

**EFFECTS OF PRICE REGULATIONS ON THE PERFORMANCE OF
KENYA'S OIL SECTOR**

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Master of Public Administration of the University of Nairobi**

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DECLARATION

I declare that this research project report is my original work and effort and that it has not been submitted in any University or college for any award. Where other sources of information have been used, I have acknowledged them.

Signed

Date

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This research project report has been submitted for examination with my approval as the university supervisor.

Sign.....

Date

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DEDICATION

I dedicate this project report to my wife Agnes Naini, our children Sharon and Stacy, my late parents and family and my colleagues and friends with whom we have worked and studied together in an effort to establish the findings presented in this paper

ACKNOWLEDGEMENT

I thank the Lord Almighty for the gift of life and strength given to me in order to ensure development of this project. I appreciate the effort made by my supervisor Dr. Patrick Asingo during the proposal development stage and as well during the final stages of this project. His advise, guidance and dedication to this project helped overcome unsumountable challenges to beat strict datelines. I also appreciate my whole family especially my wife Agnes Naini and my lovely daughters Sharon and Stacy for their love, emotional support and economic stability and for enduring the difficult moments during the development of this project. I also extend my appreciation to all my classmates and especially our class Presidents Agness Laikera and John Musau for efficient coodination and general support throughout the entire degree program. I also acknowledge the effort, advise and support extended to me during this period by MPA degree program Coodinator Dr James Obuya Bagaka and the Chairman, Post Graduate Studies Committee, Department of Political Science and Public Administration, Dr Richard Bosire. My appreciation also goes to all of my friends especially Mr Simon Ouko and Nancy Okello and research assistants who assisted in establishing the findings presented in this paper. I unconditionally acknowledge and appreciate post- humously my late mother Norah Nekesa who brought me into this world, shaped my morals and taught me christian values and my late Father Senior Chief Stephen Walyaula for shaping my character. I will truly remain indebted to their love, caring and upbringing and finally I appreciate my Uncle mwalimu William Wanyonyi Wambwa for his care and mentorship.

ABSTRACT

The purpose of this report was to address the effects of oil price regulation on the performance of Kenya's oil sector. Oil Price regulation is an ongoing effort in ensuring effective conveyance of price in the sector by producers, wholesalers and retailers in the oil sector. It is a framework adopted to ensure the protection of consumers against exploitation by dealers due to lack of market information. It is however difficult to assess the impact of oil price regulations as minimal research exists to determine the resulting effects of oil price regulations in Kenya, this is because most researches that exist have been carried out in the developed world and their findings cannot be applied in Kenya adequately. Therefore, the researcher sought to explore the impact of oil price regulation on oil price trends, oil supply and oil consumer satisfaction. The aim was to acquire knowledge and establish the effects of the Energy Regulatory Commission's (ERC) price regulations on the performance of Kenya's oil sector. The study was quantitative and data collection was done through open-ended and closed-ended questionnaire administered to gather responses used in drawing conclusions regarding this study. The study has established that the regulation by ERC of fuel prices has stabilized the retail price of oil in the market, has increased the availability of oil in the market and has improved oil consumer satisfaction. The study recommends that government and the policy makers in the energy sector should improve the ERC act of 2006 to make the commission fix the prices at a given price that can be afforded by all consumers in the country and the review of the oil prices be done yearly and not monthly in order to stabilize the prices and fully eliminate the cartels that may utilize loopholes in the energy sector to manipulate oil prices. The study recommends that the government and the ERC should inform the public on a monthly basis regarding the available stocks of oil in the country. This will help avert the possibility of oil dealers creating artificial shortages in order to influence the price increase to reap maximum profit. This will greatly reduce the uncertainty about the future availability of the oil in the market.

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LIST OF ACRONYMS AND ABBREVIATION

FRICOG	Africa Centre for Open Governance
BP	British Petroleum
COFEK	Consumer Federation of Kenya
ERC	Energy Regulation Commission
IEA	Institute of Economic Affairs
KIPPRA	Kenya Institute of Public Policy Research and Analysis
KNBS	Kenya National Bureau of Statistics
KOSF	Kipevu Oil Storage Facility
KPC	Kenya Pipeline Company
KPRL	Kenya Petroleum Refineries Limited
LPG	Liquefied Petroleum Gas
OPEC	Organization of Petroleum Exporting Countries
NOCK	National Oil Corporation of Kenya
PIEA	Petroleum Institute of East Africa
PREB	Petroleum Research Branch of Energy
US	United States

CHAPTER ONE

INTRODUCTION

1.1 Background

Oil is used by many countries around the world to generate power that is vital for their economic growth. However oil products experience frequent price swings that more often affect their growth. Spikes, particularly in the price of automotive diesel may result in inflation(a general rise in the price of important goods and services).Fundamental factors that cause changes in oil prices include; changes in demand and supply of oil, USA commercial crude oil inventory level, performance of local currency against US dollar, economic and political shocks, weather conditions, Organization of Petroleum exporting Countries (OPEC) production decisions, OPEC spare capacity levels, marginal cost of production and the impact of technological changes in oil production and refinery infrastructure (Munyua and Ragui, 2012).

East African economies depend on crude oil and refined oil products mainly from the Middle East region, with few multinational firms dominating the downstream business. In Kenya the oil sector operated under the Free Market System, whereby market forces of demand and supply determined the price. Although oil prices are affected by mostly external factors, it was felt that Cartels and monopoly tendency distorted market forces to ensure high prices prevailed. Due to public outcry, the government was forced to intervene through price regulatory mechanism by introducing maximum retail price to be charged by marketing firms on certain oil products in December 2010. This effectively ushered into the sector Controlled Market System by the government (Katisya, 2009).

The Energy Regulatory Commission (ERC) established in 2007 under the Energy Act No. 12 of 2006, was charged with the mandate of regulating oil prices, importation of oil, exportation, transportation, refining, storage and sale of petroleum products, protecting consumer, investor and other stakeholder interests and monitoring fair competition in the energy sector (The Energy Act No 12 of 2006; Laws of Kenya). ERC's mandate is wide. This study focused on one aspect only that is price regulations and its effects on performance of the oil sector. Price regulations are introduced with the aim of dealing with market failure and to administratively promote: efficiency in product supply, discourage monopoly by encouraging competition and eliminate cartels by ensuring uniform pricing for oil, and as well encourage competition (ERC, 2009).

1.2 Problem Statement and Research Questions

After the end of the cold war period, the Government of Kenya shifted to liberalization paradigm to allow the private sector to thrive. The oil sector was not left behind. In 1994 the oil sector was liberalized to operate under a free market economy whereby market forces of demand and supply determined the prices at which oil dealers charged to consumers. Firms were free to enter and exit the industry. This was a deliberate attempt by the government to encourage competition and fair play. However the country experienced unabated oil price increases to levels that made the commodity unaffordable and as well pushed prices of other commodities sky rocketing. Oil dealers were accused of manipulating the market conditions to distort supply and influence price increase. Some were accused of hoarding the stocks only to stage manage shortages of oil in the country to push up oil prices with an aim of reaping high profits. During this period the Cartels and monopolies seemed to be in control of the oil market. This affected the performance of other

sectors of the economy including agriculture. Farmers complained about the high prices of diesel that made it difficult for carrying out their farming activities.

Neo-liberalists have argued that though liberalization of the market is good for economic growth, there are several issues that it fails to address effectively. The interests of the vulnerable groups like final consumers of oil are not well safeguarded under the free market arrangement. Suppliers under this arrangement are accused of forming cartels with monopolistic tendencies to distort the market forces leading to failure of the free market system .Arising from these; the government formed Energy Regulatory Commission under the Energy Act No. 12 of 2006 as an independent body charged with the mandate of regulating the oil sector. In December 2010 the government through ERC reacted to the public outcry by intervening in the oil sector to regulate the price of super petrol, automotive diesel and Kerosene which are vital to the performance of the sector.

Despite the state invention to control the price of oil, prices have continued to rise (Molloo, 2011). Kenya National Bureau of Statistics (KNBS) (2012)lists escalating oil prices as one of the negative factors that affects Kenya's economic growth.Several studies have been carried out on the oil industry but there seems to be none that focuses on the effects of ERC's price regulations by comparing the performance of the oil sector for the period (2011-2012) during price regulations(a controlled market system or economy) and the period (January- November 2010) before price regulations, which represented the free market economy period that is the benchmark of the study. The study aims to establish how ERC's price regulations have affected retail price trend for oil, product availability and consumer satisfaction, by comparing them in the two market systems for the period under study.

The main research question for the study was; **what is the impact of ERC's price regulation on the performance of Kenya's oil sector?** This is a broad question, the performance of the oil sector is equally a broad area and there are many ways of understanding it. The study focused on how ERC's price regulations affect three aspects that are vital to the performance of the oil sector, namely retail price trend, product availability and consumer satisfaction. This gave rise to three specific research questions to be answered by the study and they include;

- i. What are the effects of ERC's price regulations on the retail price trend?
- ii. What are the effects of ERC's price regulations on product availability?
- iii. What are the effects of ERC's price regulations on consumer satisfaction?

1.3 Study Objectives

1.3.1 Main Objective

The main objective of the study is to determine the effects of ERC's price regulations on the performance of Kenya's oil sector.

1.3.2 Specific Objectives

- i. To determine the effects of ERC's price regulations on retail price trend.
- ii. To determine the effects of ERC's price regulations on product availability.
- iii. To assess the implications of ERC's price regulations on consumer satisfaction.

1.4 Justification of the Study

The study is significant to the researcher as it has contributed significantly to general knowledge acquired through class work and day-to-day experiences. The report will at the individual level assist in understanding the role of the ERC, the Oil Sector and the effects of oil price regulation on the daily expenses on fuel or transport.

The findings would be useful to ERC in the formulation of policies governing the oil sector. Also to ensure that regulations are beneficial to citizens in terms of budgetary allocation towards expenditure on fuel, and that the overall impact of oil price regulation does not adversely affect performance of other sectors in the economy.

In addition, findings of the study would be useful to researchers, students and academicians. It would form a basis for discussions and research regarding the impact of ERC's oil price regulations on the country's oil sector.

The relevance of the topic under study is basically to understand the impact of ERC's price regulations on oil prices and the effects of increasing prices and their implication on the oil sector performance and what is being done to ensure such sky rocketing oil prices stabilize due to their adverse effect on key sectors of the economy such as transport, agriculture, manufacturing and industrialization.

The study has provided information to the government through the ministry of Energy, in establishing as to whether the commission's price regulation for oil is in fact serving its purpose of

protecting consumer interests in terms of affordability, quality of service, customer satisfaction, fair competition, Product availability and service sustainability. It would also enable the Ministry to understand the importance of research in terms of data and information collection as there exists only scanty information on this topic.

1.5 Scope and Limitations of the Study

The study concentrated on regulation of oil prices in Kenya and its effects on the performance of the oil sector. Most of the information and data regarding the pricing trend and product availability was gathered from the records at the ministry of Energy (Petroleum department), the ERC and where possible from other relevant agencies like Petroleum institute of east Africa or major oil dealers. Open and close ended questionnaires were used to obtain data and information related to customer satisfaction for the period under study (December 2008 to December 2012). This is because this paper sought to establish the performance of Kenya's oil sector two years before and two years during ERC's oil price regulations in the country. There were questions relating to the impact of oil price regulation before and after establishment of price control and suggestions on measures to curb the problem of increasing oil prices. The target population was readily accessible at the selected gas stations in Nairobi County. The researcher engaged the target population only on the basis of effects of oil price regulation within Kenya and not on any other matter.

The study was limited only on the effects of oil price regulation on the country's oil sector thus does not show the full extent of the impact of the same on the entire economy. The study was also limited to a 4 year timeline i.e. 2009-2012 which did not take into consideration effects of

regulations that may have occurred prior to 2009. The researcher also expected not all the respondents to be freely willing to participate in the study in fear of intimidation by their superiors or their responses would be used against them. The study was also limited to Nairobi County only which did not take into consideration the impact of price regulation on the entire economy. However the researcher felt that the four year period was deemed sufficient to provide enough data to show the effects and that Nairobi County makes a representative sample to draw conclusions because it has the largest economy in comparison with other Counties

1.6 Literature Review

1.6.1 Introduction

This section discusses literature developed by both local and international scholars related to oil price determination, regulation and its impact on especially the oil sector in general. This will enable the researcher, ministry of energy and the general public to understand the reasons as to why oil prices are ever changing and the theory behind it. It may also form a basis to draw up measures to curb negative effects of oil price regulation on the oil sector.

This section is divided into three sub-topics outlining literature review on price regulation, its effects on; pricing trend, product availability and customer satisfaction. The section ends with a theoretical review of rational choice theory. Under conceptual framework, possible courses of action are discussed to provide recommendations on what measures should be taken to deal with the effects of price regulations on Kenya's Oil Sector. Lastly there is the research gap that describes the unique nature of this paper and how it may be of great use to others.

