IMPLICATIONS OF GENERIC PHARMACEUTICAL PRODUCTS ON THE MARKET SHARE OF ORIGINAL PHARMACEUTICAL PRODUCT

BY

DINA A. ODUOL

UNITED STATES INTERNATIONAL UNIVERSITY

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IMPLICATIONS OF GENERIC PHARMACEUTICAL PRODUCTS ON THE MARKET SHARE OF THE ORIGINAL PHARMACEUTICAL PRODUCTS

BY

DINA A. ODUOL

A Project Report Submitted to the School of Business in Partial Fulfillment of the Requirement for the Degree of Masters in Business Administration (MBA)

SPRING 2015
STUDENT’S DECLARATION

I, the undersigned, declare that this is my original work and have not been submitted to any other college, institution or university other than United States International University - Africa for academic credit.

Signed __________________________ Date: __________________________

Dina A.Oduol [638748]

This project report has been presented for examination with my approval as the appointed supervisor.

Signed __________________________ Date: __________________________

Professor Francis Wambalaba

Signed __________________________ Date: __________________________

Dean, Chandaria School of Business

Signed __________________________ Date: __________________________

Deputy Vice Chancellor, Academic Affairs
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ABSTRACT

The purpose of this study was to determine the implications of generic pharmaceutical products on the market share of original pharmaceutical products. The research questions that were investigated at length included the effects of generic pharmaceutical product market share, price and marketing factors on the market share of original pharmaceutical product. A descriptive research design was adopted which indicated dependent variable as the market share of original product and independent variables as the effects of market share, price and marketing factors of the generic products. The population of the study comprised of the pharmacy technologists employed at the chemists located in the Central Business District (CBD) region of Nairobi. This study was conducted among 150 chemists that were randomly selected within the CBD. The sampling frame for this study was supposed to be employee database from the various 150 chemists that had been selected. Convenienc sampling, a non-probability sampling technique was used. Two pharmacy technologists were sampled from each of the 5 employees in each of the 150 chemists which resulted to a sample size of 300 from an estimated population of 750 pharmacy technologists. Questionnaires were the primary source used to collect data and a pilot test was done before the actual research was conducted. A total of 300 questionnaires were issued to the respondents but only 276 were filled and returned successfully for analysis resulting into a response rate of 92%.

The major findings with regard to the effects of generic pharmaceutical product market share on original pharmaceutical product market share were that, generic penetration had been greatly enhanced by intensive marketing activities by the generic firms. Government intervention had also encouraged generic penetration mainly to bring about competition and increased insurance coverage which recommended more of the generic products. It was also observed that generic products were dispensed at a higher rate compared to original products and a sharp drop in the market share of original product was highly linked to the entry of generic product.

Major findings with regard to the effects of generic pharmaceutical prices on the market share of the original product highlighted the fact that the government of Kenya neither regulated nor allowed increase of prices due to high quality of pharmaceutical products. It was also observed that most third party payers not only insisted on a compulsory substitution
system with the cheapest generic drug available for every drug dispensed but also assigned a large proportion of insurance reimbursement to generic medicine as opposed to original medicine. Further findings revealed that price competition among the generic pharmaceutical products led to price undercutting and that subsequent generic entrants were bound to set their prices much lower than the first entrants. The results also revealed that patients were aware that indeed generic medicine existed and actually went for them because they were cheaper than the original pharmaceutical medicine.

Major findings with regard to the effects of generic pharmaceutical marketing factors on the market share of the original product revealed that effects of advertising of generic medicine did not decline with time while that of original medicine declined with time. Consumers searched through internet to acquire knowledge about availability of generic versions of brands that retailed at a cheaper price. Furthermore, most switching conducted at the pharmacy was due to economic status of the patient and special promotions conducted by the pharmaceutical companies.

The following conclusions were drawn from the study. The market share of generic products registered an upward trend while that of original products declined. This showed that generic product growing market share contributed to the decline in that of original product in the pharmaceutical industry. The low prices of generic products relative to original products resulted into the generic products dispensing at a higher rate than the original products which showed that the low generic prices led to a decline in original product market share. Generic firms were more aggressive in their marketing than original firms which showed that intensive marketing by generic firms contributed to decrease in original pharmaceutical product market share.

The following recommendations were highlighted from the study. To curb the increasing trend in the market share of the generic products, the original companies should intensify their marketing activities especially to the third party payers and enter contractual agreement with them to use their brands. The original pharmaceutical firms should consider, giving incentives to those who purchase their brands to encourage a repeat purchase from the consumers which would lead to customer loyalty. Factors like special promotions conducted at the pharmacy by the generic firms which would result into brand switching should be
picked up aggressively by the original companies to enable them convert all the prescriptions that they generate from the doctors to sales figures.
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CHAPTER 1

1.0 INTRODUCTION

1.1 Background of the Study

Generic drugs contain an identical chemical as brand-name drugs. They are marketed when their brand-name equivalents come to the end of their patent life at a fraction of the cost. The advantage of generic prescription drug use is its price benefit both to the customer and government. Governments, through their healthcare policies, have supported the use of generic drugs as a means of cost containment, thereby ensuring that a generic medicine is marketed at a price less than the branded drug. This has encouraged most community pharmacists, to adopt generic substitution practices. Generic substitution is an international phenomenon which is embraced in most westernized countries. It mainly occurs within a personal selling context in the pharmacy and studies have shown that it is being influenced by factors like branding (Gill, Helkkula, Cobbeli and White 2010).

According to Ball and Mackert (2013), the world is turning generic which is borrowed from the latest trends in the drug industry, according to International Medical Services of Health. In 2012, according to the healthcare industry analytics firm, dollar sales of drugs fell by 1% to $325.7 billion, but prescriptions grew by 1.2% as generic drugs' share of total drugs dispensed grew to nearly 83%. For the 12-month period that ended in March 2013, dollar growth fell by 4% over-all, including a 6.2% fall in dollar growth for branded drugs, while generic dollar growth increased by 5%. Prescription volume grew almost 3% overall, but branded prescriptions fell by 16%, and generic prescriptions grew by nearly 8%, according to IMS. In addition to the growth of generics and the decline of branded drugs overall, specialty drugs which are used to treat complex, chronic health conditions have equally experienced a significant growth, a trend that is likely to continue as the population ages and more treatments become available for difficult-to-treat diseases.

