective beverage manufacturing firms. Consider the findings in Table 4.4.

Table 4.4: Position in Firm

	Frequency	**Percentage**
Supply Chain Managers	19	61.3
Operations Managers	10	32.3
Others	2	6.5
Total	**31**	**100**

Table 4.4 indicates various positions held by the study respondents. From the findings, most of the respondents 61.3% were supply chain managers followed by operations managers at 32.3%. The study researcher included other positions in organizations that represented 6.5%. It can be seen that all positions in beverage manufacturing firms were involved in the study which shows that diverse information was obtained from respondents by the researcher.

4.2.4 Years of Experience

Results on the period that the respondents had worked in their respective organizations was ascertained as shown in the table 4.5: This was mainly collected for the purposes of establishing respondents experience and knowledge on the organization they worked in hence determine their suitability in providing data needed for the study.

Table 4. 5: Years in the Firm

	Frequency	**Percent**
Less than 10 years	12	38.7
10-20 Years	15	48.4
More than 20 Years	4	12.9
Total	**31**	**100.0**

From Table 4.5, a significant number of respondents 48.4% had worked in beverage manufacturing firms for 10-20 years. This was followed by 38.7% of the respondents who had been serving in their current organizations for less than 10 years. The least number of respondents 12.9% had worked for over 20 years. The period that employees have worked in a given organization represents knowledge, skills and competence. Employees who have worked in an organization for longer period of time are deemed to be more knowledgeable and skilled as compared to those whose years of service is limited.

4.2.5 Number of Employees

Data on the number of employees in each of the organization studied among the beverage manufacturing firms was ascertained as shown in the Table 4.6:

Table 4. 6: Number of Employees

	Frequency	Percent
Less than 20 years	10	32
21-50 Years	16	52
More than 50 Years	5	16
Total	**31**	**100.0**

Table 4.6 shows that most of the beverage firms 52% had 21-50 employees, followed by less than 20 employees at 32% and lastly more than 50 employees at 16%. The number of employees an organization is one of the measures of firm size in that large number of employees signifies large size. Most small firms have small number of employees.

4.2.6 Products

Various beverage products manufactured by respective firms are shown in Table 4.7.

Table 4. 7: Products

	Frequency	Percent
Sodas	10	32.3
Fruit Juice	19	61.3
Others	2	6.5
Total	**31**	**100.0**

From the findings, majority of the studied firms 61.3% manufactured fruit juices followed by sodas at 32.3% and other beverages at 6.5%. This shows that the study firms had diversified their products and therefore reduced risks inherent to their businesses. The firms did not just manufacture one type of beverage but had a portfolio of beverages.

4.2.7 Firm Market

The researcher was interested in knowing the markets that beverage manufacturing firms served. See Table 4.8.

Table 4. 8: Firm Market

	Frequency	Percent
Local	22	71
Foreign	4	13
Others	5	16
Total	**31**	**100.0**

As shown in Table 4.8, most beverage manufacturing firms 71% studied sold their products locally, followed by other markets at 16% and foreign markets at 13%. Markets are sources of revenues for firms. As most of the firms were locally owned, it follows that much of the market should be local as compared to the foreign markets.

4.3 Purchasing Department Involvement in New Product Development

This section set to determine the extent that purchasing function was incorporated in the process of developing new products for beverage manufacturing firms in Nairobi, Kenya.

The questions were to be answered on a pre-set five point likert scale that ranged between 1-5. The respondents were required to indicate the level of their agreement or disagreement on each of the statements. The researcher computed mean and standard deviations for the purpose of reaching a conclusion.

4.3.1 Supplier Delivery Reliability

Several statements on how supplier delivery reliability applied to different beverage manufacturing firms were identified. The respondents were required to give a detailed description of supplier delivery reliability so as to establish the extent that they rated the variable.

Table 4.9: Supplier Delivery Reliability

	Mean	Std Dev	Rank
There are no stock-outs resulting from late supplier delivery.	3.97	1.08	1
What is the extent to which your suppliers provide access to unique assets and resources?	3.81	1.35	2
Cost savings realized through supplier delivery reliability	3.71	1.10	3
Supplier delivery is excellent	3.55	1.21	4
Suppliers embrace just in time approach in delivery	3.23	1.06	5
Average Mean and Standard deviation	**3.65**	**1.16**	

From the findings, there were no stock-outs resulting from late supplier delivery and this affected new product development to a large extent with mean of 3.97 and standard deviation of 1.08. The study established that suppliers provided access to unique assets and resources to a large extent with mean of 3.81 and standard deviation of 1.35. Cost savings were realized to a large extent through supplier delivery reliability affected with mean of 3.71 and standard deviation of 1.10. Supplier delivery was excellent to a large

extent with mean of 3.55 and standard deviation of 1.21. However, suppliers embraced just in time approach in delivery to a moderate extent with mean of 3.23 and standard deviation of 1.06.