1.6.2 Price Regulations and Price Trend

Trends in retail prices are affected by several factors including subsidies. Countries such as china have adopted this strategy to influence trends in retail prices. China gives out subsidies by compensating its two largest oil companies Sinopec and Petro China on their refining losses. As a result, the oil price regulations in China needs to be seen as a bespoke case compared to the rest of the world (Tham, 2011).

Gas pricing levels are affected by numerous factors. They range from rapid and dynamic increase of procurement costs of imported gas to the ever widening gap between domestic and imported gas prices (Corbeau et al, 2012).Most commodities that consumers purchase are found in markets where prices do not fluctuate or rise like that of gasoline, an example is the price of clothing or laundry detergent which do not change frequently (Hill, 2012).

Frequent changes in pricing through regulation result in local “price wars” among retailers which can lead to long-term consequences of price directives that are not geared towards consumer protection (Morton, 2001).This necessitated the drafting of competition laws concerning “predatory pricing”, an attempt by a retailer to destroy competitors during a price war such that if the predator’s competitors are driven from the market, the predator may be in a better position to reap maximum profits through higher prices. Hill (2012) gives an example of Quebec which has had a minimum price floor on retail prices since1996 which is compared to sales-below-cost laws adopted in the United States. These laws were enacted to amid concerns that oil refiners were taking advantage of opportunities presented by oil price increase to engage in predatory pricing strategies. The aim was to erode the market share of fellow competitors.

A factorial experiment to investigate whether rising prices causally influence price trend was conducted in Austria, to compare the prices of two menus priced in two different currencies. Expectations of higher prices or stable prices were induced. As expected price trend perceptions were causally affected by price trend expectations. The manipulated expectations of rising prices yielded a perception of price increases even when the real price remained stable. Price trend in the oil sector in Kenya can thus be manipulated by oil dealers through oil price indicators to yield high oil prices even when the real price remained stable (Greitemeyer et al, 2005).

Oil price regulation through taxation greatly affects the prices of oil, subsequently affecting the retail price trends. When taxation on oil products is high, their prices will also go up. With a decrease in taxation, the prices also go down. This shows a negative trend relationship between oil and taxation. Regulation of oil prices through taxation is carried out extensively in the world due to uncertainty of oil prices especially in the international market. China has regulated oil product prices to maintain inflationary pressures, maintain demand and supply balance and smooth out price volatilities from international markets. Two features stand out in China's case of oil price regulation: the income elasticity of China takes a shorter time to reach the peak and then decreases gently from this peak presumably due to the greater technological knowledge and efficiency available, the wide income disparity between the inland and coastal regions of China and its population size of 1.2 billion people as wealth spreads across its populace. China's tax on oil products is minimal at 20% compared to many developed countries such as France 300% and Japan (120%) which effectively lowers China's absolute oil prices (Tham, 2011).

Price regulation by the ERC initially had an impact, especially on petrol prices, as it curtailed the sharp trajectory of prices which shot upwards on the international market but resulted in petroleum product prices in rural areas costing more. Regulations cumulatively added transport costs from the urban depots to further away depots, thus higher prices. Previously, oil dealers would simply total their costs and take care of such market realities by segmenting the market and cross subsidize with urban areas making prices in rural Kenya lower. Price caps have ended up hurting the economically vulnerable i.e. rural folk and urban poor, who they are meant to protect. In urban areas like Nairobi and Mombasa, fuel prices are the same at all stations while previously, fuel was more expensive in more affluent areas. Oil marketers were able to recover their lost margin in low income market segments by charging high in upper market segments (Obiero, 2012).

Regulations bring about certainty in price change especially if based on a legal framework. Certainty helps consumers plan their expenditures in relation to their income. If regulation efforts were eliminated, consumers could expect that in areas where markets are relatively uncompetitive, prices would increase with the elimination of the maximum price ceiling and lead to failure of reduction in prices in markets where minimum prices prevail (Sen *et al*, 2011)

1.6.3 Price Regulations and Product Availability

Supply chain coordination is the process where all phases or partners within a select supply chain take actions that simultaneously enhance the overall benefit for producers and manufacturers. He adds that for complete benefit to be drawn from any supply chain, it is important to build a total

supply chain collaboration system which allows ease of flow of information and goods (Simonov, 2012).

However, Hill (2012) argues that the supply chain involves four distinct and interrelated flows that include: materials, information, ownership and payment. Furthermore, he indicates that having a successful supply chain management necessitates urgency to be directed towards planning, managing and controlling all aspects of the four factors through coordination of the key processes involved from extraction of raw materials by producers to manufacturers, distribution to wholesalers and retailers and finally offering value to the final consumers.

The supply chain however according to Paik and Bagchi (2007) is affected to a large extent by price fluctuation, a common practice adopted by producers to stimulate high demand. This happens where wholesalers directly control distribution channels and can influence prices in the market. They add that for any market to operate efficiently with stock supply, it requires proper material planning and efficient transportation logistics.

There are several factors affecting product availability and they include price, infrastructure network and demand for the product. The consumer's perspective is that supply reflects availability of the product for sale such that the absence of the above factors leads to shortages. It is therefore mandatory for governments to adopt price control policies that define the market price of products because it leads to increased product supply (Morton, 2001).

Availability of a product is determined by the storage capacity available. Excessive storage capacity may encourage product hoarding, a tactic used by wholesalers to increase prices of goods in the market (Bertoletti *et al*, 2008).

In the case of the US and Europe, Kent (2012) states that high gasoline prices have added weight to the push for tougher market supervision, which began in 2008 when prices spiked to record highs just as the financial crisis hit, however, market participants have raised concerns that restrictions on the size of holdings might discourage financial players from participating in the market, while more stringent regulatory obligations and a push to clear the majority of products could increase prices; therefore, the overall result, may be less market liquidity and increased volatility exactly the reverse of what was intended.

Shortages of oil products experienced in the country during this period were as a result of erroneously allocating more storage capacity to one oil dealer. The oil dealer did not have enough capacity to dispense off the stock and this amounted to hoarding. This created a massive shortage of oil products in the market and in turn caused the price to shoot up (AFRICOG, 2009). The Report by KIPPRA (2012) indicates that the Kenyan government saw it best to mandate the ERC to regulate oil prices in the country to protect consumers from irrational behavior of oil marketers. However, Oil marketers have been grumbling over the formula used by ERC to set retail prices as each time they are not satisfied with price guidelines set by the ERC. The paper further indicates that for a long time, the local oil industry has been the preserve of a few big multinationals even with the feeble presence of State-owned National Oil Corporation of Kenya (NOCK). In the current arrangement, multinationals have the muscle to

frustrate efforts by ERC to price fuel accordingly, thus the reason oil marketers hoard fuel to cut off supplies when expecting price increase (Molloo, 2011).

However, strategic use of storage by the market players in the oil industry are reinforced when there is also the owner of the storage facilities such that, not only the oil dealers can raise product costs by hoarding storage capacity, but this can also prevent an expansion of the market share by controlling the pace of storage investments until new entrants have developed their own storage capacity. Without transparency of ownership of such storage facilities being unbundled, the effect of the adoption of a market mechanism on the adverse incentives of the incumbents is diluted (Bertoletti *et al* 2008).

The variances in the “supply-and-demand” concept of product markets resulting from bullwhip effect necessitates the need of sharing of information across the value supply chain as it is a crucial approach in minimizing the high rate of uncertainty in the supply chain. For actual consumer demand to be satisfied by the retailers or suppliers, customer demand and suppliers inventory need to be determined and availed to manufacturers through the use of information sharing. In an attempt to increase supply chain coordination while reducing bullwhip effect, there will be need to: eradicate price promotions that results in insufficient provision to meet consumer demand, harmonize scheduling sequences and reorganization refill by means of structured programs such as vendor-managed inventory or collaborative planning forecasting replenishment supply chains, rationing and shortage gaming effect and order batching effect; this way, demand will almost be nearly met by the supply chain (Simonov, 2012).

There seems to be many studies done on oil industry but there is very little that has been done on the effect of price control on the performance of the oil sector in Kenya by looking at the effects of ERC's price regulations on product availability. This study will therefore look at the effects of price control on the availability of oil.

1.6.4 Price Regulation and Consumer Satisfaction

Customer Satisfaction is defined as Customers overall evaluation of the performance of an offering to date. Customer satisfaction can be measured through several attributes including; perceived overall quality, product reliability, perceived value of a product relative to price, customer loyalty and behavior (Johnson and Fornell, 1991).

Customer satisfaction is achieved through the prism of consumer behavior. Consumer behavior is defined by the business directory as the study of how individuals and organizations make decisions on how to spend available resources to satisfy their needs and wants. Consumer behavior is invariably affected by product price, product availability, perceived product quality and quantity (Murray, 2005). Regulation of prices therefore safeguards the smaller consumers from exploitations and this eventually contributes to improvement in customer satisfaction.

To understand fully the modern economy and the firms that compete in it, there must be a measure of quality of economic output. In America a system to measure customer satisfaction was introduced. The American Customer Satisfaction Index calculates estimates on annual basis a firm's level of customer satisfaction. It measures the quality of goods and services as experienced by the customers that consumes them (Farrell *et al*, 1996), on the other hand Hallowell (1996) argues that customer satisfaction is the result of customers' perception of the

value received, where value refers to perceived service quality in relation to price. Corin Jr. *et al* (2000) adds that customer satisfaction is highly associated with value and is conceptually based on a number of service quality attributes as price. They contend that favorable service quality perception lead to improved customer satisfaction.

The steady gain in market share by the smaller players has been attributed to their expansion of fuel stations in towns and remote parts of the country where their larger rivals have little representation. Hass Petroleum, for instance, recently introduced its own brand of lubricants. Hashi Energy has announced plans to supply cooking gas directly to homes through pipes instead of cylinders, in a move that could change the way LPG is consumed, especially in urban areas. As a result, consumers of oil products especially small scale consumers benefit immensely. They derive more satisfaction from products offered in smaller quantities than in large quantities from big players, with affordability being the main reason behind (Molloo, 2011).

ERC is responsible for monitoring and ensuring the implementation of and compliance with the principles of fair play in the energy sector. Its work is to set fair tariffs that ensure investors are adequately compensated and consumers pay a fair price for the regulated services. This in turn does not allow for monopoly existence in the oil industry (ERC, 2009). Kigunda (2012) explains that increasing the number of gas stations across the country, will increase competition and ensure product is available when and where it is needed. This might lead to increased consumer satisfaction.

Natural monopoly is defined as a distinct type of monopoly that may arise when there are extremely high fixed costs of distribution, whereby large-scale infrastructure is required to ensure supply. Natural monopolies are common in markets for ‘essential services’ that require an expensive infrastructure to deliver the good or service, such as in the cases of water supply, electricity, gas and other industries known as public utilities; because there is the potential to exploit monopoly power, governments tend to nationalize or heavily regulate them (Jodi , 2012).

Having observed the trend in oil retail prices and oil supply since the inception of oil price regulations by the ERC, the grueling effect of all the above is at the end felt by the consumer. On 19 April 2011, people took the streets of Nairobi to protest against the rising cost of fuel, which they blamed on the government (Molloo, 2011). For consumers of oil products to be satisfied, there is need for effective price regulation to be in place. Effective price regulation can only be established through finding out the impact of oil price regulation on consumer satisfaction. This study therefore intends to find out the effects of ERC’s price regulations on consumers’ satisfaction.

Nationally, the income loss arising from oil price increase would be borne by consumers to the extent that the demand for oil and oil products is inelastic in the short run causing minimal changes in product demand as a result of increased prices of the product. However, where oil is a factor of production in producing price-elastic final goods, the negative revenue effects of increased oil prices would initially be borne by producers in a competitive market, since they would be unable to pass on the higher costs but later be imposed on consumers as they purchase the final product. (Shanjun *et al*, 2012).

The impact of increasing inflation rates on output and employment is determined by the relative supply responses of labor and capital, to the extent that labor market institutions inhibit the adjustment of real wages to shocks such that higher oil prices imply higher input prices which reduce profitability; this deterioration in the terms of trade following such oil shocks can affect employment as people seek to downsize in a bid to cut cost. In general, the short-term economic impact of an oil shock on oil dealers would be smaller as higher proportions of the price rise can be passed on to consumers. This poses multiple challenges for consumers as variations in oil prices affect other sectors of the economy and production in product markets that pose negative effects on consumer income and lifestyle. This affects customer satisfaction (OECD, 2004).

1.7 Theoretical Framework: Rational Choice Theory

This study uses Rational Choice Theory. While acknowledging that there are other theories like principal agent theory with the following stated assumptions:- the first assumption is goal conflict exists between the principals and their agents and secondly the theory assumes that the agents have more information than their principals, which result in an information asymmetry (Waterman and Meier, 1998) Principal Agent theory is directed at solving two problems that can occur in the agency relationships.

The first problem is the goal conflict between the agents and their principals and the second problem is the information asymmetry between the agents and their principals whereby it is assumed that the agents have more information than their principals. These problems may occur because of the difference in attitudes towards risk sharing between the agents and their principals whereby each party may prefer different course of actions because of different risk preferences.