Policies designed to improve the efficiency of pharmaceutical markets have been implemented both in US and Europe as well. The (US) Drug Competition and Patent Term Restoration Act of 1984 (Waxman-Hatch Act) had two objectives. The first objective was to restore the effective patent terms, which had been eroded substantially over the years. This was basically due to more complex and time consuming approval procedures. The second
one was to increase generic competition, once patents expired. In order to achieve the latter, approval procedures for generic drugs were changed considerably such that instead of having to redo all clinical trials themselves, a generic firm could have its product approved by merely showing that it is bioequivalent to the brand name product. The testing procedures required to do this were made less costly than the original safety and efficacy tests that the brand name manufacturer had to conduct. These changes in approval procedures have also been made in Europe. For example in Sweden, an applicant for a license to sell a generic drug, does not have to prove pharmacological and toxicological studies if he can prove that the new pharmaceutical product is equal to another pharmaceutical product that has been approved for sale in Sweden or another country within the European Union and is currently selling in Sweden. Therefore, both US and European governments have changed the approval procedures for generic drugs in order to increase generic entry and competition in the pharmaceuticals market (Hellstrom, 2010).

According to Herman (2012), the Hatch-Waxman Act further encourages generic companies to challenge the brand name companies at the expiry of their patents in Columbia. This is done by giving the first generic drug company to file for Food and Drug Administration (FDA) approval 180 days of generic exclusivity when the company introduces its generic drug on the market in competition with the brand’s drug.

A comparative analysis of generic markets was undertaken in the year 2000 within five European countries which were France, Germany, Italy, The Netherlands and The United Kingdom. The results of the study showed that generic share varied from 3 percent for France to 40 percent for the UK. In Australia, the share of prescription generic medicine has been reported as 25 percent and in Finland as 90 percent. This was the first study undertaken in the area of generic substitution that applied a phenomenological approach to the investigation of the subjective experiences of customers and pharmacists in Australia, Finland and Italy. The Australian, Finnish, Italian collaboration on this study resulted from the researchers’ attendance at a conference session on the use of narrative to study experiential phenomenon. The researchers together identified generic substitution as an area where limited attention had been paid to subjective customer and pharmacist experiences, especially given that substitution was practiced in most westernized countries (Gill, et al, 2010).
In Africa, approximately half of the population lacks regular access to essential medicines and almost 90% of the medicine is imported. The imported medicines are largely sourced from Indian generic manufacturers mainly due to a reliable low cost that they extend to African Countries. This arrangement is largely sustained by donors and campaigners for access to medicine (Chaudhuri, Mackintosh and Mujinja 2010).

African pharmaceutical market size is very small in global terms with World pharmaceutical production and consumption of the products concentrated in the high income countries. Out of a global pharmaceutical market of US$744008 million in 2006, the entire Middle East and Africa accounted for only $14824 million which is approximately 2%. The largest pharmaceutical market in Africa is South Africa with sales of $1761 million which is very small when compared to sales in China ($20800 million) and India ($9423). Africa’s total pharmaceutical imports for 53 countries in 2006 amounted to only $6.6 billion of which 33 African countries in the least developed country category imported only $1.6 billion (Chaudhuri et al, 2010).

The South African pharmaceutical industry is populated by almost all the major global pharmaceutical manufacturers who produce and perform research and development locally. The industry presents a dualistic nature in that it operates in two different market sectors, private and public, accounting for, respectively, 80 and 20 per cent of the industry sales. The state acquires pharmaceutical products through competitive tenders issued for the bulk purchase of predominantly generic, usually non-branded, products. In the case of the private market, purchases are usually initiated by individual prescribing doctors, with reimbursements by medical insurers. Many drugs sold are under patent protection, usually marketed under brand names, as are the generic products in this market segment. The industry is characterized by therapeutic submarkets (or segments) between which the cross-elasticity of demand is low or negative. Within the segmented markets, the possibility of substitution exists, implying a positive cross-elasticity of demand. Further studies in 2011 reveal that 50 per cent of the patients in South Africa that are insured with medical aid schemes use generic medicines when they are available. This is an increase from 48.8 per cent in 2009 within the private pharmaceutical industry in South Africa (Smit and Bradenkamp, 2013).
In East Africa, the Tanzanian pharmaceutical market is poorly documented, with no regularly published data available. The market share was estimated at $110 million in 2004-2005 with $78 million (71%) of the pharmaceutical products supplied from imported sources and the remaining 29 per cent from local production. The percentage of local production remained broadly the same as in an estimated market of $140 million in 2007 (Chaudhuri et al, 2010).

According to Kenya National Pharmaceutical Policy report (KNPP, 2010) the pharmaceutical sector in Kenya is part of a specialized and highly globalized industry in which research, products, trade, personnel and services are linked in a complex and dynamic matrix of health, economic and political issues. Ensuring access to medicine is one of the targets of the Millennium Development Goal (MDG’s) in Kenya which highly supports their vision of becoming a well-governed pharmaceutical sector which make essential medicines accessible to all Kenyans thus contributing to social and economic development.

The population in Kenya has grown from 26.8 Million in 1994 to about 39 Million in 2009. The country’s Human Development Index (HDI) for 2007 was 0.541 which ranked it to be number 147 out of 182 countries with a Human Poverty Index (HPI-I) of 29.5% ranking the country at number 92 out of 135 developing countries for which index was calculated. Kenya’s pharmaceutical sector has been evolving since independence which has made it a significant contributor to the economy today with a value of US $ 228 million as of 2008. Poverty has contributed to low consumption of health services which has led to the government reducing the user fees and improving public supply of essential medicines which has greatly increased the utilization of health care among the poor. The public health care system is the major provider of health services accounting for 53% of health facilities and 59% of all admissions. These facilities account for 57% of total outpatient visits while private and mission health facilities account for 18% and 6% respectively with about 15% of visits to retail pharmacy. Promoting use of generics, price competition through generic procurement, prescribing and dispensing as well as increased public financing of essential medicines are further cited as various options in improving affordability of essential drugs (Kenya National Pharmaceutical Policy, 2010).

One strategic response by brand name firms who endeavor to counteract generic competition has been increasingly to file large number of patents to each of their drugs. The assumption
behind this is that the generics will not be able to invalidate all the patents and thus the continued validity of at least one of the brands prevents generic entry. This process is known as ever greening and it leads to patents of varying strengths and quality. Most of the generic firms that would like to enjoy 180 days of exclusivity rush to challenge the weak patents and not the strong ones which are not worth challenging. Generic firms who would like to enjoy 180 days exclusivity after the strong patents have expired have recently adopted a new strategic response of filing with the FDA challenging only the weak patent and then requesting the court for a stay of the subsequent patent litigation for many years until the strong patent is about to expire. The stay would allow enough time to elapse such that the generic victory to the weak patent would allow the firm to launch its product with exclusivity upon the expiration of the strong patent. This stay has an anticompetitive consequence which harms consumers in that it completely excludes competition during that period of time since it also prevents subsequent challenges to the brand’s patents but at the end of the period, the brand company will be looking at a completely competitive landscape which would automatically force prices down (Herman, 2013).