The average mean was 3.65, showing the supplier delivery reliability was involved in new product development to a large extent. This further shows that most of the respondents agreed on statements under review on supplier delivery reliability.

4.3.2 Competence of Purchasing Employees

Several statements on how competence of purchasing employees applied to different beverage manufacturing firms were identified. The respondents were required to give a detailed description of supplier delivery reliability so as to establish the extent that they rated the variable.

Table 4.10: Competence of Purchasing Employees

	Mean	Std Dev	Rank
Transparency, honesty, integrity and professionalism of purchasing staff are emphasized.	4.32	0.75	1
Purchasing employees' competence is key to new products innovation.	3.90	1.19	2
Training of staff is a continuous process.	3.74	1.18	3
Staffs personal academic development is a concern to management.	3.45	1.06	4
Employees are given study leave for their own personal growth.	2.40	1.12	5
Average Mean and Standard deviation	**3.56**	**1.06**	

From the findings, transparency, honesty, integrity and professionalism of purchasing staff was emphasized to a great extent with mean of 4.32 and standard deviation of 0.75. Purchasing employees' competence was key to new products innovation to a great extent with mean of 3.90 and standard deviation of 1.19. Training of staff was a continuous

process to a great extent with mean of 3.74 and standard deviation of 1.18. However, staffs personal academic development was a concern to management to moderate extent with mean of 3.45 and standard deviation of 1.106 and employees were given study leave for their own personal growth to a moderate extent with mean of 2.40 and standard deviation of 1.12.

On average, the mean was 3.56 with standard deviation of 1.06. This shows that the competence of purchasing employees was involved in new product development to a large extent.

4.3.3 Purchasing Procedures and Policies

Several statements on purchasing procedures and policies outlined for the respondents to indicate their level of agreement or disagreement in terms of the application of the policies in new product development in their firms. The study used a scale of 1-5 after which the measures of central tendency including mean and standard deviation were computed. The result s are as outlined in the Table 4.11.

Table 4.11: Purchasing Procedures and Policies

Purchasing Procedures and Policies	Mean	Std Dev	Rank
The firm has clear and standardized purchasing procedures in place.	4.42	.67	1
The firm has a clear purchasing policy in place.	4.23	.717	2
Purchasing procedures and policies are well communicated to the staff and suppliers.	3.94	.77	3
Purchasing policies and procedures inform decision making.	3.74	.96	4
The firm practice reverse logistics.	3.65	.95	5
Average Mean and Standard Deviation	**3.99**	**0.813**	

From the findings, the firm had clear and standardized purchasing procedures in place to a large extent with mean of 4.42 and standard deviation of 0.67. The firm had a clear

purchasing policy in place to a large extent with mean of 4.23 and standard deviation of 0.717. Purchasing procedures and policies were well communicated to the staff and suppliers to a large extent with mean of 3.94 and standard deviation of 0.77, purchasing policies and procedures informed decision making with mean of 3.74 and standard deviation of 0.96 and the firm practiced reverse logistics with mean of 3.65 and standard deviation of 0.95.

The average mean was 3.99 with standard deviation of 0.813, an indication that purchasing procedures and policies of most of the studied beverage manufacturing firms were involved in new product development to a large extent.

4.3.4 Purchasing Information System

Several statements on purchasing **i**nformation **s**ystem were outlined for the respondents so that they could select their level of agreement on how the statements applied to their beverage manufacturing company. The scope of response ranged from 1-5. Using the scale, the researcher computed mean and standard deviations

Table 4.12: Purchasing Information System

Purchasing IS	Mean	Std. Dev	Rank
Vendor- supplier managed inventory system exists in the firm.	3.74	0.89	1
There is electronic purchasing in the company.	3.65	0.98	2
Technology is part of the strategy in new product development.	3.53	1.09	3
Best technology practices are embraced in the company.	3.42	1.02	4
Free sharing of information along the supply chain.	3.32	0.91	5
Average mean and standard deviation	**3.53**	**0.978**	

Vendor- supplier managed inventory system existed in the firm to a large extent with mean of 3.74 and standard deviation of 0.89 which ranked first. There was electronic purchasing in the company to a large extent with mean of 3.65 and standard deviation of 0.98. Technology was part of the strategy in new product development to a large extent with mean of 3.53 and standard deviation of 1.09. To a moderate extent however, the best technology practices were embraced in the company with mean of 3.42 and standard deviation of 1.02 and free sharing of information along the supply chain with mean of 3.32 and standard deviation of 0.91.