(Walking and Long 2004) Barney (2000), notes that the focus of the theory is on determining optimal contract behavior versus outcome between two parties, while this study involves three parties that are key stakeholders of the Energy Sector. They include the Government and ERC, the oil dealer and the citizens who are consumers' of oil.

The Principal agent theory may be relevant to the topic of this study in so far as explaining and solving the agency relationship problem between the government and the ERC and the oil dealers, but it expressly leaves out the public who are the consumers of oil. To this extent the theory is limited to be applied in explaining comprehensively the thrust of this study which is how the ERC's price regulations have affected the performance of the oil sector by looking at the comparisons in the price trend, product availability and consumer satisfaction in two periods e.i. before ERC's price regulations and after ERC's price Regulation.

Classical Model Theory is another theory that could be used in explaining this study, this theory assumes that prices are completely flexible and two that markets are highly competitive. It therefore focuses on firms competing with each other to make the best product they can for the lowest acceptable price. That price will always reflect the minimum efficient cost. It is also assumed that wages and prices will rapidly adjust to reflect supply and demand for goods and services. This theory focuses on a perfect market with more than one product to satisfy a demand. It also focuses only on the free market economy. This Limit the Theory from being applied to the purpose of this study which seeks to compare the performance of the oil Sector in two market systems that is controlled market economy and free market economy. Secondly this study is dealing with homogeneous products that have no substitutes that is; Petrol, Automotive

diesel and Kerosene. This study will adopt Rational Choice Theory because it explains the phenomena much better.

The theory has three main assumptions; the first one is self interest, the second one is opportunity maximization and the third one is rationality. Therefore this theory assumes that all actors pursue their own self-interest, they will seek to maximize on opportunity in every situation. They are rational and will seek to maximize on the benefits while minimizing cost. Under this study the actors are the government and the ERC, the oil dealers and the public. In the free market economy the government does not come into the picture as an actor, because the market forces of demand and supply are allowed to determine the market price. However the government seizes the opportunity when there is public outcry on the escalating price of oil to intervene by creating ERC to regulate the oil prices. Although from the bigger picture the government is stabilizing the prices to satisfy consumers, it also advances its self interest of taxation and political reward to maximize on opportunity. The government acts rationally by maximizing on benefits through political reward. Adam Smith states that in the process of pursuing self interest there seems to be an invincible hand that forces the actor to serve public interest that brings benefits to other people. This spread of the rational choice approach beyond conventional economic issues is discussed by Foley (2003), as an economic theory that assumes that individuals always make prudent and logical decisions that provide them with the greatest benefit or satisfaction and that are at the best self- interest.

Rational choice theory is a framework for understanding and often formally modeling social and economic behavior. Rationality is widely used as an assumption of the behavior of individuals in

micro economic models and analysis which appears in almost all economics dealing with decision- making. For most people rationality means sane, in a thoughtful clear- headed manner or knowing and doing what's healthy in the long term (Green and Shapiro, 1996).

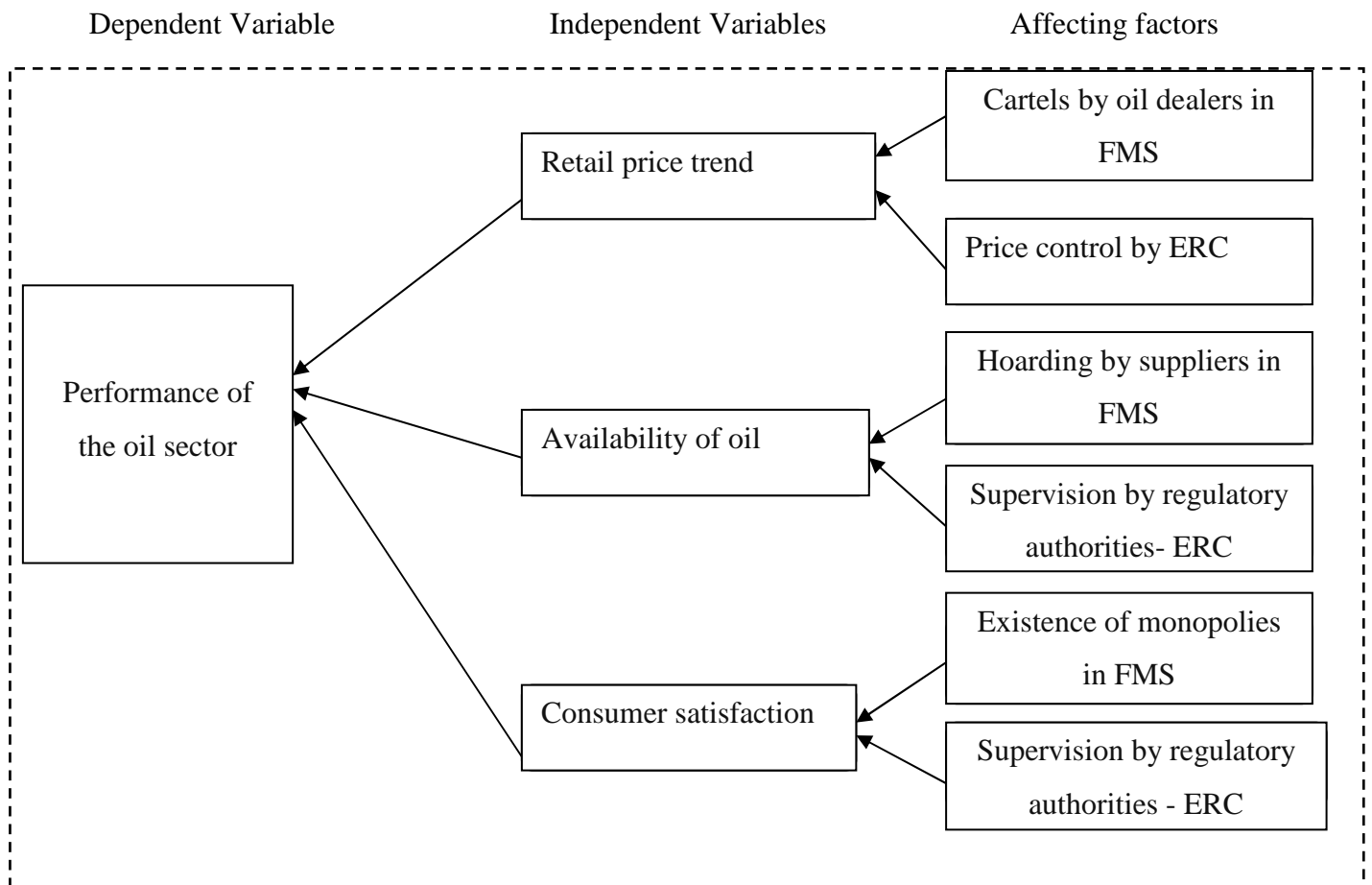
The government through ERC is a self interested party motivated by the incentive of reward that is the tax it collects. ERC may act sometimes in the interest of the government through adjustments of oil prices to suit its interest by diverting the public attention from the national issues. This behavior is described in the definition of rational choice theory as rationality that an individual acts as if balancing costs against benefits to arrive at action that maximizes personal advantage. As an independent agency, ERC has the mandate for regulating oil prices to eliminate hoarding and monopoly behavior and also cushion the general public against the exploitation by the unscrupulous oil cartels.

Most actions by the ERC on oil prices are perceived to be not market driven, but rather politically driven. The government may use ERC to divert public attention over crucial issues relating to the government such as the passage of crucial bills that the public might offer resistance, for example increased road carnage and increased insecurity. The report by KIPPRA (2011) indicates that the ERC acts to balance costs against benefits to arrive at actions that maximize government's self interest. This action justifies the assumptions of rational choice theory given by Becker (1976) that individuals always make prudent and logical decisions that provide them with the greatest benefit or satisfaction and that are in the best self- interest. Arising from this, it is clear ERC may never deliver on their mandate of price regulations as an independent agency to referee the oil sector in Kenya (KIPPRA, 2011).

1.7.1 Conceptual Framework

The oil sector in Kenya is broad and to understand its performance, the researcher has divided it into: dependent variable, independent variables and indicators or factors that affect the independent variables. For the purpose of this study, the dependent variable is the performance of the oil sector which is affected by retail price trend, product availability and customer satisfaction as the independent variables. This study compares two market systems and the researcher has differentiated factors that affect each independent variable separately. Retail price trend is affected by cartels formed by oil dealers in the free market system while price trend is stabilized by ERC's price regulations in the controlled market system. Oil availability is affected by hoarding of the product by suppliers in the free market system; this is eliminated by strict regulatory supervision by the ERC in the controlled market system. Customer satisfaction is affected by market distortions and exploitations caused by monopolistic practices in the free market economy. In the controlled market system ERC ensures fair competition by regulating commodity prices through regulatory mechanism. The relationship of these variables is best illustrated in the figure below.

Figure 1.1 Conceptual Framework



Source: Researcher 2013

1.8 Hypothesis

1.8.1 The Main Hypothesis

ERC's Price regulation has improved the performance of Kenya's oil sector

1.8.2 Specific Hypotheses

- i. ERC's Price regulation has stabilized the oil retail price trends
- ii. ERC's Price regulation has increased oil products availability
- iii. ERC's Price regulation has improved customer satisfaction in the oil sector

1.8.3 Operational Definitions of Variables

Oil Retail Price Trend is used to refer to historical pricing patterns for oil. In this study, this variable is used to refer to the fluctuations or frequency in changes of retail prices for oil for the period under study.

Product Availability may refer to readily available product or service for sale to consumers when and where they need it. This concept is used in this study to refer to sufficient stocks of oil available to meet consumers demand when and where it is needed in Kenya.

Consumer satisfaction concept has been used in this study to refer to a situation whereby the needs and wants of oil consumers are fully met by suppliers providing oil and oil products in the right quality, at the right price, in right quantities and at the right place.

Monopoly is a market condition whereby few oil suppliers control and influence market activities for their exclusive advantage. Cartels are formed when suppliers of oil come together to selfishly protect their interest, which in most cases is making huge profits at the expense of consumers. Hoarding concept in this study is used to refer to oil dealers' behavior of withholding oil stocks to create shortages with the aim of selling it at anticipated higher prices to realize higher profits.

Price regulations are used in this study to refer to the government's monthly setting of maximum oil retail prices to be charged by oil dealers. Free Market System refers to the period before the government introduced oil price regulations whereby demand and supply determined the market

price. While Controlled Market System refers to a situation whereby the government sets the maximum oil price at which dealers must sell to consumers.

1.9 Research Methodology

1.9.1 Research Design

This study used a before and after without control research design. It was a comparison survey because it sought to find out whether introduction of ERC's price regulations in December 2010 stabilized oil prices, increased availability and improved consumer satisfaction. The comparison was between the period before ERC's price regulations (December 2010) and the period after December 2010 during ERC's price regulations. In this type of research variables are measured before and after introduction of a treatment or some intervention, to establish causal linkages of variables. The intervention in this study was the introduction of price regulations by ERC in December year 2010. Price trend variable was measured in the context of time series analysis to show the difference in price trend during the two periods. A survey was conducted using a questionnaire (attached herewith as appendix) to gather the respondents opinions used to draw a comparison on product availability and consumer satisfaction between the two periods under study.

1.9.2 Target Population and Sample Design

Oil consumers in Nairobi County formed the target population for this study. A population is a well-defined set of elements, events, people, services, objects and group of households or things with common observable attributes. This definition ensures that the population of interest is homogeneous. The focus of the study was on the consumers of petroleum products in Nairobi

County, they were drawn from the affluent market, upper market, middle level market and low level market. The county was divided into these four regions or clusters comprising of several retail outlets. One retail outlet was randomly selected from each stratum where the accessible population was drawn to participate in the study. These clusters are Westlands, Lang'ata, Kawangware, and Buru Buru. The target population for this study constituted oil consumers who have particularly owned vehicles since 2008 to date. They were interviewed to determine the effects of Oil Price Regulation on customer satisfaction. They were required to provide information based on the structured open and close ended questionnaire administered to them concerning prices of oil in Kenya before ERC's price regulation period (Dec. 2008 to Dec. 2010) and the price regulation period (December 2010 to December 2012). Target population in statistics is the specific population about which information is desired.

Stratified Random Sampling method was then used to collect information from various respondents. The goal of stratified random sampling is to achieve desired representation from various subgroups in the population. Samples were collected through stratified sample design that enabled the categories of population to be well represented thus increasing the level of accuracy. This method was appropriate for selecting statistical items.

The sampling plan describes the sampling unit, sampling frame, sampling procedures and the sample size for the study. The sampling frame describes the list of all population units from which the sample will be selected. The table below shows the sample size for the study.