Pfizer, a renowned multinational company adopted this strategy for their brand Viagra. Viagra has two relevant patents, the first was set to expire in March 27, 2012 which claimed the invention of sildenafil, the active ingredient in Viagra and the second patent was set to expire on October 22, 2019 which covered the use of Viagra in treatment of erectile dysfunction (ED). On December 17, 2004, the generic manufacturer Teva, filed an application to challenge only the later expiring patent. Initially, Pfizer did not sue and tentatively FDA approved Teva’s application meaning that it would only be able to launch a generic version after the patent expires in March 2012. In March 2010, Teva notified Pfizer of its ANDA (Abbreviated New Drug Application) and Pfizer sued Teva on this basis, since patent litigation usually took around two years to complete such that if Teva would win, the victory would occur around the time that the 2012 patent would expire which would enable Teva to launch its generic brand with exclusivity. If Pfizer had sued Teva back in 2004, a Teva victory would have caused it to forfeit exclusivity. Seemingly, the six year delay appeared to be timed entirely to ensure that if Teva had won the lawsuit, it could enter the market with exclusivity (Herman, 2012).
Large pharmaceutical companies are highly profitable and large amounts of money are spent on the marketing of medical products to consumers and doctors. Effective marketing of the originator brand medicine may encourage brand loyalty among doctors and may support the perception that generic medicines are inferior to their originator brand counterparts (Gill, et al, 2010).

1.2 Statement of the Problem

From the late 1970s, pharmacy practice studies have demonstrated that substitution of brand-name drugs by generic drugs is increasing. Further studies since the 1980s have also focused on comparing the views of customers, physicians and pharmacists, and examined their attitudes, perceptions of risk and knowledge of generic medication. The majority of these studies have been conducted in the United State of America. The overall impact of generic drugs on increasing prescription drug cost was visible since 2003 when growth rate of prescription drug cost started decreasing rapidly and was at its lowest in 2007 since 1963 (Dubey and Dubey, 2010).

Consumers’ responses to generic substitution are mixed, with some opposition arising from the belief that lower cost equates to substandard treatment or, alternatively, from a real reverse placebo effect, where the expectations and classical conditioning of the patient’s interaction with the drug is altered, rendering it genuinely less effective. Even some practitioners stand to be convinced that they can achieve the same treatment outcomes with generic substitutes, especially when outcomes are hard to objectively quantify (Gill, et al, 2010).

More recent research have also indicated that, the rate of generic substitution has continued to increase, especially as the practice of generic substitution has been facilitated by health administrations in many westernized countries (Gill, et al, 2010).

Following the exposition of bribery of US Federal Drug Authority officials, the provision of false data by two US drug companies of poor manufacturing practices for example, substandard generic epilepsy drugs and other unethical organizational behaviors within the generic drug industry, in 1989 the issue of the equivalence of brand and generic medications was added to the international research agenda (Dubey and Dubey, 2010).
The private pharmaceutical industry worldwide, not only dominates the industry in terms of value, but also embraces the classical market model of supply and demand. Very little research is available to guide a marketer of a branded medicine in setting a price that will assist in maintaining an acceptable level of market share and profit in the face of generic competition ((Smit and Bradenkamp,2013).

All the above, attempted to highlight the extent to which generic players seemed to have jeopardized existence of innovator companies and thus the process of bringing new drugs to address emerging health challenges. Despite the many research work that had been conducted in the various parts of the world regarding original versus generic pharmaceutical products, very little had been done in Kenya. Recorded research on the effects of the prices of generic pharmaceutical products on the market share of the original pharmaceutical products was limited. Further little had also been done to determine the effects of marketing factors conducted by the generic companies on the market share of the original pharmaceutical products.

1.3 Purpose of the Study

The purpose of this study was to determine the implications of generic pharmaceutical products on the market share of original pharmaceutical products.

1.4 Research Questions

1.4.1 How does the market share of generic pharmaceutical products affect the market share of the original pharmaceutical products?

1.4.2 What are the effects of generic pharmaceutical product price on the market share of the original pharmaceutical products?

1.4.3 What are the effects of the generic pharmaceutical products marketing factors on the original pharmaceutical products market share?

1.5 Importance of the Study

Apart from its academic purpose, this research is of great benefit to the medical profession, pharmaceutical industry and patients who are the indirect consumers. The results of the study outlined the effects of marketing factors conducted by the generic firms on the market share
of the original products and thus from this standard strategies could be developed to curb the generics from taking over the market share of the original companies.

1.5.1 The Healthcare Profession

The study brought to the fore a wealth of knowledge about both the original and the generic pharmaceutical product. Better understanding between the two would highly influence the practice of a medical practitioner, in that in case of severe infection or critical illness presented by a patient, the doctor would automatically opt to prescribe the one with a higher efficacy. Consequently, this would also impact the practice of the pharmacist in that they would be ethical enough to dispense that which the doctor has prescribed.

1.5.2 The Pharmaceutical Industry

This industry consisted of local manufacturers, importers, distributors, wholesalers, promoters, sales representatives and retailers. As highlighted previously, it could also be largely subdivided into two major groups (original and generic companies). This study brought an enormous impact on the operations of the original companies since it highlighted the lose they incurred in sales with reference to the generic companies. The understanding of the various avenues utilized by the generic companies in penetrating the market could facilitate in proper strategy formulation to defend the original product market share.

1.5.3 The Patients

These were the sole beneficiaries of the healthcare practices. The research empowered them with a better understanding of the original and generic pharmaceutical products such that they would start appreciating the differences in terms of the retail prices. Furthermore, through the doctors, they would enjoy quality health care.

1.5.4 Academicians and Researchers

Scholars and Researchers benefitted from this study in that they used it for future reference and learning material when researching on related topics. For academicians, this research made a contribution towards understanding the basic concepts of drugs which was the pillar of quality healthcare today.
1.5.5 The Government

The study would provoke the authority bodies associated with registration of drugs within the country to enforce the law regarding the same with due diligence especially during the patency periods. Furthermore, when the original companies come up with proper strategies to defend their market share, they would invest more in doing research on the emerging infectious and chronic diseases which would be of great help to the public.

1.6 Scope of the Study

The research focused on the impacts of generic pharmaceutical products on the market share of original pharmaceutical products. Of all the pharmaceutical firms operating in Kenya, about 85% percent are located within Nairobi County, approximately 150 in number. There are extensive medical practices in Nairobi County, given that the largest public hospitals, private hospitals and almost 90% of consultant physicians are based there. The geographical scope of this study was the CBD in Nairobi. The population of the study composed of mainly pharmacists employed in the pharmacies established in this region. Non-probability sampling method was used to pick out a sample of pharmacy technologists who were the respondents in this study. The study was conducted within a timeframe of four months from September 2014 to November 2014. The probable limitations that were expected in this study included, incidences of pharmacists who were not qualified, respondent’s errors in answering the questionnaires and researcher errors in data recording and analysis.