The average mean and standard deviation was 3.53 and 0.978 respectively showing that purchasing information was applied in new product development in most of the studied beverage firms to a large extent.

4.4 Effect of Purchasing on New Product Development

The second objective of the study was to determine the effect of purchasing on new product development for beverage manufacturing firms in Nairobi, Kenya. Both descriptive and inferential statistics were used to achieve this objective. Descriptive statistics included means and standard deviation while inferential statistic included regression analysis.

4.4.1 Purchasing

The study sought to examine the extent which the independent variables purchasing (supplier delivery reliability, competence of purchasing employees, purchasing procedures and policies and purchasing information system) affected new product

development. The scale ranged from 1-5 where the respondents were required to indicate their level of agreement.

Table 4.13: Purchasing

	Mean	Std Dev	Rank
Purchasing Procedures & Policies	3.9	0.8	1
Supplier Delivery Reliability	3.81	0.98	2
Competence of Purchasing Employees	3.65	1.02	3
Purchasing Information System	3.52	1.03	4
Overall Mean and Standard deviation	**3.72**	**0.957**	

Supplier delivery reliability influenced new product development to a large extent with mean 3.81 and standard deviation of 0.98. Competence of purchasing employees had a large extent of effect on new product development with mean of 3.65 and standard deviation of 1.02. Purchasing procedures and policies affected new product development to a large extent with mean of 3.90 and standard deviation of 0.80 and purchasing information system greatly affected new product development to a large extent with mean of 3.52 and standard deviation of 1.03.

The overall mean was 3.72 with standard deviation of 0.957, showing that generally, purchasing affected new product development to a large extent. Purchasing procedures and policies was the most significant factor followed by supplier delivery reliability, competence of purchasing employees and lastly purchasing information system.

4.4.2 New Product Development

Several indicators of new product development were identified by the researcher. Respondents were requested to indicate the extent of their agreement on how the

indicators affected their firms. A Likert scale of 1-5 where 5 = to a very large extent, 4 = to a large extent, 3 = to a moderate extent, 2 = to a small extent and 1 = not at all was used.

Table 4. 14: New Product Development

Variable	Mean	Std Dev	Rank
Purchasing procedures and policies have improved time to market of new product	4.23	0.8	1
Supplier delivery reliability has improved the quality of new product	3.94	0.85	2
Purchasing procedures and policies have improved the quality of new product	3.94	0.77	3
Purchasing information system has improved the quality of new product	3.8	0.79	4
Competence of purchasing staff have improved the quality of new product	3.74	0.82	5
Purchasing Information system has improved the time to market new product	3.65	0.75	6
Supplier delivery reliability has improved the time to market new product	3.63	0.98	7
Competence of purchasing staff have improved time to market of new product	3.48	0.89	8
Overall Mean and Standard deviation	**3.8**	**0.83**	

The study established that; purchasing procedures and policies had improved time to market of new product to a large extent with mean of 4.23 and standard deviation of 0.80, purchasing procedures and policies had improved the quality of new product to a large extent with mean of 3.94 and standard deviation of 0.77 and supplier delivery reliability had improved the quality of new product with mean of 3.94 and standard deviation of 0.85.

The study further established that; purchasing information system had improved the quality of new product with mean of 3.80 and standard deviation of 0.79 and competence of purchasing staff had improved the quality of new product with mean of 3.74 and

standard deviation of 0.82. Purchasing information system had improved the time to market new product with mean of 3.65 and standard deviation of 0.75 and supplier delivery reliability had improved the time to market new product with mean of 3.63 and standard deviation of 0.98. Competence of purchasing staff had improved time to market of new product with mean of 3.48 and standard deviation of 0.89.

The overall mean was 3.80 with standard deviation of 0.83, an indication that the established indicators have affected new product development to a large extent in the studied beverages manufacturing firms.