Table 1.1: Sample Size

Categories	Sample Size
Oil consumers from different locations at retail outlets in Nairobi county	
Westlands	96
Lang'ata	96
Buru Buru	96
Kawangware	96
Totals	384

Source: Researcher 2013

1.9.4 Data Collection

This study utilized a questionnaire to collect primary data. A questionnaire is a research instrument consisting of a series of questions and other prompts for the purpose of gathering information from respondents. The study considered questionnaires for they have advantages over other types of research instruments in that they are relatively low on cost. They do not require as much effort from the interviewer in comparison with verbal interviews or telephone surveys. They often have standardized answers that make it simple to compile data. The questionnaire was designed to include both structured and unstructured questions. The structured questions were used in an effort to save on time and money as well as to facilitate an easier analysis as they are in immediate usable form. The unstructured questions were used so as to encourage the respondent to give an in-depth and felt response without feeling held back in revealing of any information.

The study used both primary and secondary data sources. For primary data the researcher used a questionnaire. The questionnaire had items aiming at answering the study question and meeting the research objectives. The choice of this tool of data collection was guided by the time available and the objectives of the study. Questionnaire provided a high degree of data standardization and adoption of generalized information amongst any population. Semi structured questionnaire was used to collect data. The closed ended questions was used for easy coding and analysis while the open ended questions were used to elicit more information from respondents to complete any missing links. These types of questions are accompanied by a list of possible alternatives ranging from strongly disagree to strongly agree, from which respondents were required to select the answer that best describes their situation i.e. strongly disagree on the one extreme to strongly agree on the other. A sample of the questionnaire used to gather the respondents' opinion is attached as an appendix.

The secondary data was obtained from the Ministry of Energy, Energy Regulatory Commission, Kenya National Bureau of Statistics, the International Energy Agency, World Development Indicators by the World Bank and the KIPPRA Data Compendium among other credible sources. Before the questionnaires were finally administered to participants, a pilot study was carried out to ensure that the questions are relevant, clearly understandable and make sense. The pilot study aimed at determining the reliability of the questionnaire including the wording, structure and sequence of the questions.

1.9.5 Data Analysis

Before processing the responses, the completed questionnaires were edited for completeness and consistency. The data was then coded to enable the responses to be grouped into various categories. Data collected was quantitative and was analyzed using SPSS and Microsoft Excel. The findings have been presented using tables, graphs and charts. Tables have been used to summarize responses for further analysis and facilitate comparison. This generated quantitative reports through tabulations and percentages. The use of percentages is important for two reasons; first they simplify data by reducing all the numbers to range between 0 and 100. Second, they translate the data into standard form with a base of 100 for relative comparisons.

CHAPTER TWO

HISTORICAL AND CONTEXTUAL PERSPECTIVE ON PRICE REGULATIONS

2.1 Introduction

This chapter discusses the historical and contextual perspective of price regulations for petroleum products and the legal framework that governs the energy sector. The chapter provides details on how the sector has evolved through phases from the 1960s moving from state controlled system to free market system and again back to controlled economy. It also provides information on the establishment and eventual formation of ERC through Acts of parliament.

2.2 State control, Market Economy and the Oil Sector

Adam Smith and Karl Max presented two ideal types of economies; the free market and controlled market economies. In free market economy, private firms and citizens control factors of production and determine what to produce and the value of offer; they also control supply of goods and services. In the controlled market economy, the state determines the value of goods and services and sets the minimum or maximum prices accordingly (Sujian, 2012). Kenya operated under a controlled market system since the 1960s to a large extent owing to donor conditionality that needed assurance on how the funds were utilized and more importantly an elaborate plan on repayment. Donors included America, European countries and even Russia. After the end of the cold war period in the early 1990s, Kenya embarked on an ambitious program of liberalizing her economy to usher in a free market system. The main aim was to allow the private sector to thrive. In 1994 the energy sector was thus liberalized to allow the actors to determine prices of energy products like oil and oil products. However the sector faced a lot of challenges forcing the government to intervene with regulatory mechanisms through an

independent agency to regulate oil prices by setting maximum retail prices for essential oil products like Petrol, automotive diesel and Kerosene (KIPPRA, 2012)

The petroleum industry can be broadly categorized into two i.e. the upstream and downstream segments. The upstream segment involves exploration and production of oil. It ends at the point where the crude product is delivered to an export terminal in the country of production. The downstream segment begins at the loading port and ends at the point where the consumer purchases petroleum products at the retail outlet. This study concentrates on the downstream segment of the sub-sector which comprises public and private sector players. Reforms in the petroleum sector have led to realignment of its market structure as well as changing roles of different institutions in the petroleum industry. For instance, there exists government intervention on importation of crude oil through the Ministry of Energy as well as processing through the KPRL. The refinery is co-owned by the government and three private companies (BP, Shell and Chevron) on a 50-50 equity basis. The government also owns the Kipevu Oil Storage Facility through the Kenya Pipeline Company (Republic of Kenya 2004).

Kenya's macro-economic environment has undergone significant reforms since the mid 1980s. The reforms aimed at improving economic performance, attracting investments, increasing employment opportunities and incomes, and improving the productivity and efficiency of public investments. These reforms have inter alia included privatization by the Government, liberalization of commodity prices and exchange rate regimes and tacit withdrawal of the public sector in activities of a commercial nature. In keeping in tandem with reforms in other sectors of the economy, the Government has also undertaken structural reforms in the commercial

segments of the energy sector, namely electricity and petroleum, with a view to improving the operational efficiency in the sector by eliminating distortions that existed hitherto, induce competition and allow energy prices to move in consonance with market fundamentals and attract investments into the sector. Kenya aspires to be a middle income economy as envisaged in Vision 2030, it faces an enormous task of meeting energy needs due to the high expectations in growth to power the economy. The country therefore needs to come up with strategies and investment plans to secure sustainable supply of energy to meet the growing demand. The energy sector is considered a key enabler to achieving vision 2030. Electricity, petroleum and renewable energy are the most potential sub sectors. Even though wood fuels are the most consumed fuels in Kenya, petroleum and electricity are the most dominating fuels in the commercial sector. Other major energy consumption sectors apart from the commercial sector are transport and manufacturing sectors (Mwangi *et al* 2003).

Kenya embarked on fundamental structural and regulatory reforms in the energy sector in earnest after mid-1990's following the enactment of the Electric Power Act, 1997 and later the Energy Act 2006. These legislations laid the foundation for the separation of generation from transmission and distribution in the electricity sector and the liberalization of the procurement, distribution and pricing of petroleum products in the country. The petroleum sub-sector was regulated by the Petroleum (Exploration & production) Act 1994 and the Petroleum Development Fund Act No. 4 of 1991. The Energy Act 2006 consolidated all laws relating to energy and provided for the establishment of the ERC as a single sector regulatory agency with responsibility for economic and technical regulation of electric power, renewable energy and petroleum sub-sectors. These reforms were preceded by the enactment of the Restrictive Trade

Practices, Monopolies and Price Control Act of 1989 which aimed at promoting competition and reducing direct control of prices in the entire economy (KIPPRA, 2005).

In order to reduce the effects of increasing international oil prices in the country, the Kenyan government began oil exploration in the country to determine possibility of international oil substitution with that of local supply. As stated by Sargajan, (2012) there has been recent oil discovery by Anglo-Irish firm Tullow Oil in Kenya's Turkana District. Speaking to David Owiro, an economist at Kenya's Institute of Economic Affairs, Sargajan adds that if developed, oil exports could revolutionize Kenya's economy if the right policies are in place to regulate and govern the industry as the discovery of oil means that though the oil sector is a huge earner, the government will generate more revenue through the sector to finance its budget and take care of infrastructural development, a crucial component for economic growth with higher foreign currency earnings increasing which will greatly reduce the import bill, since oil currently accounts for the highest import percentage, 30% of the country's annual import cost.

As defined by Jodi (2002) a natural monopoly is a distinct type of monopoly that may arise when there are extremely high fixed costs of distribution, whereby large-scale infrastructure is required to ensure supply. He adds that natural monopolies are common in markets for 'essential services' that require an expensive infrastructure to deliver the good or service, such as in the cases of water supply, electricity, gas and other industries known as public utilities; because there is the potential to exploit monopoly power, governments tend to nationalize or heavily regulate them.

ERC's Economic Regulation Department is responsible for monitoring and ensuring the implementation of and compliance with the principles of fair play in the energy sector as it sets fair tariffs that ensure investors are adequately compensated and consumers pay a fair price for the regulated services (ERC,2009). This in turn does not allow for monopoly existence in the oil industry, thus as is explained by Kigunda (2012) the recent efforts made by the Members of Parliament to expand the National Oil Corporation gas stations across the country might be a reprieve to fuel consumers in Kenya who have for a long time suffered in the hands of oil cartels as they have been known for their efforts to frustrate government's regulatory measures and disrupt economic stability for them to continue to thrive in scarcity and general hardships. He adds that this has largely been contributed to by the fact that the oil sector is controlled by very few companies that always strive to maximize their profits in this lucrative oil market as the inefficiency exhibited by the ERC and NOCK in curbing the consumer from hiked prices has also provided a leeway for these cartels to siphon public money.

As a result of pricing strategy by local oil companies and ERC oil price regulation, Juma (2012) indicates that Kenyan oil firms have raised their market share at the expense of multinationals, with state owned National Oil Corporation's market size at 6.3 per cent from 4.4 per cent while Bakri increased its stake to 4.5 per cent in March compared to 0.5 per cent in December 2010. In addition, the smaller players also benefited from deep pocketed shareholders and low cost base, allowing them to snatch contracts from the established companies with a pricing strategy owing to the intense competition in the oil sector which has also seen some local oil dealers acquire each other's market share, with Gapco's share shrinking to 1.8 per cent from 5.8 per cent.

According to Business Daily Africa (2011) the basis of the pricing margin is unknown as OiLibya, Kenya Shell, KenolKobil and Total, with a more than 75 per cent stranglehold on the Kenyan fuel market, have all warned that controlling fuel prices could see the exit of multinational firms, with investors likely citing the regulations as negatively affecting access to the business climate in the country. Juma (2012) explains that the steady gain in market share by the smaller players has been attributed to their expansion of fuel stations in towns and remote parts of the country where their larger rivals have little representation and also gained from reselling to smaller oil dealers and their popularity among commercial and public transport operators seeking bargains on pump prices. He adds that these firms are also expanding their investments to venture into new product lines after relying heavily on diesel and petroleum sales, Hass Petroleum, for instance, recently introduced its own brand of lubricants and Hashi Energy has announced plans to supply cooking gas directly to homes through pipes instead of cylinders, in a move that could change the way LPG is consumed, especially in urban areas.

Data from a publication by the Petroleum Institute of East Africa (2011) shows that the market share of the multinationals dropped from 75 per cent in December 2010 to 72.3 per cent in the first quarter of 2012 with OiLibya recording the largest market share drop to stand at 6.9 per cent from 12.6 per cent in the period under review as Total Kenya's stake fell to 21.7 per cent from 27.1 per cent. The report adds that the steady loss of market share by the multinationals amid increased competition has been cited as the key reason for the exit of a number of the foreign firms such as Mobil, British Petroleum (BP), Chevron and Agip having left the Kenyan market as a result of oil price regulation that has tamed international oil companies as it does not permeate for abnormal profits owing to their limited number of retail outlets.

2.3 Legal Framework and Regulations of Petroleum Industry

The Energy sector in Kenya is governed by the Energy Act No. 12 of 2006. Petroleum fuels constitute the main source of commercial energy in Kenya. Kenya is a net importer of petroleum products and has a refinery owned and managed by the Kenya Petroleum Refineries Ltd (KPRL), an 800 km cross country oil pipeline from Mombasa to Nairobi and Western Kenya with terminals in Nairobi, Nakuru, Eldoret and Kisumu, run by the Kenya Pipeline Company (KPC). The sector also boasts of over 30 oil importing and marketing companies comprising of five major companies namely Vivo(Shell), Total, Kenol/Kobil, Oil Libya, Gulf , and other emerging oil companies which include the Government owned NOCK (KIPPRA, 2005).

The sector, was liberalized in 1994, and has since seen some growth and improvements in quality and level of service. However, without an appropriate regulatory environment being in place at the time of liberalization (the existing legislation at the time was the Petroleum Act Cap 116 of 1948 with latest revision of 1972), several challenges face the sector which include proliferation of substandard petroleum dispensing and storage sites which pose environment health and safety risks; diversion of petroleum products destined for export into the local market by unscrupulous business people to evade tax and a dominance of the market by a few companies among others. The Government noted these challenges in its energy policy contained in Session Paper No. 4 (2004) on Energy and recommended review of the Petroleum Act Cap 116 and other energy sector statutes and the introduction of a new energy sector legislation to cover petroleum, electricity and renewable energy. It also recommended the formation of a single energy sector regulator to regulate electricity, downstream petroleum, renewable energy and other forms of energy (KIPPRA, 2007).