1.7 Terminologies

1.7.1 Pharmaceuticals

Substances taken to cure or alleviate any symptoms of illness or medical condition in order to prevent an illness that is likely to occur in future due to predispositions. They include medication in form of tablets, syrups, vials, powders, suspensions, pessaries, ointment and creams (World Health Organisation, 2009).

1.7.2 Physicians

A physician is a medical practioner who practices medicine and is concerned with restoring human health through the study, diagnosis and treatment of disease and injury. They include
pediatricians, surgeons, anesthetists, gynecologists, obstetrics and others (Royal College of Physicians, 2009).

1.7.3 Pharmacist

A health professional that typically takes request for medicine or drugs from a prescribing healthcare provider in the form of a medical prescription and dispenses the same medication to a patient and at the same time offers counsel on the proper use and adverse effects of that medication optimizing and monitoring drug therapy in collaboration with physicians or other healthcare professionals (WHO, 2009).

1.7.4 Generic drug

A generic drug is a drug that has the same ingredients as the original or Brand-name prescription drug (Gill, et al., 2010, p.375).

1.7.5 Patents

Patents are agreements with regulatory authorities that allow companies the exclusive rights to the use and profits of a novel pharmaceutical for a limited term (Loveet, 2009).

1.7.6 Medicines

A medicine is a means of administering drugs to the body in a safe, efficient, reproducible and convenient manner (Mwagiru, 2005).

1.7.7 Promotion

Any activity undertaken, organized or sponsored by a pharmaceutical company which is directed at healthcare professionals to promote the prescription, recommendation, supply, administration or consumption of its pharmaceutical products through all methods of communication including the internet (International Federation of Pharmaceutical Manufacturers Association, 2012).

1.7.8 Pharmaceutical product

All pharmaceutical or biological products which are intended to be used on the prescription of or under the supervision of a healthcare professional, and which are intended for use in the diagnosis, treatment or prevention of disease in humans, or to affect the structure or any function of the human body (IFPMA, 2012).
1.7.9 Healthcare professional

Any member of the medical, dental, pharmacy or nursing professions or any other person who in the course of his or her professional activities may prescribe, recommend, purchase, supply or administer a pharmaceutical product (IFPMA, 2012).

1.8 Chapter Summary

The key issues that arose from this chapter were that generic drugs contained an identical chemical as brand-name drugs. They were marketed when their brand-name equivalents came to the end of their patent life at a fraction of the cost. Governments, through their healthcare policies, had supported the use of generic drugs as a means of cost containment, thereby ensuring that a generic medicine was marketed at a price less than the branded drug. The world was turning generic which was borrowed from the latest trends in the drug industry, according to International Medical Services of Health. In addition to the growth of generics and the decline of branded drugs overall, specialty drugs which were used to treat complex, chronic health conditions had also experienced a significant growth, a trend that was likely to continue as the population aged and more treatments became available for difficult-to-treat diseases. In Africa, approximately half of the population lacked regular access to essential medicines and almost 90% of the medicine was imported. The imported medicines were largely sourced from Indian generic manufacturers mainly due to a reliable low cost that they extended to African Countries. In Kenya, due to the high poverty levels the government was promoting the use of generics, price competition through generic procurement, prescribing and dispensing as well as increased public financing of essential medicines. The rate of generic substitution had continued to increase, especially as the practice of generic substitution had been facilitated by health administrations in many westernized countries. The overall impact of generic drugs on increasing prescription drug cost was visible since 2003 when growth rate of prescription drug cost started decreasing rapidly and was at its lowest in 2007 since 1963. Effective marketing of the originator brand medicine was suggested that it could encourage brand loyalty among doctors and may support the perception that generic medicines were inferior to their originator brand counterparts.
This study mainly focused on determining the impacts of generic pharmaceutical products on the market share of original pharmaceutical products. The research evaluated in depth the effects of market share, price and marketing factors of the generic pharmaceutical products on the market share of the original pharmaceutical products which was the dependent variable. Apart from the academic purpose of this study, it would also be of great benefit to the healthcare profession, pharmaceutical industry, patients, Academicians and the Government. The geographical scope of this study was the CBD in Nairobi. The population of the study composed of mainly pharmacists employed in the pharmacies established in this region. Non-probability sampling method was used to pick out a sample of pharmacy technologists who were the respondents in this study. The study was conducted within a timeframe of four months from September 2014 to November 2014. The probable limitations that were expected in this study included, incidences of pharmacists who were not qualified, respondent’s errors in answering the questionnaires and researcher errors in data recording and analysis.

The subsequent chapters of this research project report comprised of chapter 2, literature review, which would present a review of the literature related to the problem and the purpose of this study, chapter 3, research methodology, which would provide explanations and description of the methods and procedures which would be used in conducting the study, chapter 4, which comprised of analysis and interpretation of results and chapter 5; with summary, discussion, conclusion and recommendations.
CHAPTER 2

2.0 LITERATURE REVIEW

2.1 Introduction

This chapter reviewed the critical points of current knowledge and or methodological approaches on a particular topic. The purpose of this literature review was to look at what other scholars had written in the recent past globally, regionally and locally regarding generic pharmaceutical products and their effects on market share of original pharmaceutical product. This chapter also examined in depth the effects of generic pharmaceutical product price, quality and marketing factors on the market share of the original pharmaceutical product as identified by the research questions.

2.2 Effects of Generic Product Market Share on the Original Product Market Share

2.2.1 Trends of Generic Medicine

According to Grabowski and Vernon (1996) factors such as growth of managed care had impacts on generic utilization alongside intensive marketing activities as well as the Waxman-Hatch Act which increased generic entry dramatically resulting in brand pioneers losing market share much more rapidly and deeply than before 1984. They conclude that the level of generic competition is very different one decade after as compared with before the Act. For example, in the early 1980’s, the level of generics dispensing in the U.S was around 10% unlike in the mid 1990’s when it was approaching 40%. These findings on pioneer innovators increased and more rapid loss of market share post-generic entry.

According to Atken and Berndt (2011) generic penetration can be explained by the following two factors: Growth of generic prescription drug insurance coverage. In 1995, about 38% of prescriptions were paid for entirely by cash while 62% were covered by the insurance. In 2005, the cash share of prescriptions had fallen to 12.1% while 87.9% of the dispensed prescriptions were covered by insurance. In 2010, the cash share had fallen to 8.3% while the remaining portion was covered entirely by insurance. Private prescription drug insurance plans entails providing consumers access to low cost drugs, therefore, greater drug insurance coverage have placed increased demand on generic drug utilization and strong downward pressure on the generic prices as opposed to the brand drugs.
According to Atken (2008) a second major development on this issue is the recent changes in the number and relative importance of blockbuster drugs also defined as branded drugs. In 2000, the sales of the branded drugs were in excess by $1 billion in US. This resulted into the number of the blockbuster drugs increasing steadily from six to 52 between 1997 to 2006 and then fell to 48 in 2007. This number remained relatively stable through 2008 to 2009. The sharp drop in sales of the blockbusters in US is highly attributed to their expiry of the patent and subsequent competition from the generics.