4.4.3 Regression Analysis

The researcher conducted multiple regression analysis to establish the effect of purchasing on new product development. The findings of the Model summary, ANOVA and Regression coefficients are shown in subsequent sections.

The hypothesis of the study was:

H0: There is no relationship between purchasing and new product development for beverage manufacturing firms in Kenya. Based on the findings, the study rejects this hypothesis.

Table 4.15: Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	3.776	1.58		2.39	0.104
Supplier Delivery Reliability	0.038	0.0088	0.177	4.32	0.041
Competence of purchasing employees	0.231	0.0683	0.232	3.38	0.039
Purchasing procedures and policies	0.655	0.273	0.421	2.4	0.024
Purchasing IS	-0.021	0.019	0.211	-1.11	0.032

The established regression model from Table 4.15 therefore becomes:

Q = 3.776 + 0.038 X1 + 0.231 X2 + 0.655 X3 -0.021X4

Where: Q = Quality of NP; x_1 = supplier delivery reliability; x_2 = competence of purchasing employees; x_3 = purchasing procedures & policies; x_4 = purchasing IS and e = error term.

From the findings, holding all variables constant, new product development among beverage manufacturing firms would be at 3.776. A unit change in supplier delivery reliability would result into 3.8% improvement in product development. A unit increase in competence of purchasing employees would result into 23.1% increase in new product development. A unit increase in purchasing procedures and policies would result into 65.5% increase in new product development. A unit decrease in purchasing IS would lead to 2.1% increase in new product development.

Supplier delivery reliability was significant at 5% level of significance $p=0.041<0.05$. The t value was 4.32 which is greater than 1.96. Competence of purchasing employees had significant effect on new product development $p=0.039<0.05$ with t value 3.38 which is greater than 1.96. Purchasing procedures and policies significantly contributed towards new product development $p=0.024<0.05$ with t value 2.40 which is greater than 1.96.

Purchasing IS has significant effect on new product development p=0.021<0.05 with t value -1.11 which is less than 1.96.

Table 4. 16: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.891[a]	.793	.779	2.42906

From the Model Summary, the coefficient of determination R^2 is 0.779, showing that 77.9% of the variation in new product development is explained by the variation in purchasing (supplier delivery reliability, competence of purchasing employees, purchasing procedures and policies and purchasing information system). 22.1% is explained by other variables.

Table 4.17: ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	39.97	4	9.993	24.959	.000[b]
Residual	10.41	26	0.4004		
Total	**50.38**	**30**			

The ANOVA Table at 5% level of significance indicates F calculated as 24.959 while F critical (Numerator df = 4, denominator df= 26) is 2.717447. As F calculated is greater than F critical, this shows that the overall model fitness was a significant predictor of the relationship between purchasing and new product development. The p value p=0.000 is less than 0.05 which further supports the significance of the model and the relationship between the study variables.

4.5 Discussion of Findings

From the findings, there were no stock-outs resulting from late supplier delivery and this affected new product development to a large extent with mean of 3.97 and standard deviation of 1.08. The average mean was 3.65, showing the supplier delivery reliability was involved in new product development to a large extent. This further shows that most of the respondents agreed on statements under review on supplier delivery reliability. According to Mudambi (2008), the basic driver of innovation and new product development is efficient and effective supplier coordination and cooperation.

The study established that transparency, honesty, integrity and professionalism of purchasing staff were emphasized to a great extent with mean of 4.32 and standard deviation of 0.75. Purchasing employees' competence was key to new products innovation to a great extent with mean of 3.90 and standard deviation of 1.19. On average, the mean was 3.56 with standard deviation of 1.06. This shows that the competence of purchasing employees was involved in new product development to a large extent. These findings concur with Schiele (2010) who noted those employees' competence results to high purchasing capabilities which leverage on innovation of suppliers and thus birth of new product.

The findings of the study indicated that the firm had clear and standardized purchasing procedures in place to a large extent with mean of 4.42 and standard deviation of 0.67. The firm had a clear purchasing policy in place to a large extent with mean of 4.23 and standard deviation of 0.717. The average mean was 3.99 with standard deviation of 0.813, an indication that purchasing procedures and policies of most of the studied

beverage manufacturing firms were involved in new product development to a large extent.