In 2006, the Energy Act No. 12 of 2006 was enacted. This led to the transformation of the then Electricity Regulatory Board to the Energy Regulatory Commission (ERC) to also regulate petroleum and renewable energy sectors in addition to electricity. The Act states in Section 5(a) (ii) that the objects and functions of ERC include regulating the importation, exportation, transportation, refining, storage and sale of petroleum and petroleum products. Therefore one of the functions of the ERC is regulating prices of petroleum products, refining, storage and sale. Construction Permits are also to be issued by ERC for all petroleum related facilities in order to check proliferation of substandard sites. All petroleum operators are required to comply with provisions for Environment Health and Safety. Petroleum products should also meet the relevant Kenya Standards. Section 102 empowers the Minister to make regulations upon recommendation by the Commission on petroleum related activities including importation, exportation, and landing, open tender systems for importation, minimum operational stocks, and determination of retail prices for petroleum products among others. Regulations were developed under the repealed Petroleum Act Cap 116 and deemed to be in force until repealed or revoked under the provisions of the Energy Act No. 12 of 2006 (Mwangi *et al* 2003).

CHAPTER THREE

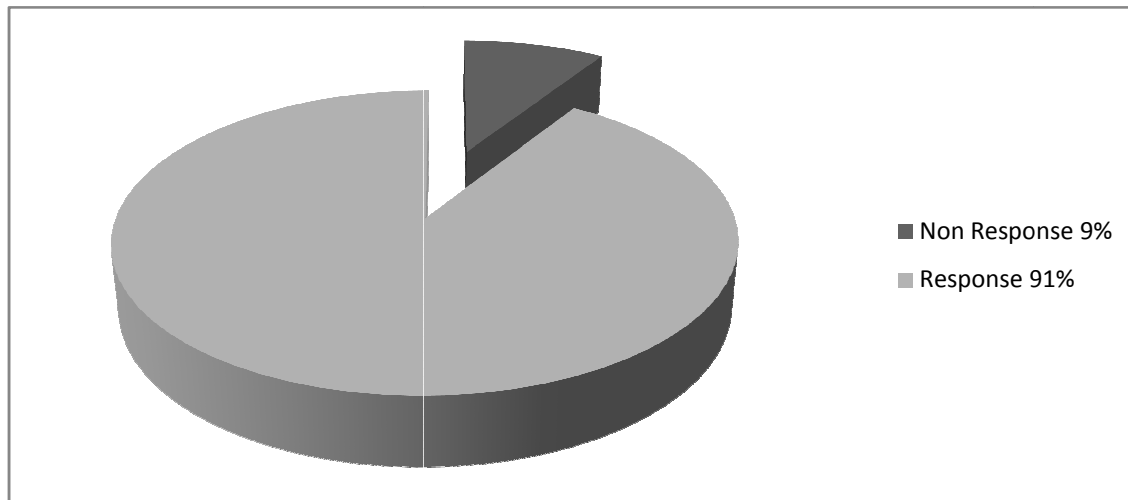
STUDY FINDINGS AND DISCUSSION

3.1 Introduction

The section presents the study findings based on the data collected. The results are done as per the objectives of the study and presented in tables and figures using hard data from secondary sources and primary data from respondents' opinions that was obtained using the questionnaire attached herewith as an appendix. Specifically this chapter will show the response rate in percentage form indicating the total number of respondents who participated in the study and the percentage number that did not. It will also present the respondents demographics; that is the percentage number of male and female that successfully participated in the study including their age groups. Education level and employment status, marital status and family size of the respondents will be presented as well. This chapter presents the key findings of the study that includes a comparison of oil retail price trend, product availability and consumer satisfaction before ERC's price regulations in December 2010 and during ERC's price regulations after December 2010. Line graphs, Charts, Tables and figures have been used for illustration, ease of understanding and clarity in presenting the study findings.

The researcher started the results section by determining the total number of respondents who participated in the study. This was important for the study because it answered the question of reliability and confidence level and success rate OF the survey. Using primary data that was collected from the respondents, the results for the response rate are presented below in a pie-chart for clarity and ease of understanding.

Figure 3.1 Response Rate



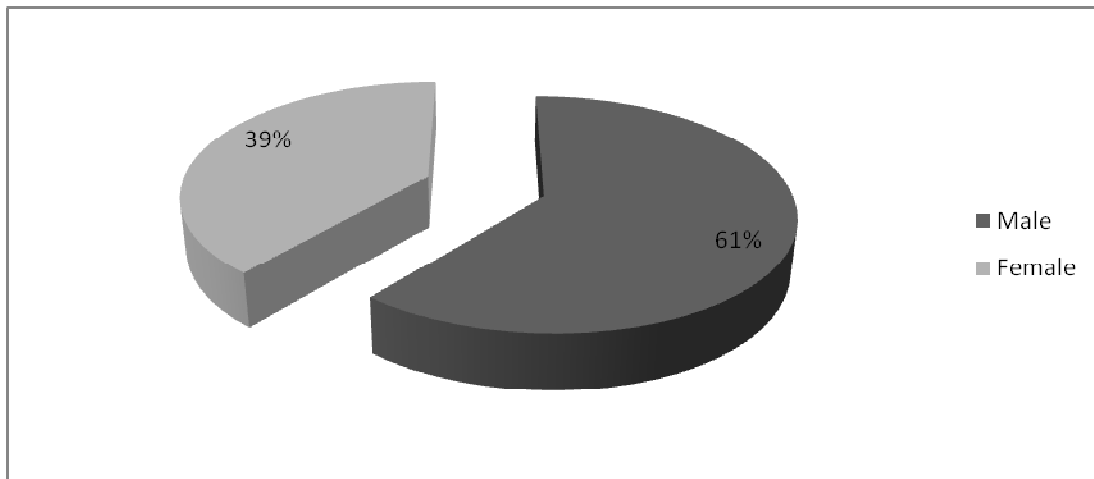
Source: The Researcher 2013

In the study, the researcher managed to collect data from 91% (n=350) of the sampled population where this is good as compared to the 75% recommended by Mugenda (2009) in her description of the required sample, as shown in Figure 3.1. This result means that the study findings can be relied upon

3.2 Respondents Demographics

After knowing that the response rate was successful, the researcher sought to find out the gender of the respondents using the primary data obtained from the respondents' opinions through a mini survey that was conducted by the researcher. The findings were presented in the figure below.

Figure 3.2 Gender of the respondents

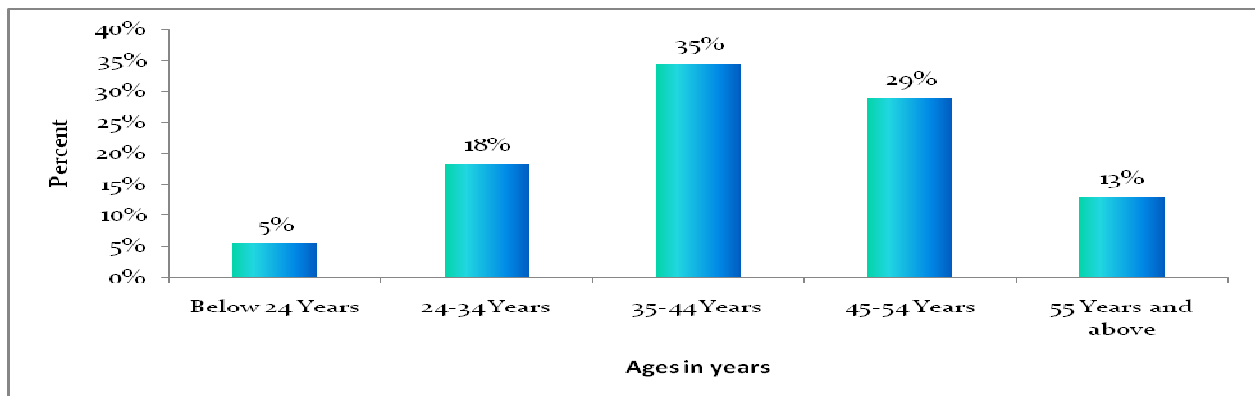


Source: The Researcher 2013

The study findings in figure 3.2 indicates that 61% (n=215) of the respondents were male while 39% (n=135) were female respondents. This result could suggest that either majority vehicle owners in Nairobi County are male or majority of the drivers in Nairobi County are Male because the target population for the study were people driving vehicles. It suggests also that males more than females bear the burden of fuel cost in Nairobi County.

The researcher then proceeded to ascertain the age groups of those who participated in the survey using the bar graph below. This was important to the study as it showed the age groups that use fuel the most. Oil markets can use this information in targeting oil consumers and in market segmentation.

Figure 3.3 Ages of the Respondents

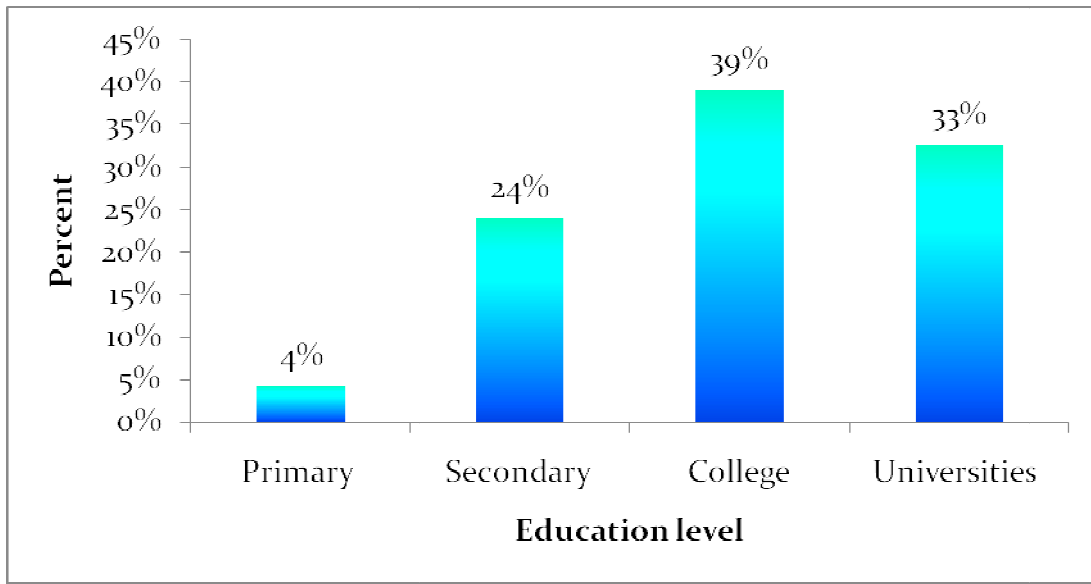


Source: The researcher 2013

The study findings in figure 3.3 indicates that majority of the respondents were in the age of 35 years to 44 years accounting for 35% (n=121) while only 5% (n=19) were aged below 18 years of age. The findings also indicate that 18% (n=64) of the respondents were aged between 24 years to 34 years and 29% (n=101) were aged between 45-54 years and 13% (n=45) were aged 55 years and above. This showed that the most active age group in oil consumption is between 35-44 followed by age group 24-34 years and therefore changes in oil prices affects them more than the other age groups. The results also showed that these two age groups bear the burden of fuel cost in Nairobi County more than any other age groups.

The next thing was the education levels of the respondents that were deemed necessary for the study. The main reason was this to satisfy the reliability and validity question. The figure below shows the educational levels of all the respondents. They were grouped in categories; universities, colleges, secondary, and primary as shown below.

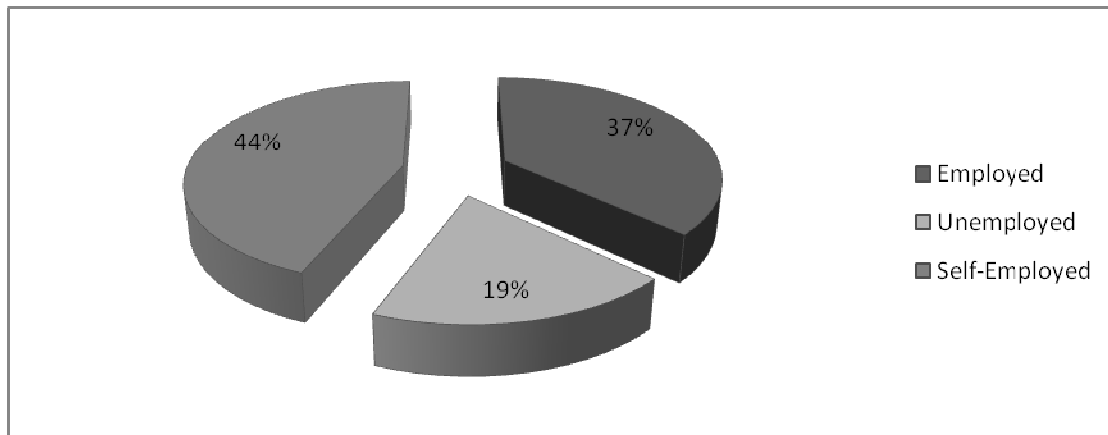
Figure 3.4 Respondents' Education level



The study findings in figure 3.4 indicates that 39% (n=137) of the respondents attained college level of education while 33% (n=114) have attained university education. The study findings also indicate that 24% (n=84) of the respondents have secondary education while only 4% (n=15) attained primary education. Majority of the respondents are well educated. This gave confidence to the researcher because the data can be relied upon.