2.2.1.1 Measurement of Generic Penetration

Atken and Brndt (2011) suggests that generic penetration can be measured by taking share of extended units dispensed as generics (both branded and unbranded generics) and compared to the units dispensed as brands. A study conducted at five year interval between 1984 to 2009, revealed that in 1984, the generic share was only 18.6%, a decade later, this share had doubled to 36%. Fifteen years later, the generic prescription share was 49.7% almost 14% greater than 5 years earlier. Between 1999 to 2000 the share increased modestly to 56.4% but in the subsequent five years the generic share grew dramatically by more than 18% making its share to be at 74.5% in 2009. Furthermore, in very recent years growth of generic market share has accelerated more rapidly than it was observed which raises a number of questions such as what are the factors underlying this rapid growth in generic prescription share?, How much longer can the generic share continue to grow rapidly? What is the factors potentially limiting growth in the generic prescription share?

2.2.1.2 Generic Efficiency Rate

Generic efficiency rate is approaching its 100% ceiling and reports have indicated that future growth in the total generic market share will depend critically on the movements in the share generic accessible. With major brands expected to lose patent protection in the coming near future, it is reasonable to expect continued growth in the share generic accessible thus in the total generic market share perhaps at slightly lower rates than in the recent past. For example, calcium channel blockers class of medicine has attained very high rates of generic efficiency almost 100%. When Norvasc, the leading brand began to face generic entrants in 2007, the generic market share increased from 47% in 2006 to 96% in 2009. With no remaining patent
protected calcium channel blockers currently on the market, this whole therapy area is now essentially entirely generic (Iglesias, Sauquet and Montana, 2011).

A different dynamic with regard to generic efficiency rate is presented by anti-epileptic class of drugs. The rate has not been as high as the others but the share of market accessible by generics has increased dramatically from 36% in 2004 to 81% in 2009 resulting in total generic market share growth from 26% in 2004 to 68% in 2009. This lower efficiency rate is attributed to clinical concerns among some prescribers in that cases have been reported of well controlled patients with epilepsy developing relapses and break through seizures due to generic substitution of a prescription. Generic efficiency rate for this class of drugs in 2009 was only 84% (Atken and Brndt, 2011).

2.2.2 Intermolecular Generic Brand Substitution

This is another major development involving brand generic substitution following a brand’s loss of patent protection. A very consistent trend until recently was that unit sales of a molecule, typically fall following patent expiration of that molecule. For the first time in recent history, this conventional wisdom has been overturned by the cholesterol lowering statin drugs (Beltramini, 2006).

Aitken and Berndt (2011) highlights that following limited generic authorized, generic entry in the first six months directly after Zocor lost its patent protection in late December 2006, unfettered generic entry transpired. Since brand name Lipitor was still patent protected in early 2007, whereas less costly generic versions of Pravachol (Pravastatin) and Zocor (simvastatin), were now on the market, payers and insurance companies were highly motivated to switch patients who were on Lipitor to pravastatin and simvastatin. This moved Lipitor to the highest copayment tier while placing the two generics on the lowest tier. This resulted in the market share of the two generics increasing dramatically from 2.8Million in June 2006 to 4.8Million in December 2007. The number of prescriptions for Lipitor fell to 12%, with a 26% in new starts whereas, the domestic sales for Lipitor fell by 6.5% in the same year in comparison to the previous year.

According to Kesselheim, Stedman and Bubrick (2010), many countries permit pharmacists to substitute a generic version if one is available whenever a physician writes a prescription. This flexibility encourages appropriate use of generic products. Since 1984, generic drugs
have attained approval from US FDA on the basis of studies demonstrating that they are bioequivalent to the brand name versions. This is mainly established by examining the time taken by a drug to reach the maximum serum concentration. FDA defines a drug as bioequivalent when sufficient evidence suggests that at 90% confidence intervals, the ratio of brand to generic of drug concentration fall within an acceptance interval of 0.8-1.25 known as -20% + 25% rule. Studies and substantial clinical experience have supported this standard as means of ensuring the safety of the vast majority of generic drugs. Some clinicians have stated that patients with epilepsy may be at higher risk of seizures when they are switched from brand name to generic drugs and thus have urged against generic substitution. Occasional case reports have been invoked to support these concerns.

In 2008, the Epilepsy Foundation of America requested that the FDA issue a statement opposing mandatory switching of bioequivalent formulations of brand name and generic drugs. The FDA refused claiming that there was no convincing evidence that switching led to loss of seizure control. Nonetheless, the topic has become politically contentious such that some states US states like Hawaii and Tennessee have passed legislation requiring informed consent from the prescriber or requiring notification from the prescriber like in Utah before permitting generic substitution. Several other states have considered similar actions (Polen, Khanfar and Clauson, 2009).

2.2.3 Senior’s Relationship with Generic versus Branded Drugs

The metaphor of relationships has been cited to be a very important tool for investigating into the phenomenon of consumer-brand interactions. Much research has been done in consumers’ brand relationships, but very little has been done with regard to seniors’ aged 55 or more brand relationships. Earlier research on older consumers highlights that they can be active. The older population is growing and indeed has solid financial assets, this notwithstanding, they are not fully understood yet (Deshpande, Chreim, Bello and Evaschevik, 2013).

A Canadian study focused on the senior’s relationship with prescription pharmaceutical brands that have a major impact on their lives and health revealed that most senior consumers usually are on prescription drugs for long duration of time. This progressively pushes them to develop relationships with the brands that they take. In 2010, 62% of seniors 65 years and
older consumed 5 or more classes of prescription drugs to manage their chronic ailments as revealed by the Canadian Institute of Health Information Report. These results revealed that these senior’s may have arranged relationship with either generic or original drugs that met their varying needs (Deshpande, et al, 2013).

### 2.3 Effects of Generic Product Price on Original Product Market Share

#### 2.3.1 Government Regulations on Pharmaceutical Prices

The reasons for which healthcare quality programs are less developed than those of other industries are related to particular characteristics of this service. First, it is believed that the significance of customer satisfaction in healthcare is limited because patient perception is not always representative of the quality level and because strong government regulations do not allow raising prices due to higher quality. Furthermore, process standardization is considered to be a more complex task in healthcare, given that the effects of medical treatments on human beings are much less predictable than those of fabrication activities on products. Finally, it is asserted that international recognition, such as ISO certification, is seldom a necessity for these kinds of organizations’ because, with some exceptions, healthcare services are not typically for export (Sedvich- Fon, 2013).