Vendor- supplier managed inventory system existed in the firm to a large extent with mean of 3.74 and standard deviation of 0.89. There was electronic purchasing in the company to a large extent with mean of 3.65 and standard deviation of 0.98. The average mean and standard deviation was 3.53 and 0.978 respectively showing that purchasing information was applied in new product development in most of the studied beverage firms to a large extent. According to Battistoni (2013), full application of JIT philosophy has some economic benefits which range from improvement in efficiency of operations, reduction of wastes, and ultimately continuous improvement in a supply chain.

The overall mean of purchasing was 3.72 with standard deviation of 0.957, showing that generally, purchasing affected new product development to a large extent. This finding is in line with Flynn, Huo, and Zhao, (2010) who established that integration of suppliers through purchasing results to better performance including product innovation and that purchasing and NPD are synonymous in wide and broad aspects. Purchasing procedures and policies was the most significant factor followed by supplier delivery reliability, competence of purchasing employees and lastly purchasing information system. Purchasing procedures and policies had improved time to market of new product to a large extent with mean of 4.23 and standard deviation of 0.80, purchasing procedures and policies had improved the quality of new product to a large extent with mean of 3.94 and standard deviation of 0.77 and supplier delivery reliability had improved the quality of new product with mean of 3.94 and standard deviation of 0.85.

Supplier delivery reliability was significant at 5% level of significance $p=0.031<0.05$. Competence of purchasing employees had significant effect on product development $p=0.029<0.05$. Purchasing procedures and policies significantly contributed towards product development $p=0.024<0.05$. Purchasing IS has significant effect on product development $p=0.021<0.05$. All these findings indicate that purchasing significantly affected new product development. In trying to establish the critical role and the importance of supplier integration, Golini and Kalchmidt, (2011), explains through a report that gives evidence a negative impact global purchasing has on inventory generally. These authors went further to provide suggestion that the negative impact on inventory can be well addressed through full integration of suppliers.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a summary of the findings, conclusion and recommendations. Each of these aspects is in line with the study objectives. There are limitations that the researcher faced that are also indicated in this chapter. The suggestion for further research creates room for future researchers and scholars to explore the study further.

5.2 Summary of the Findings

The purpose of the study was to determine the effect of purchasing on product development for beverage manufacturing firms in Nairobi, Kenya. The study was guided by the following specific objectives: to establish the extent to which purchasing function is involved in development of new products for beverage manufacturing firms in Nairobi, Kenya and to determine the effect of purchasing on new product development for beverage manufacturing firms in Nairobi, Kenya. The researcher mainly relied on primary data collected via questionnaires and the analysis was done using both descriptive and inferential statistics. A summary of the findings is presented in this subsection.

5.2.1 Purchasing Department Involvement in New Products Development

The first objective of the study was to establish the extent to which purchasing function is involved in development of new products for beverage manufacturing firms in Nairobi, Kenya.

On supplier delivery reliability, the study established that there were no stock-outs resulting from late supplier delivery and this affected new product development to a large extent with mean of 3.97 and standard deviation of 1.08. Suppliers provided access to unique assets and resources to a large extent with mean of 3.81 and standard deviation of 1.35. Cost savings were realized to a large extent through supplier delivery reliability affected with mean of 3.71 and standard deviation of 1.10. Supplier delivery was excellent to a large extent with mean of 3.55 and standard deviation of 1.21. However, suppliers embraced just in time approach in delivery to a moderate extent with mean of 3.23 and standard deviation of 1.06.

Regarding competence of purchasing employees, the study established that transparency, honesty, integrity and professionalism of purchasing staff was emphasized to a great extent with mean of 4.32 and standard deviation of 0.75. Purchasing employees' competence was key to new products innovation to a great extent with mean of 3.90 and standard deviation of 1.19. Training of staff was a continuous process to a great extent with mean of 3.74 and standard deviation of 1.18. However, staffs personal academic development was a concern to management to moderate extent with mean of 3.45 and standard deviation of 1.106 and employees were given study leave for their own personal growth to a moderate extent with mean of 2.40 and standard deviation of 1.12.

In respect to purchasing information system, the study revealed that vendor- supplier managed inventory system existed in the firm to a large extent with mean of 3.74 and standard deviation of 0.89. There was electronic purchasing in the company to a large extent with mean of 3.65 and standard deviation of 0.98. Technology was part of the strategy in new product development to a large extent with mean of 3.53 and standard

deviation of 1.09. To a moderate extent however, the best technology practices were embraced in the company with mean of 3.42 and standard deviation of 1.02 and free sharing of information along the supply chain with mean of 3.32 and standard deviation of 0.91.