The researcher further sought to categorise the respondents according to their employment status and illustrated the results in the figure below.

Figure 3.5 Employment status

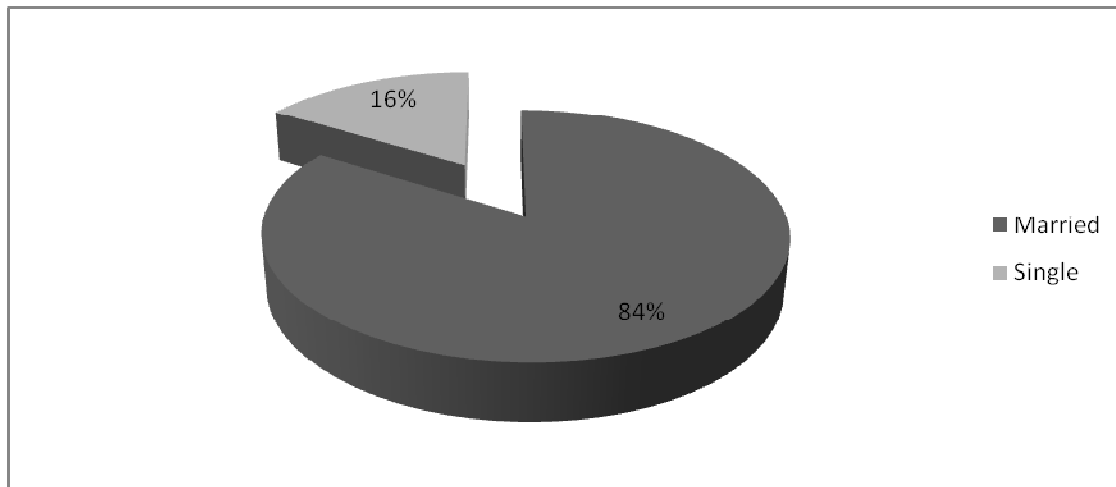


Source: The researcher 2013

The findings in figure 3.5 indicates that majority of the respondents (44%, n=155) are self-employed while the least number of respondents are unemployed accounting for 19% (n=65) and 37% (n=130) of the respondents are employed formally. From the study findings self-employed people are more affected by oil price changes and product availability because they formed the majority of the respondents. The results show that the self-employed lot provide a bigger market to oil marketers as compared to the employed group, they consume more oil products than the employed lot.

Having known the employment levels of the respondents the research sought to group them in two classes of married and singles. This was important to ascertain those who use oil products most between the married and singles. The figure below presents the results

Figure 3.6 Marital status of the respondents



Source: The researcher 2013

The study findings in figure 3.6 indicates that majority of the respondents are married accounting for 84% (n=295) of the respondents while only 16% (n=55) are single as indicated in figure 3.6. From the results, married people in Nairobi county are affected with the burden of oil price hikes and product shortages because from the figure above they rely on oil products for their day today activities.

3.3 Effects of ERC's Price Regulations on Retail Prices

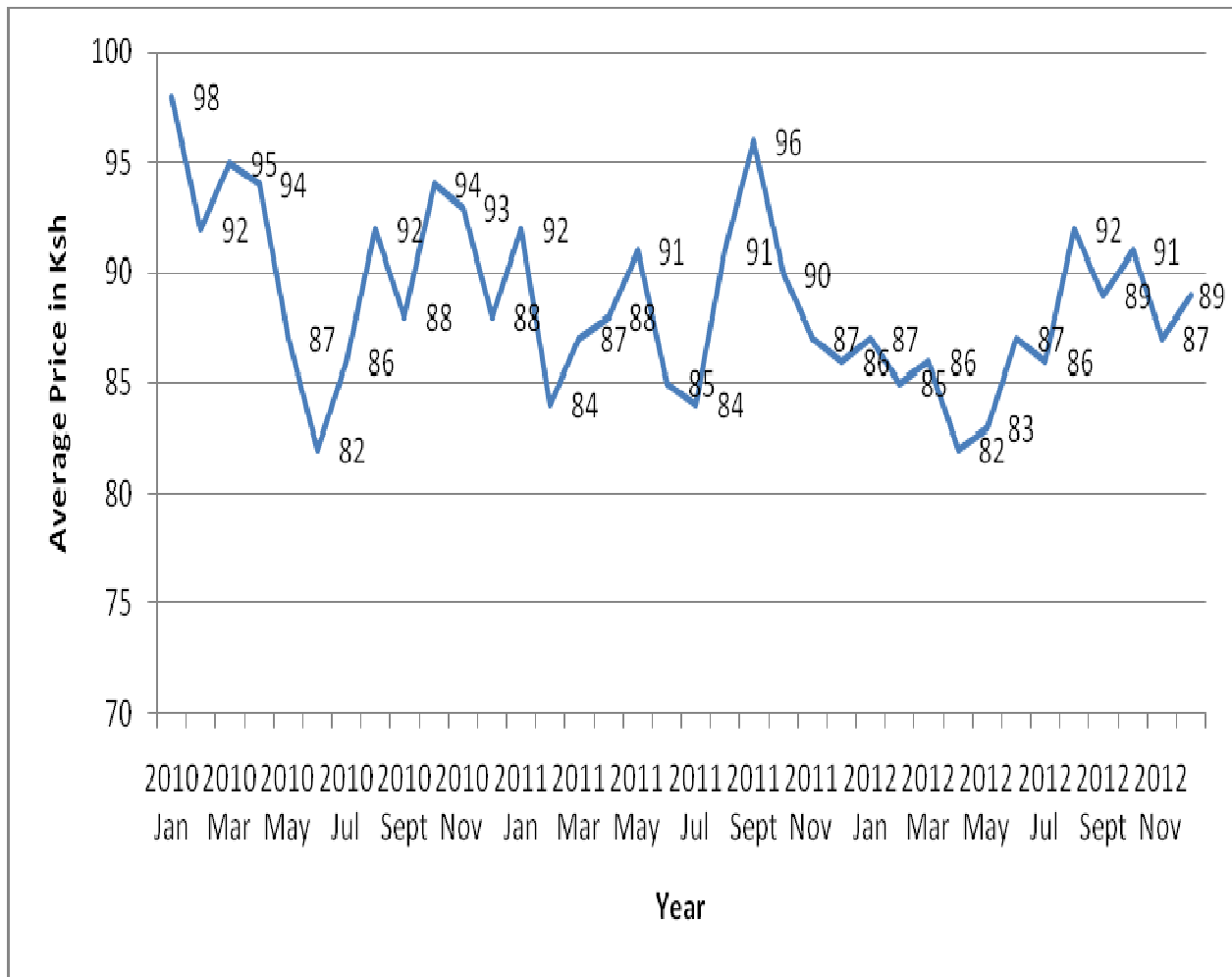
This section tells us about Hypothesis number one of the study. Hypothesis number one states that ERC's price regulations have stabilized oil price trend. The researcher used both hard data that was readily available from secondary sources and primary data from respondents opinions gathered from a mini survey conducted by the researcher to test this Hypothesis. The data collected was specifically related to three oil products under study; they include Kerosene, Automotive diesel and Petrol. The researcher also used the primary data to establish which

product among the three that was mostly used by people in Nairobi County, and it was found that Kerosene was used more by 53% for cooking and lighting, followed by Automotive diesel at 26% while Petrol was at 21%. Hard data from secondary sources was first used to present the price trend analysis in individual line graph for every product covering the period January 2010 to December 2012. This period was divided into two phases, the first phase covers the unregulated period January—November 2010 before ERC's price regulations and the second phase covers the regulated period December 2010--December 2012. The first phase forms the baseline of the study and the benchmark upon which comparisons with the second phase are based. The first phase was short because the data available was only for eleven months transition period from the free market system to the controlled market system. The researcher used a longer second phase period of two years to present a clear picture on the extent of price fluctuations. In this section, the researcher also used primary data that informed people's perceptions and presented the results in pie-charts and tables for the sole purpose of counter checking the findings from secondary data.

The findings were used to answer the overall study question which was; what is the impact of ERC's price regulations on the performance of Kenya's oil sector? and the specific ones were; what are the effects of ERC's price regulations on oil price trend?, what are the effects of ERC's price regulations on product availability? And lastly what are the effects of ERC's price regulations on consumer satisfaction? The results are presented in the figures and tables below with the study observations and discussion.

The figure below shows the prices of oil from January 2010 (eleven months before ERC's introduced price regulations in December 2010) to December 2012. It presents a comparison on the price trend for Kerosene before price regulations and during ERC's price regulations.

Figure 3.7 The price trend of kerosene from 2010-2012



Source: The Researcher 2013

The study findings in figure 3.7 indicates that price of kerosene in January was ksh.98 . it dropped ksh. 82 in the month of may, this slump was as a result of pressure by the government and the public on oil dealers to reduce oil price and the government announced that it was ready

to start price regulations, therefore oil dealers decided to quickly offload their stocks in large quantities. They did this for fear of being got up with large stocks when the government sets lower prices. This action by oil dealers flooded the market with excess supply of Kerosene than the available demand. This rare occurrence forced the prices of Kerosene down to ksh.82 in may 2010. However the prices rose again after the exhaustion of excess stock to close in November at ksh. 94. The results show that Kerosene price fluctuated with bigger margins posting a range of ksh.16 before december 2010 when ERC's price regulations began,the average price for the period was ksh.91.

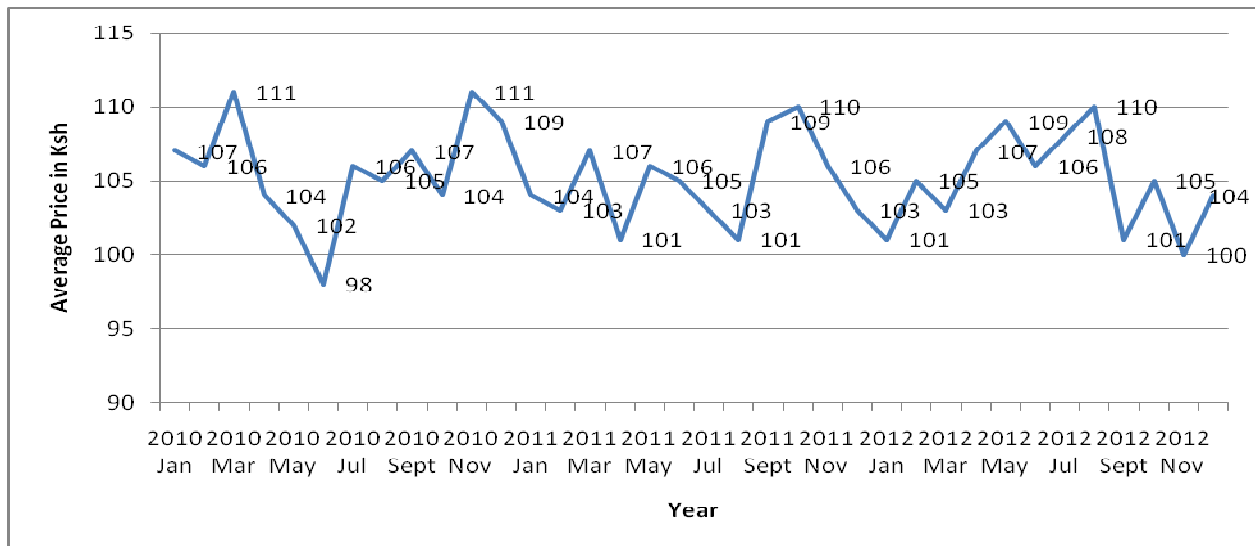
From december 2010 the price fluctuated with small margins compared to the period before December 2010, except for the month of September 2011 when the country experienced major shortages of fuel caused by unpredictably high prices on the international market plus increased demand for oil from world major oil consumers among other factors beyond the control of Kenya government (Molloo,2011).

In December 2010 ERC set the maximum selling price of Kerosene at ksh.88 and fluctuated minimally across the year to close at Ksh.87 in December 2011, posting a range of ksh. 1/=. The average price for year 2011 was ksh 88. Year 2012 started at ksh. 87 dropping to ksh. 82 in the month of march owing to low demand from consumers. Kerosene is used mostly for cooking in domestic homes and each year around this time their seems to be low price as seen in the previous year(2011) . This can be attributed to reduced consumption by domestic consumers when boarding schools are in session meaning family members in homes are less and therefore less consumption of Kerosene. The year closed at ksh. 89 , giving a range of ksh. 2/- with the mean of ksh. 87 for year 2012.

The results show that ERC’s price regulations have relatively stabilized the price trend fluctuations as compared with the range and mean for the period before price regulations in december 2010. Stable price trend reflects product availability and this means that consumers can easily predict the prices which is good for their forward planning. This will eventually improve on customer satisfaction. Arising from this observation, ERC’s price regulations should be continued because oil price trend has become relatively stable.