#### 2.3.1.1 Reference Pricing

According to Galizzi, Ghislandi and Miraldo (2011), the rise in pharmaceutical expenditures has been a major concern in most European countries due to the financial pressure it imposes on the public budget. Pharmaceutical expenditures have been increasing at a faster rate than total health spending. Between 1995-2005 per capita spending on pharmaceutical rose by more than 50%. This trend has provoked serious concerns about financial sustainability of public health systems and has led to a series of cost control policies. The main goal of these measures is to control public pharmaceutical expenditure through demand (quantity) or supply side (price) measures although countries have adopted designs that differ from one another. One of the most adopted design is referred to as Reference Pricing (RP) as a reimbursement system.

RP is defined as clustering drugs according to some equivalence criteria and defining a reference price for each cluster. This clustering can include or exclude patented drugs.
Combination of these clusters gives rise to different variants for example generic RP (GRP) only to products with expired patents and generic competition. Under this system, the third party payer for example insurance will not pay any amount that exceeds the reference price for any cluster drug to mean that the consumer will be expected to pay the excess (copayment) which makes RP interact with out of pocket expenditures. RP is generally seen as an efficient mechanism for reducing drug prices as it promotes self-restrain, controls demand for expensive drugs (original/brand) and promotes appropriate use of drugs (Stross, Harry and Mariott, 2009).

2.3.1.2 Generic Price Competition

According to Junoy (2010), most European Union (EU) countries intervene in pharmaceutical market both by regulating the maximum consumer price of generics (price caps) and by setting the maximum reimbursement rate, especially by means of reference pricing systems.

According to European Generic Medicine Association (EGA) 78% of a sample of 27 European countries utilized some form of direct generic price regulation in 2007. However, some countries like Germany, the Netherlands, Sweden and United Kingdom applied free or quasi-free pricing to generics like the United States. Most countries that apply the price-cap regulation system set the price cap as the average observed price in other countries which is usually a certain percentage below the innovator’s price. For example in Australia, the first generic entry must set the selling price at least 48% lower than the originator-branded pharmaceutical, the second must be 15% lower than the first generic and the third must be 10% lower than the second. For example, although pricing is free in Sweden the reimbursement rate is set according to the lowest price with a system of compulsory substitution with the cheapest generic drug updated every 2 months. This resulted into generic prices falling by 40% in 2005 which was higher than in 2003. In UK, a maximum reimbursement rate is applied to a large proportion of the commonly prescribed generic medicine in primary care unlike branded medicines (Ball and Mackert, 2013).

The knowledge of the impact of these policies on price competition between generic is scant. Research should be carried out on issues like to what extent is generic competition among firms encouraged and how rapidly do they bring the consumer’s price down, to what extent
do they induce price reductions beyond those imposed by price regulations, Is regulation more effective than free price competition in bringing the generic price down (Junoy, 2010).

The dynamics of price competition among generic competitors in countries where regulation is very high have received little attention to date, especially in comparison with the dynamics of generic prices in countries with free pricing and the dynamics of innovator’s prices in the face of competition from generics (Junoy, 2010).

According to Danzon and Chao (1992), competition is greater in unregulated or weakly regulated markets like USA, Germany, UK and Canada than those that are highly regulated like France, Italy and Japan.

Galizzi, et al (2011) observed that presence of generics might influence drug prices through at least three channels: Prices for brand-named drugs decrease much more than for generics like in Germany where prices for branded drugs reduced by 27% unlike for generics which reduced by only 11%, only drugs that are priced above the RP reduce in price and finally the price decrease is only observed where the generic competition is present.

According to Dylst and Simoens (2011), a study in Sweden revealed that the impact of price competition from generic medicine on original drug depended on the number of competitors. One additional generic competitor lowered prices of originator medicines by an average of 4-7%. Entrance of more generic competitors led to further reductions of prices of the brand medicines. The same phenomenon was observed in Italy.

### 2.3.1.3 Effects of Dynamic Competition in Generic Prices

According to Junoy (2010), price cap regulation leads to a leveling off of generic prices as opposed to brands prices at a higher level than it would occur in the absence of this regulation. For example, in Ontario (Canada) in 1993 the price of the first generic entry could be no higher than 70% of the price of the branded products while that of the subsequent entries could be no higher than 90% of that of the first. Reference pricing also results into an obvious and almost compulsory reduction in the consumer price of all pharmaceuticals to a varying degree in different countries and periods with the reduction being greater for the originator-branded drugs than for generics. Galizzi, et al (2011) still emphasizes that Pharmaceutical companies try to compensate for reduced revenues in the face of RP by
increasing the prices of the drugs that are not subject to reimbursement regulation which are usually the original drugs. Patients switching to the least expensive drug might consume more healthcare services, they also trade economic savings for appropriate drug matching and finally introduction of competition and lowering the current of profits associated to patent protection results into a reduced incentive to invest in Research and Development (R&D) by mainly the innovator pharmaceutical companies.

According to Dlyst and Simoens (2011), it has been argued that the generic medicine is able to deliver competitive prices if only it can attain a high market share of the off-patent pharmaceutical market. This high market share depends on demand. This calls upon the generic firms to create incentive policies for physicians to encourage them to prescribe generic medicine, for pharmacies to encourage them to dispense generic medicine and for patients to encourage them to ask for generic medicine. It is hypothesized that countries with high generic medicine market share see more price competition resulting to lower medicine prices than countries with a low generic market share.

2.3.2 Consumer Price Sensitivity

In a study conducted in Switzerland investigating the influence of price on the purchase decision, the following were reported by the participants as being important. Until recently, in Switzerland the price did not have any relevance. However, since the Swiss government implemented a new regulation, that twenty percent of the price had to be paid directly by the patient, the price has become more relevant. The new regulation has raised the patients’ price sensitivity. Patients know that generics do exist and are increasingly asking for them when purchasing medication. The price can be considered as the main issues at the moment. Consequently, physicians are also confronted more frequently with this issue. However, many drugs usually have similar prices although there are differences between Over The Counter (OTC) and prescription drugs. Drug prices have been reduced in Switzerland twice in the past year which has really fuelled the price discussion (Stross, Harry and Mariott, 2009).
2.3.3 Prices of Specialty Pharmaceutical Brands

Specialty pharmaceutical brands also referred to as high specialty drugs are a rapidly emerging and costly category of drugs. These are used to treat chronic and genetic diseases. The patient benefit from these drugs is significant, but the cost is high (Miller, 2005).

According to the Pharmaceutical Care Management Association (2004), spending on these “wonder drugs” is as high as $35 billion a year which is increasing rapidly and is expected to reach $50 billion by the end of 2005. The costs of these drugs for one patient alone averages between $1,000 and $1,500 a month (Miller, 2005).