5.2.2 Effect of Purchasing on NPD

The second objective of the study was to determine the effect of purchasing on new product development for beverage manufacturing firms in Nairobi, Kenya. Both descriptive and inferential statistics were used to achieve this objective.

From the findings, supplier delivery reliability influenced new product development to a large extent with mean 3.81 and standard deviation of 0.98. Competence of purchasing employees had a large extent of effect on new product development with mean of 3.65 and standard deviation of 1.02. Purchasing procedures and policies affected new product development to a large extent with mean of 3.90 and standard deviation of 0.80 and purchasing information system greatly affected new product development to a large extent with mean of 3.52 and standard deviation of 1.03.

On new product development, the study found out that purchasing procedures and policies had improved time to market of new product to a large extent with mean of 4.23 and standard deviation of 0.80, purchasing procedures and policies had improved the quality of new product to a large extent with mean of 3.94 and standard deviation of 0.77 and supplier delivery reliability had improved the quality of new product with mean of 3.94 and standard deviation of 0.85. Purchasing information system had improved the quality of new product with mean of 3.80 and standard deviation of 0.79 and competence

of purchasing staff had improved the quality of new product with mean of 3.74 and standard deviation of 0.82. Competence of purchasing staff had improved time to market of new product with mean of 3.48 and standard deviation of 0.89.

From regression analysis, the study established that supplier delivery reliability was significant at 5% level of significance $p=0.031<0.05$. Competence of purchasing employees had significant effect on product development $p=0.029<0.05$. Purchasing procedures and policies significantly contributed towards product development $p=0.024<0.05$. Purchasing IS has significant effect on product development $p=0.021<0.05$.

5.3 Conclusion

On supplier delivery reliability, the study concludes that there were no stock-outs resulting from late supplier delivery and this affected new product development. Suppliers provided access to unique assets and resources. Cost savings were realized to a large extent through supplier delivery reliability.

With regard to competence of purchasing employees, honesty, integrity and professionalism of purchasing staff was emphasized to a great extent. Purchasing employees' competence was key to new products innovation. Training of staff was a continuous process.

On purchasing procedures and policies; the firm had clear and standardized purchasing procedures in place to a large extent. The firm had a clear purchasing policy in place to a large extent. Purchasing procedures and policies were well communicated to the staff and suppliers to a large extent. Purchasing policies and procedures informed decision making

In respect to purchasing information system, vendor- supplier managed inventory system existed in the firm to a large extent. There was electronic purchasing in the company to a large extent. Technology was part of the strategy in new product development to a large extent.

In view of the effect of purchasing on new product development, the study concludes that purchasing procedures and policies was the most significant factor followed by supplier delivery reliability, competence of purchasing employees and lastly purchasing information system. Purchasing procedures and policies had; improved time to market of new product to a large extent and the quality of new product to a large extent. Supplier delivery reliability had improved the quality of new product. Purchasing information system had improved the quality of new product and competence of purchasing staff had improved the quality of new product. The study further concludes that supplier delivery, competence of purchasing employees, purchasing procedures and policies and purchasing IS had significant effect on new product development.

5.4 Recommendations of the Study

The study recommends that the procurement departments of all beverage manufacturing firms and other companies operating in Kenya should largely embrace just in time approach in delivery to enhance new product development of their companies.

The top management of beverage manufacturing companies needs to raise deep concerns on staff's personal academic development. The human resource management of all organizations in Kenya whether private or public should give their employees study

leaves for their own personal growth. Competence of purchasing staff should be geared towards improvement of time to market of new product.

All companies carrying out operations in Kenya need to strengthen their purchasing procedures and policies by benchmarking with other blue chip firms in a similar industry. Beverage manufacturing firms in Kenya need to embrace the best technology practices in their respective companies to enhance new product development. There is need also for free sharing of information along the supply chain to enhance new product development.

5.5 Limitations of the Study

The study only sought to effect of purchasing on product development for beverage manufacturing firms in Nairobi, Kenya in the short run. The findings therefore ought not to be generalized to imply the same results over the long run.

The researcher feared that some respondents may not be willing to share information that they deem as confidential and they may be reprimanded by their superior. In response to this, the researcher sought for a permit from NACOSTI and carried an introduction letter from the university to assure the respondents the study is for academic purposes.