Having known that ERC’s price regulations significantly reduced price fluctuations for Kerosene thereby stabilizing the price trend, the researcher proceeded to compare the price trend for Automotive diesel in the diagram below the period before ERC’s price regulations (December 2010) and the period after December 2010 during ERC’s price regulations.

Figure 3.8 The price trend of automotive diesel from 2010-2012



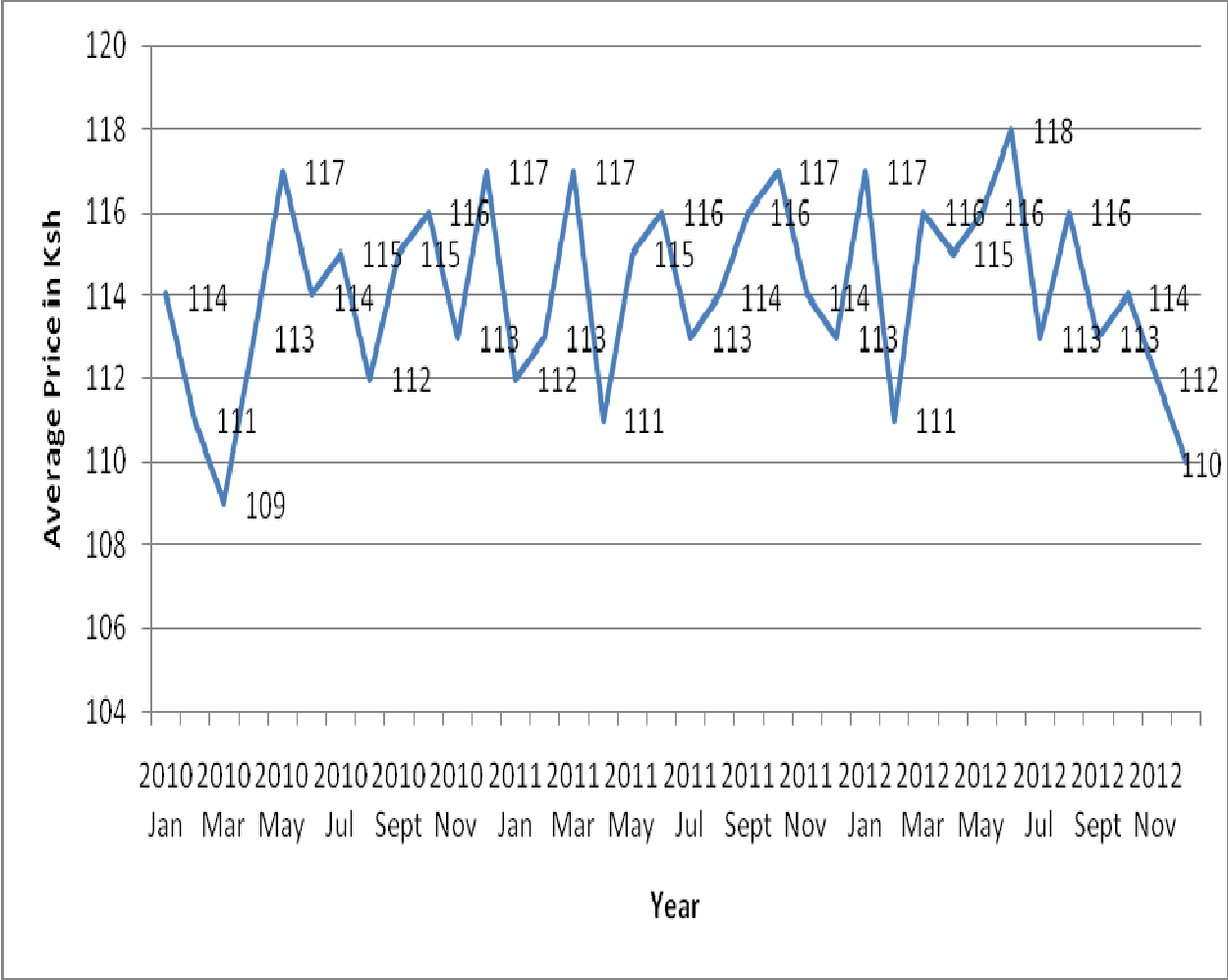
Source: The Researcher 2013

The study findings in figure 3.8 indicates that automotive diesel price was at ksh.107 in January 2010 and eased down to ksh. 98 in the month of may and June, this drop was occasioned by mounting pressure from the government and the public on oil dealers to reduce oil prices plus the government had announced the commencement date for price regulations, therefore oil dealers decided to quickly decant their stocks in large quantities. This action by oil dealers flooded the market with excess supply than the available demand. This rare occurrence forced the prices of automotive diesel down.the price rose again to ksh. 111 in November 2010. The price for diesel fluctuated with wide margins before ERC's price regulations in December 2010 posting a range of ksh. 13, with the average price of ksh.105.

In December 2010 the government set the price for diesel at ksh. 104 From the diagram above prices for diesel fluctuated with small margins from February 2011at ksh. 103 through to December of the same year at ksh 103, displaying price stability over the months, with the annual average of Ksh.ksh.104 in 2011 and a range of ksh.1/- . The diagram shows a fairly stable price trend for year 2012 starting at ksh. 101 in January and closing in December 2012 at ksh.104, returning a yearly average of ksh. 104 with arange of ksh.3. This figure clearly shows that there was stability in the price trend for Automotive during the ERC's price regulations. There researcher observed that ERC's price regulations should be encouraged because it stabilize dautomotive diesel price trend for two years period (December 2010- Decenmber 2012) that was under study.

The researcher sought to compare the price trend of Petrol before and after the ERC’s price regulations having established that ERC’s price regulations stabilized price trends for Kerosene and Automotive diesel over the two years period that was under study. The figure below shows the price trend for Petrol before and after ERC’s price regulations in December 2010.

Figure 3.9 Price Trend of Petrol from the year 2010-2012



Source: The researcher 2013

The study findings in figure 3.9 shows that price fluctuated with margins of 3/- and 4/- before December 2010 when ERC's price regulations were introduced with an average of ksh.114 over the eleven months posting a range of 8/-. The price trend for Petrol remained stable over the two next two years that is 2011 and 2012 with the fluctuations of 3/- and 4/- across the two years, posting a range of 6/- in both years. Over the same period Petrol prices returned a yearly average of Ksh. 114 for year 2011 and ksh.114 for year 2012. It was noted that although prices were high, they remained stable over the three year period under, that include the period under free market system before ERC's price regulations in December 2010 and during ERC's price regulations period December 2010- December 2012 as shown in figure 3.9 . This results means that ERC's price regulations did not have any effects on the price trend for Petrol, therefore arising from the study findings, ERC's price regulations for Petrol can be said to be meaningless and has no value to the consumers.

This study used primary data to get peoples' perceptions on the cost of fuel before ERC's price regulations in December 2010. This was done for the purposes of using the results to cross check with the findings obtained from using hard data from secondary sources. The figure below illustrates the respondents' opinion on the cost of fuel before December year 2010

Table 3.1 Cost of fuel before price regulations in the year 2010

	Frequency	Percent
Very low	14	4.0
Low	29	8.3
Fair	62	17.7
Valid High	148	42.3
Very high	97	27.7
Total	350	100.0

Source: The researcher 2013

The study findings in table 3.1 indicates that majority of the respondents indicated that the fuel prices were high before the price regulation in the year 2010 as indicated by 42.3% (n=148) while 27.2% (n=97) indicated that it was very high before 2010 regulation. The findings also indicate that 4.0% (n=14) of the respondents indicated that the prices were very low while 8.3% (n=29) indicated it was low. The results therefore shows that people in Nairobi County thinks that ERC's price regulations have made oil price more affordable compared to the period before price regulations in December year 2010.

Having known the respondents opinion on the cost of fuel before december 2010 that it was high, the researcher sought to find out the respondents perceptions on oil prices after december 2010 during the ERC's price regulations in the table below.

Table 3.2 Prices during ERC’s price regulations after year 2010

	Frequency	Percent
Very low	12	3.4
Low	14	4.0
Fair	44	12.6
Valid High	149	42.6
Very high	131	37.4
Total	350	100.0

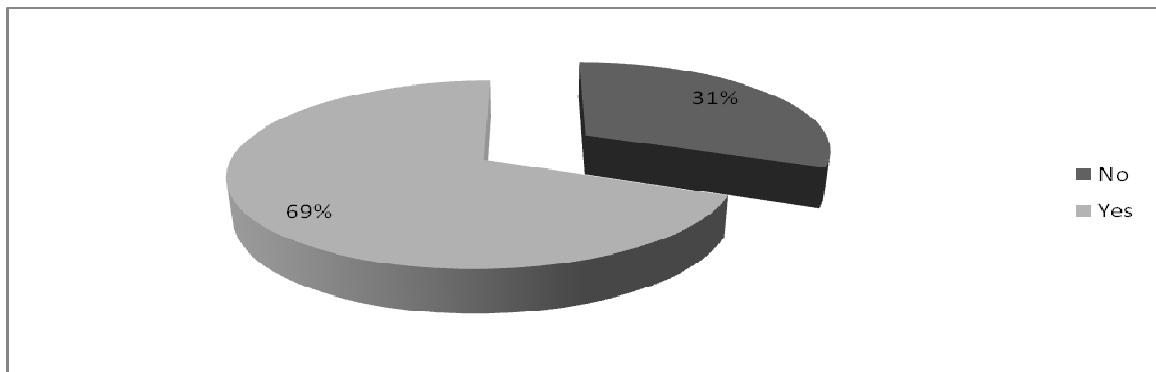
Source: The researcher 2013

The study findings in table 3.2 indicates that most of the respondents still regard the prices of fuel as high even after and during ERC’s price regulations in December year 2010 accounting for 42.6% (n=149) of the respondents while only 4.0% (n=14) of the respondents indicated that it is now low. It should be noted that although ERC’s price regulations have stabilized fuel price trend, the cost or prices of fuel remained high. This means that there are factors that are beyond ERC that influence the price of fuel. However, the study findings have answered the Hypothesis number one of the study, which stated that ERC’s oil price regulations have stabilized retail price trend, except for Petrol which it failed to have an impact, as the price trend assumed a similar trend in both periods of different market systems.

3.4 Effects of ERC’S Price Regulation on Product Availability

This section deals with testing of Hypothesis number two of the study which states that ERC’s price regulations have increased product availability. The researcher having established that price trend for Kerosene and Diesel was stabilized by ERC’s price regulations, proceeded to determine as to whether ERC’s price regulations that began in December year 2010 increased product availability. For lack of hard data from secondary sources, the researcher was limited to using only primary data gathered from the respondents’ opinions to get People’s perceptions on product availability before ERC’s price regulations in December year 2010. The researcher therefore used primary data in testing the second hypothesis of the study (“ERC’s price regulations have increased oil product availability”). While acknowledging that using primary data may not give accurate results due to significant degree of bias associated with it, the researcher used it for lack of readily available alternatives to provide a clear picture on what the situation was. The word shortage was used in the questionnaire for ease of understanding by respondents to refer to availability of oil. In the figure below, ‘YES’ meant there were shortages.

Figure 3.10 Fuel shortages / availability before 2010 ERC fuel regulation

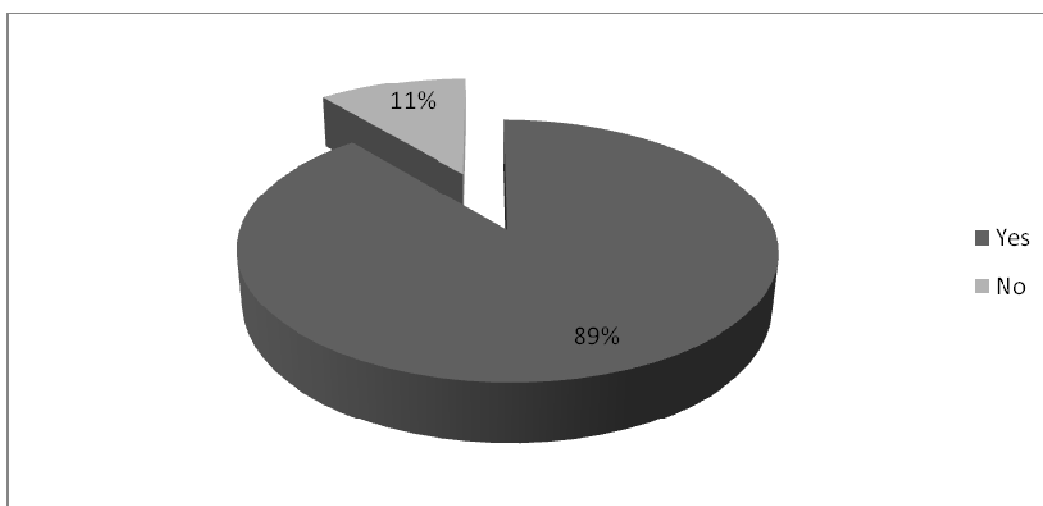


Source; The researcher 2013

The study findings in figure 3.10 indicates that majority of the respondents confirmed that there were fuel shortages before the ERC's price regulations of the fuel prices in December year 2010 as indicated by 69% (n=241) while only 31% (n=109) indicated there were no shortages. This explains why there was a bigger range in price fluctuatins of Kerosene and diesel before ERC's price regulations in December year 2010. As shown in figure 3.7 and 3.8 above.