The importance of specialty pharmaceuticals in near future has been identified by “Nature”. The study predicted that revenue sales derived from specialty products would rise from 43 percent in 2007 to 52 percent in 2012. Thus, for the first time, the industry will achieve a majority of major-product revenue from specialty drugs. Over much of the past 30 years, large pharmaceutical companies have focused primarily on developing and marketing these specialty drugs that are used by large patient populations (Gudiksen, Fleming, Furstenthal and Ma, 2008).

The future also holds high hopes as drug-makers will turn their research budgets towards therapy areas where higher cost drugs tackle diseases with high levels of unmet need such as cancer, multiple sclerosis and diabetes (Wasuja, Sagar and Sushil, 2012).

2.4 Effects of Generic Marketing factors on the Original Product Market Share

2.4.1 Types of Marketing (Advertising)

According to Vakratsav and Kolsarici (2010), in markets with strict regulations, pharmaceutical advertising targeted directly to the consumers of prescription drugs was initially prohibited according to the local Food and Drug Act which regulates the advertising of pharmaceutical products. This was amended in 1978 to allow price advertising of prescription only drugs, brand names and quantity to the public. In 1996, the policy finally allowed the following two types of Direct To Consumer Advertising (DTCA): Disease oriented whereby the advertisement discuss the specific disease or health condition and prompt the viewers or readers to ask their doctor about the treatment with no mentioning of a specific brand and Reminder advertisements which may contain only the brand name, active
ingredient name and optionally quantitative ingredient information like dosages. In addition to the two types, U.S. Food and Drug Administration allows full product advertisement which include brand name alongside health claims and by law must include risk information. Research conducted previously has suggested that advertising effects are likely to follow a dynamic pattern due to many influencing patterns like product life cycle, message content (type) and competition. In terms of product life cycle, elasticity declines over time which is shown by tracking advertising over time or by comparing the advertising elasticity for new versus mature products. Changes in advertising message can also cause shifts in advertising effectiveness as suggested by Bass (2007). Informative advertising (disease oriented) is effective in new markets as well as for recently introduced products but as markets mature, emotional advertising is more effective because of its persuasive nature. Finally for competition, research has shown that competitive intensity decrease advertising effectiveness due to clutter as suggested by (Danaher, Bonfrer and Dhar, 2007).

2.4.1.1 Effects of DTCA in the Pharmaceutical Industry

Consumers have greatly benefitted from internet and DTCA in that they are so exposed to a wealth of information. They are able to read, hear and even discuss about the good and bad effects of prescription pharmaceutical drugs as well as the availability of generics for most brands that retail much cheaper than the brands. They go ahead and discuss these findings with their healthcare providers and in situations where these providers lack direct control over their brand choice, consumers influence the decision and the authority of the decision maker. This has greatly influenced the dynamics between the patient and the health care providers in the recent years. The providers face major challenges from this development in the sense that patients may insist on drugs and their dosages that may not be to their advantage. These developments however, need not to have negative impacts since it would be very fruitful when doctors involve patients in brand decision making process thus treating them as partners (Deshpande, et al, 2013).

According to Agres (2010), pharmaceutical companies are facing growing criticism from Congress and consumer groups who are constantly reviewing the role (DTC) advertising plays in their marketing strategies. Critics lay heavy blames on such kind of advertising for driving up prescription (brand) drug prices, providing misleading information and finally for
increasing the number of patients exposed to health risks as it was the case with a product called vioxx from Merck & company and another product called Celebrex from Pfizer which had been marketed heavily to consumers through television and other advertisements. Following this, a number of authors have suggested that pharmaceutical companies should voluntarily restrict DTC advertisement during the first two years that a new drug is on the market.

2.4.1.2 Beyond DTC Advertising

A new study from Manhattan Research reveals that over 45 million consumers of pharmaceutical products are currently utilizing internet to retrieve drug information which has indeed provided a prime opportunity for pharma companies to leverage online venues for building relationships with their consumers. Most ePharma consumers believe the internet is a critical source of information about prescription drugs thus making the pharma product websites a big resource to the consumer. Consumers mainly visit the sites to learn about whether the drug is original or generic, molecule’s side effects and interactions, conditions treated by a drug, to read instructions for taking a drug, for clinical trials results and finally to look for information to supplement a doctor’s visit (Tanzola, 2005).

2.4.1.3 Pharmaceutical Sales Representatives

In an attempt of the pharmaceutical industry to become customer-centric (doctor/pharmacist) it is ending up still to force their marketing and sales process on the consumer, rather than aligning their process with the consumers’ mindset to give them what they need in order to use their products. The companies are product focused and all they need is to sell their products thereby ignoring what the medical professionals really need in order to use the product. The latest statistics show that 8 out of ten pharmaceutical representatives usually do not make it past the doctor’s or the pharmacy front door simply because they are denied access since they do not add value to neither the doctor nor the pharmacist. A real customer-focused selling in the pharmaceutical industry is aligning existing brand and marketing strategies, messaging and sales materials, clinical knowledge and selling skills to the specific behavior the customer needs whether a doctor or a pharmacist to grant access, enter into clinical discussions, perceive a value proposition and change their clinical behavior and prescribing habits. Doctors/ pharmacists are problem-focused and therefore, companies
should focus on how to demonstrate value to the doctor and thus help them achieve their goals and also how they can offer their products as solutions to the doctors. Research has shown that most doctors and pharmacists feel so frustrated from the many number of pharmaceutical representatives, that approach them daily with different messages that has no value at all in them. Doctors are in dire need of a valuable, balanced, applicable clinical information that can help them solve their patient’s problems and this is what any pharmaceutical representative should strive to provide (Kessler, 2008).

**2.4.2 The Role of a Pharmacist in Pharmaceutical Marketing**

This industry is a unique part in health care globally. This uniqueness is mainly highlighted by its distribution channels where the final consumer is not the decision maker in choosing which drug to purchase (Kim and King, 2009).

The channel is structured in such a way that the producer sells products to a retailer/pharmacy which in turn sells to individual patients while the physician is assumed to be the ultimate decision maker of the medicine that the patient finally buys. This practice may differ between the developed and the developing countries. Research findings suggest that in countries with large populations living at or below the poverty level, the pharmacist, because of his or her expertise, is the most important source of information and thus the ultimate decision maker for millions of consumers. The pharmacists in such countries are not only dispensers of ethical drugs but also takes on the responsibilities of an influencer, prescriber and switcher (Stuart, Hegazy and Taher, 2012).

According to WHO (1997), pharmacists of the future should be educated to have additional skills that would allow for an expanded role. The new roles that they proposed were: decision making, communication, leadership, management, long-life learning and teaching resulting into a seven star pharmacist.