Some respondents may not fill the research instrument and return it in time, to curb this; the researcher got contacts of the respondents and kept reminding them to fill the research instrument in an effort to increase the response rate.

In the course of data collection process, the respondents were held up with their daily activities and collection of data implied interfering with their planned schedules. To overcome this, a drop and pick latter method was adopted in distribution of questionnaires. The contact details of respondents were established with an agreed grace

period of one week. The researcher did a follow using telephones and emails to remind respondents to fill up questionnaires.

5.6 Suggestions for Further Research

The current study examined effect of purchasing on product development for beverage manufacturing firms in Nairobi, Kenya; future scholars should carry out similar studies in other sectors for example the public sector where efficiency and effectiveness is an issue. Similar other studies can be done among firms listed on Nairobi Security Exchange NSE by selecting specific counters or all the listed firms. Regression analysis indicated that the predictor variables only explain 77.9% change in new product development in beverage manufacturing firms; future studies should cover other factors that account the remaining 22.1% change in new product development among these firms.

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APPENDICES

Appendix 1: Research Questionnaire

This questionnaire is designed to collect data on the Effect of Purchasing on Product Development for Beverage Manufacturing Firms in Kenya. This is entirely meant for academic purposes. All the information will be treated with confidentiality it deserves.

Section 1: Beverage Manufacturing Firm Profile

Q1. (a) Name of the Manufacturing firm (Optional)

……

(b) Company ownership:

a) Local [ ]

b) Foreign [ ]

c) Other [ ] Specify…….

(c) What position do you hold in the firm?

i. Supply Chain Manager [ ]

ii. Operations Manager [ ]

iii. Other [ ] Specify ……..

(d) Number of years the firm has been in operation.

(i) Less than 10 years [ ], (ii) 10 – 20 years [ ], (iii) More than 20 years [ ]

(e) What is the current number of employees in the firm?

(i) Less than 20 [ ], (ii) 21 – 50 [ ], (iii) More than 50 [ ]

(f) What range of products does your firm produce?

a) Sodas [ ]

b) Fruit Juice [ ]

c) Others [ ] Specify …….

(g) What is your firm's market?

a) Local Market [ ]

b) Foreign Market [ ]

c) Others [ ] Specify ……..

Section 2: Purchasing department involvement in new products development

Q2 (a): Please indicate with a tick (√) the extent to which the factors under supplier integration apply using a rating scale where 5 = to a very large extent, 4 = to a large extent, 3 = to a moderate extent, 2 = to a small extent and 1 = not at all.

NO	**Supplier Delivery Reliability**	**5**	**4**	**3**	**2**	**1**
1	What is the extent to which your suppliers provide access to unique assets and resources?					
2	Supplier delivery is excellent.					

3	There are no stock-outs resulting from late supplier delivery.					
4	Suppliers embrace just in time approach in delivery.					
5	Cost savings realized through supplier delivery reliability.					

Q2 (b): Please indicate with a tick (√) the extent to which the factors under competence of employees apply using a rating scale where 5 = to a very large extent, 4 = to a large extent, 3 = to a moderate extent, 2 = to a small extent and 1 = not at all.

NO	**Competence of Purchasing employees**	**5**	**4**	**3**	**2**	**1**
1	Purchasing employees' competence is key to new products innovation.					
2	Staffs personal academic development is a concern to management.					
3	Training of staff is a continuous process.					
4	Transparency, honesty, integrity and professionalism of purchasing staff are emphasized.					
5	Employees are given study leave for their own personal growth.					

Q2 (c): Please indicate with a tick (√) the extent to which the factors under green purchasing apply using a rating scale where 5 = to a very large extent, 4 = to a large extent, 3 = to a moderate extent, 2 = to a small extent and 1 = not at all.

NO	**Purchasing Procedures and Policies**	**5**	**4**	**3**	**2**	**1**
1	The firm has a clear purchasing policy in place.					
2	The firm has clear and standardized purchasing procedures in place.					
3	The firm practice reverse logistics.					
4	Purchasing procedures and policies are well communicated to the staff					

	and suppliers.					
5	Purchasing policies and procedures inform decision making.					

Q2 (d): Please indicate with a tick (√) the extent to which the factors under just in time approach apply using a rating scale where 5 = to a very large extent, 4 = to a large extent, 3 = to a moderate extent, 2 = to a small extent and 1 = not at all.