This figure shows the percentages of those who thought there were shortages and those who did not after December year 2010. Those of 'YES' thought there are no shortages during ERC's price regulations. Using the primary data, the results were presented in the figure below.

Figure 3.11 No Fuel shortages during ERC price regulations after December year 2010



Source; the researcher 2013

The study findings in figure 3.11 indicates that 55% (n=191) of the respondnets agreed that there have been no fuel shortages in the market during ERC price regulations while 45%

(n=159) indicated that there is still fuel shortages even with ERC's price regulations. This findings explains why the price trend for oil remained stable during ERC's price regulations period. The product was readily available to consumers because monopolies and cartels had been smoothed leading to increased product availability. These study findings confirms the results in figure 3.10 and positively answers the second question and the second Hypothesis of the study which stated that ERC's price regulations increased product availability.

The researcher then proceeded to present the study findings in frequencies and percentages for ease of understanding in the table below.

Table 3.3 Availability due to regulation

	Frequency	Percent
Strongly disagree	20	5.7
Disagree	22	6.3
Not Sure	48	13.7
Valid Agree	138	39.4
Strongly agree	122	34.9
Total	350	100.0

Source: The researcher 2013

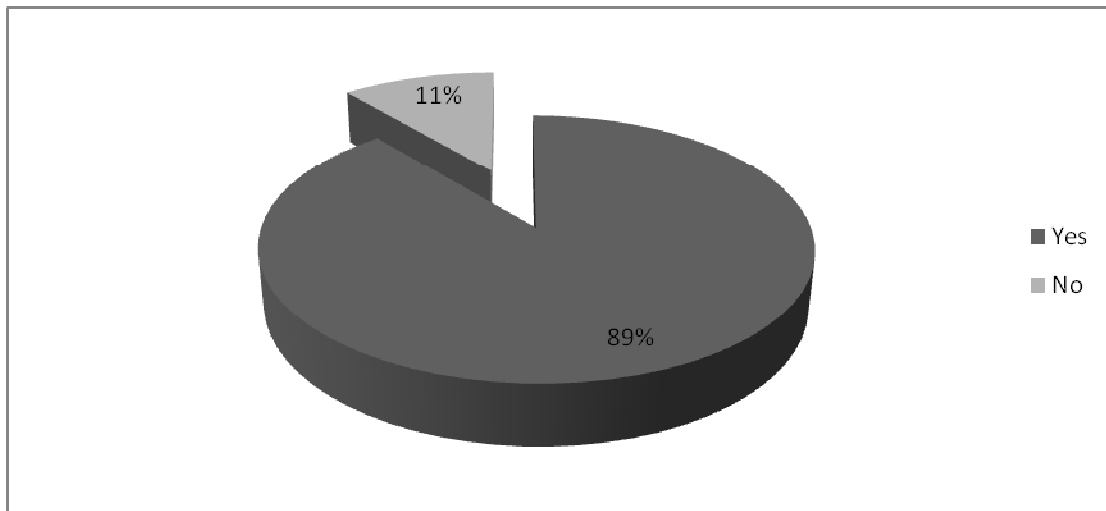
The study findings in table 3.3 indicates that majority of the respondents agreed that ERC's price regulations have increased fuel availability as indicated by 39.4% (n=138) of the respondents

while only 6.3% (n=22) of the respondents disagreed that it has increased availability. This findings explains why the price trend for oil remained stable during ERC's price regulations period. The product was readily available to consumers because monopolies and cartels had been smoothed leading to increased product availability. These study findings in table 3.3 when cross checked with the findings in figure 3.11 postively confirms and answers the second question and the second Hypothessis of the study which stated that ERC's price regulations increased product availability.

3.5 Effects on Consumer Satisfaction

The researcher used this section to answer the last question of the study that sought to determine the effects of ERC's oil price regulations on consumer satisfaction and as well test Hypothesis number three of the study which stated that ERC's oil price regulations improved consumer satisfaction. Similarly, as in the case of testing the second Hypothesis of the study, the researcher proceeded to use primary data gathered from the respondents' opinions to test hypothesis number three. Due to time and cost, the researcher was able to obtain primary data only which was used to frame people's perceptions on price regulations and consumer satisfaction. After confirming from the study findings that ERC' price regulations stabilized price trends and increased product availability in Nairobi county, the researcher was anxious to find out whether the ERC's price regulations had a positive impact on consumer satisfaction. The findings were presented in the figure below

Figure 3.12 Fuel consumers satisfied with ERC oil price regulations



Source: The researcher 2013

The study findings in figure 3.12 indicate that 89% (n=310) of the respondents affirmed that the fuel consumers are satisfied with the ERC oil price regulations while only 11% (n=40) indicated in the negative. The study has also established that consumer satisfaction has improved compared to the period before ERC's price regulations in December 2010. The study has established that respondents are satisfied with ERC price regulation on the retail price trend, because it stabilized oil price trend. They are equally satisfied with product availability because it increased with ERC's price regulations as compared to the period before price regulations in december 2010. This study findings shows improved consumer satisfaction which answers the third question and the third Hypothesis of the study that stated that ERC's price regulations have improved consumer satisfaction.

To understand better, the researcher presented the findings on consumer satisfaction in the following table using descriptive statistics like mean and standard deviation.

Table 3.4 The extent of satisfaction

	N	Mean	Std. Deviation
Indicate the extent to which you are satisfied with ERC price regulation on retail price trend	350	5.71	1.356
Indicate the extent to which you are satisfied with ERC price regulation on customer satisfaction	350	8.91	1.117
indicate the extent to which you are satisfied with ERC price regulation on product availability	350	9.11	1.277
Valid N (list wise)	350		

Source: The researcher 2013

The study findings in table 3.4 indicate that in a scale of 1-10, the mean of 5.71 indicate that the respondents are moderately satisfied with ERC price regulation on the retail price trend. The mean of 8.91 indicate that the respondents are highly satisfied with ERC price regulation on customer satisfaction while mean of 9.11 indicates the respondents are very highly satisfied with ERC price regulations on product availability. This study findings shows improved consumer satisfaction which answers the third study Hypothesis that stated that ERC's price regulations have improved consumer satisfaction. The study findings therefore affirms that ERC's price regulations have positive implications on consumer satisfaction as they were found to improve on consumer satisfaction.

CHAPTER FOUR

SUMMARY, CONCLUSION AND RECOMMENDATIONS

4.1 Summary

This study was undertaken to fill the research gap that exists by investigating effects of price regulations on the performance of Kenya's oil sector. The Research Questions for the study were: what are the effects of ERC's regulation on retail price trend? What are the effects of ERC price regulations on product availability? And what are the implications of ERC's price regulations on consumer satisfaction?

The data analyzed was presented in tables, graphs and charts for clear visualization. The study established that the price for oil remained high despite ERC's price regulations. This indicates that there are many factors that influence the prices of oil in the market. Although the ERC's price regulations reduced price trend fluctuations for Kerosene and Diesel to relative stability, it did not have any effect on petrol price trend. The fluctuations in the local market could also be attributed to the fluctuations of prices of crude oil in the world market since Kenya is an importer of crude oil. This confirms the study undertaken by Corbeau et al, 2012 in which it was indicated that fuel pricing levels are affected by numerous factors. The study has also established that fuel prices were high before the ERC's price regulations in december 2010 as indicated by most of the respondents in the mini survey that was conducted. This indicates that fuel prices were unregulated and prone to cartels to manipulate the prices to their advantage. It therefore conforms to the study of Sen et al,(2011) in which it was indicated in the study that regulations bring about certainty in price change especially if based on a legal framework. Certainty helps consumers plan their expenditures in relation to their modest income.

On the availability of the oil in the market, the study has established that the regulation of the fuel by ERC has increased fuel availability in the market. This indicates that no cartel can hoard fuel in anticipation of higher prices to exploit the consumer. This possibly confirms that there was unchecked oil prices initially that could see cartels hoard and increase prices. This therefore brought about the need for the government to regulate oil prices and protect the consumer as reported by KIPPRA (2012).

This indicates that ERC has brought confidence to oil consumers in the country. The study has also established that respondents are very highly satisfied with ERC price regulation on product availability. This confirms the study conducted by Moolo (2011) in which he indicated that consumers of oil products are satisfied when there is effective price regulations and effective price regulations can only be established through finding out the impact of oil price regulations on consumer satisfaction. Therefore the price regulations by the government of Kenya through the ERC have so far achieved the objectives of stabilizing the price trend in the market, realising the availability of oil products in the market to consumers and above all improving on consumer satisfaction.

4.2 Conclusion

Based on the findings, the study concludes that the overall question of the study was effectively answered by adequately answering the three specific questions of the study as follows; what were the effects of ERC's price regulations on the price trends of oil? From the study findings the effects noted was the Price trend stability for Kerosene and Diesel that were achieved in years 2011 and 2012 as compared to the period January- November 2010 before ERC's price

regulations. The second question was; what were the effects of ERC's price regulations on product availability? From the study findings presented in figures 3.10 and 3.11 one of the effects noted was increased availability of oil products to Nairobi County residents as compared with the period before ERC's price regulations in December 2010. The third question was; what were the implications of ERC's price regulations on consumer satisfaction? From the study findings the implications noted were to do with improvement on consumer satisfaction which was achieved as compared to the period before ERC's price regulations in December 2010. From the overall findings, the study therefore concludes that ERC's price regulations have a positive impact on the performance of the oil sector. The regulations will most likely enhance the performance of the oil sector.

4.3 Recommendation

The study recommends that government and the policy makers in the energy sector should improve the ERC Act No. 12 of 2006 to give the agency more supervisory and disciplinary powers to ensure strict compliance of regulations by all in order to stabilize the prices and fully eliminate the cartels that may take advantage of loop holes in the existing Act to manipulate the oil market in Kenya to their selfish gain by reaping maximum profits unjustly through unwarranted price hikes.

The study recommends that the government and the ERC should inform the public on a monthly basis regarding available stocks of oil in the country and the changes in price on both local and international market. This will effectively arrest monopolistic behavior and artificial shortages that may be created by unscrupulous oil marketers and as well reduce the uncertainty about the

future availability of oil in the market. The study recommends that there should be proper auditing and supervision mechanism of the retailers in the market to adhere to the regulations as set by the ERC, in order to improve customer satisfaction.

The study recommends that the government should modernize and expand the oil refinery in Mombasa. This will enhance product availability, particularly in the wake of oil discoveries in the country. Crude oil drilled locally will be refined locally and supplied and distributed locally. This will lead to improved confidence and satisfaction of oil consumers in the country with improved performance of the energy sector.

4.4 Further Studies

The study recommends that there should be a study to determine factors that will help the government achieve and maintain low and stable oil prices in Kenya. Similarly studies need to be done on the impact of ERC's price regulations on the performance of other sectors of the economy.

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9. In your opinion, how was the trading cost of fuel before ERC’s price regulations

Very low

Low

Fair

High

Very High

10. In your opinion rate the following questions from 1 – 5 (5 – strongly agree, 4 – agree, 3 – neutral, 2 – disagree and 1 – strongly disagree) price regulations by the ERC

Questions	5	4	3	2	1
The ERC price regulations have stabilized pump prices					
ERC’s price regulations have increased fuel availability					
Oil retail price in Kenya is solely determined by ERC					
ERC’s price regulations have encouraged more oil dealers to join the market					

Section D: Respondent opinion on Oil Price Regulation effect on Customer Satisfaction

11. In your opinion, are fuel consumers satisfied with ERC oil price regulations?

Yes

No

12. In a scale of 1-10 where 1 is very low (10%) and 10 is very high (100%), indicate the extent to which you are satisfied with ERC price regulation on retail price trend

13. In a scale of 1-10 where 1 is very low (10%) and 10 is very high (100%), indicate the extent to which you are satisfied with ERC price regulation on product availability

14. In a scale of 1-10 where 1 is very low (10%) and 10 is very high (100%), indicate the extent to which you are satisfied with ERC price regulation on customer satisfaction

Explain:

15. Did you experience fuel shortages in the country before ERC's price regulations in the year 2010? Yes

No

16. Have you experienced fuel shortages during ERC's price regulations that started in the year 2010? Yes

No

17. Are there oil cartels/groups in Kenya formed by oil suppliers to control oil business?

Yes

No

Explain:

18. Is Kenya Pipeline Company (KPC) and Kipevu Oil Supply Facility (KOSF) utilizing there full capacity to ensure consistent oil supply in the country? Yes

No

Explain:

Recommendations to ERC:

THANK YOU FOR YOUR TIME