NO	**Purchasing IS**	**5**	**4**	**3**	**2**	**1**
1	Technology is part of the strategy in new product development.					
2	Best technology practices are embraced in the company.					
3	Free sharing of information along the supply chain.					
4	Vendor- supplier managed inventory system exists in the firm.					
5	There is electronic purchasing in the company.					

Section 3: Effect of Purchasing on NPD.

Q3. Using the five point rating scale where 5 = Very large extent, 4 = Large extent, 3 = Moderate extent, 2 = Small extent and 1 = Not at all, indicate by ticking (√) in the appropriate box the extent to which the variables listed below have influenced NPD process in your firm.

NO	**Variable**	**5**	**4**	**3**	**2**	**1**
1	Supplier Delivery Reliability					
2	Competence of Purchasing Employees					
3	Purchasing Procedures & Policies					
4	Purchasing Information System					

Kindly indicate the extent to which you agree with each of the following variables in as far as product development is concerned in your organization. Using the five point rating scale where 5 = Very large extent, 4 = Large extent, 3 = Moderate extent, 2 = Small extent and 1 = Not at all.

NO	Variable	5	4	3	2	1
1	Supplier delivery reliability has improved the time to market new product					
2	Supplier delivery reliability has improved the quality of new product					
3	Competence of purchasing staff have improved time to market of new product					
4	Competence of purchasing staff have improved the quality of new product					
	Purchasing procedures and policies have improved time to market of new product					
	Purchasing procedures and policies have improved the quality of new product					
	Purchasing Information system has improved the time to market new product					
	Purchasing information system has improved the quality of new product					

The End

Thank you for taking part in the Study

Appendix 2: Introductory Letter

Abdikadir A. Ahmed,

P.O. Box 100360 -00101,

Nairobi.

17.08.2017.

Dear Respondent,

I am a Master of Business Administration student at the University Of Nairobi School Of Business specializing in Procurement and Supply Chain Management. I am carrying a study in the area of Procurement and Supply Chain; Study topic is "**The Effect of Purchasing on Product Development for Beverage Manufacturing Firms in Nairobi, Kenya**". Your company has been selected to provide information for the purpose of this study.

I'm therefore requesting you to respond to the attached questionnaire as honestly as possible. I assure you that this information will be strictly used for academic purposes and will be treated with utmost confidentiality. At no particular point your identity will be revealed nor do your responses since the outcome results will be inform of statistical report. Strict confidence will be adhered to.

The results and the final report of the study will be availed to you on request.

Yours Sincerely,

Abdikadir Ahmed.

Appendix 3: Beverage Manufacturing Firms

No	**Company**	**Location**
1	Nairobi Bottlers	Nairobi
2	Equator Bottlers	Nairobi
3	Mt. Kenya Bottlers	Nairobi
4	Milly Fruits Processors	Nairobi
5	Beverage Services	Nairobi
6	Crown Beverages Ltd	Nairobi
7	Highlands Juices	Thika
8	Kabazi Canners	Nairobi
9	The Kilimanjaro	Nairobi
10	Kevian Kenya Ltd	Nairobi
11	Jetlak Foods Ltd	Thika
12	Vilcos Foods Ltd	Thika
13	Delmonte Ltd	Thika
14	Twin Oaks Ltd	Thika
15	Brava Food Ltd	Machakos
16	Annum Trading Company	Nairobi
17	Kenya Breweries LTD	Nairobi
18	Softa Bottling Ltd	Nairobi
19	Equator Bottlers Ltd	Nairobi
20	Cway Kenya Foods and Bverages	Nairobi
21	Victoria Juice Co. Ltd	Nairobi
22	Aquamist Ltd	Nairobi
23	Glaxosmithkline Ltd	Nairobi

24	Jetlak Foods	Nairobi
25	Kenya Wine Agencies Ltd	Nairobi
26	Coastal Bottlers Ltd	Nairobi
27	Skyfoods Ltd	Nairobi
28	Sunny Processors Ltd	Nairobi
29	Truefoods (K) Ltd	Nairobi
30	Premier Food Industries Ltd	Nairobi
31	Miritini Kenya Ltd	Nairobi
32	Excel Chemicals Ltd	Nairobi
33	Coral Ltd	Nairobi
34	Aviano E. A. Ltd	Nairobi
35	Yala Beverages Ltd	Nairobi
36	Grand Beverages Ltd	Nairobi
37	Triclover K Ltd	Nairobi
38	SkyFoods Ltd	Nairobi

Source: (Kenya Revenue Authority, 2017)