Pharmacies and Pharmacist, 2011 asserts that pharmacists stay for long hours and therefore are exposed to patients more frequently as compared to the doctors. Therefore, they stand a better position to pick up the role of primary healthcare providers in order to meet the need for affordable health care. Furthermore, they can be the key to expanding the delivery of healthcare information beyond the traditional physician-patient relationship (Maniscalco, Daniloski and Brinberg, 2010).
In 2011, an independent certification agency of American Pharmacists Association (APhA) began to certify pharmacists as Board Certified Ambulatory Care Pharmacists (BCACP). This practice include direct patient care and medication management of ambulatory patients, long-term relationships, coordination of care, patient advocacy, wellness and health promotions, triage, referral, patient education and self-management (Stuart, Hegazy and Taher, 2012).

A research was conducted in Egypt to investigate the influence of pharmacists on the medicines patients purchased. Each pharmacist was requested to highlight how many patients would have a prescription, a specific drug in mind or present a symptom out of 100 patients entering a pharmacy. The results presented were: 45% with a prescription, 30% with an empty package of previously used medicine or a recommended medicine and 25% with nothing and therefore asking the pharmacist for advice based on a symptom. About 14% of patients entering the pharmacy came with a prescription, a box or a name of a drug yet they were switched. Since 25% of the patients came in with only a symptom, the pharmacist indeed had control of the drug to dispense in 39% of all cases. The individual pharmacists reported a minimum of 5% and a maximum of 90% of purchases so influenced. The following factors were gathered to have contributed to the switching: the pharmacist felt a different drug would be more effective, economic status of the patient, in the case of those with prescription, due to not having the prescribed drug in stock. Factors like promotion, limited or excess stock and profit margin were less frequently highlighted (Taher, Stuart and Hegazy, 2012).

Further investigations were conducted to better understand the motivations behind pharmacist’s influences. The main objectives for this investigation was to understand whether the pharmacists were suggesting the medicines for personal gain given that the medicines provided higher profit margins or not, to understand if the motivations were influenced by pharmaceutical firm’s promotions and finally to understand if their motivations were based on the interest of the patient. Most of the responses suggested that the switching was mainly due to pharmaceutical firms’ promotions. Total switching from both physicians’ prescription and requested brand accounted for 5.92% of the data and it was mainly because the pharmacist felt that a different medicine would be more effective on the patient while 3.62% of the responses was switching due to economic status of the patient. Differences in motivation for switching in different social class neighborhood were also
noted. For example, 4.17 percent of the pharmacists were more likely than in other areas to switch due to special promotions in A-class areas whereas in C-class neighborhoods switching was mainly driven by the economic status of the patient (Taher, Stuart and Hegazy, 2012).

2.4.3 Social Power

To facilitate our understanding of the power of the pharmacist, it is of value that we review the theories of social power. By definition, social power is the ability of an individual or group to change their attitudes or behavior in the direction intended by the influencer (Taher, Stuart and Hegazy, 2012).

Social power can be acquired in the following five different ways: Reward power (perception of an individual that the other person has the power to mediate rewards for him); Reward power (perception that an individual has the ability to mediate punishments for him); Expert power (perception that one has some special knowledge or expertise); Referent power (identification with a person in power); Legitimate power (perception that an individual has a right to define a person’s behavior) (Taher, Stuart and Hegazy, 2012).

Several studies have examined the influence of expert power on consumer’s behavior. This has also been studied in the health care sector resulting into a conclusion that since patients have little knowledge or power when it comes to their health, they always rely on experts who have more information, skill, knowledge, confidence and power to control outcomes. Therefore, it is in order to assume that patients readily comply with the pharmacist recommendations because of the expert power that the pharmacist possess (Schwartz, Luce and Ariely, 2011).

2.5 Chapter Summary

In summary, the above literature reviewed highlighted that penetration of generic medicine in the market was increasing as reported by results from an extensive analysis. The literature also suggested that senior’s expressed a relationship with generic as well as branded medicine after using the same for a long time. Intermolecular brand substitution was cited as one of the key drivers of generic penetration. Government regulations in line with issues like reference pricing, generic price competition and the impacts of dynamic competition in
generic pricing also affected the market share of original products. Consumer price sensitivity as well as prices of specialty pharmaceutical products was also discussed to increase the market share of generic products. Types of marketing activities like Direct to Consumer Advertising (DTCA) within the pharmaceutical industry, pharmaceutical sales representative, a pharmacist role in pharmaceutical marketing and social power were suggested also to affect the market share between the generic and the original products.

The subsequent chapter of this project report comprised of chapter 3, research methodology, which would provide explanations and description of the methods and procedures that were used in conducting the study.
CHAPTER 3

3.0 RESEARCH METHODOLOGY

3.1 Introduction

This chapter was organized into five sections covering the research design, population and sampling, data collection methods, research procedure and data analysis methods. The chapter mainly explained the methodology and the various procedures that were used for collecting and analyzing the data in the study. Finally, the chapter summary provided an outline of the areas covered in this chapter and a brief description of what chapter four would cover.

3.2 Research Design

This study utilized a descriptive survey research design. Welman and Kruger (2001) defined survey as an attempt to collect data from an identified population in order to establish the current status of the population with respect to one or more variables. Cooper and Schindler (2006) also described a descriptive survey design as one that facilitated the understanding of the characteristics associated with a subject population. It involved the observation and description of variables as distributed in the population with the basic goal of collecting the information about the variables within a population through the use of questionnaires. This design had a wide coverage and also considered specific time and involved empirical research.

Descriptive research design required some understanding of the nature of the problem which in this case was the effects of generic pharmaceutical products on the market share of original pharmaceutical products. The objectives of this type of design were to determine the frequency of occurrence of a phenomenon, describe whether a relationship existed between the variables and eventually, to describe the state of the variables. The dependent variable of the study was the market share of the original pharmaceutical products. The independent variables of the study were the effects of generic pharmaceutical product market share, the effects of generic pharmaceutical product price and finally the effects of generic pharmaceutical product marketing factors. This design enabled the researcher to analytically
explain the findings of the research on the basis of the variables tested. It also helped in explaining underlying relationships rather than focusing on prescribing solutions (Saunders et al., 2003).

### 3.3 Population and Sampling Design

#### 3.3.1 Population

According to Cooper and Schindler (2006), a population was defined as the total of the elements upon which inferences could be made. The population was the larger set of observations while the smaller set was called the sample. The research at hand was a field survey aimed at capturing information from pharmacy technologists employed within the pharmacies located in the CBD region of Nairobi. The population of the study therefore, was basically the pharmacy technologists employed in the pharmacies within this region. Due to the difficulty in finding the list of all the registered pharmacy technologists within the CBD, an estimate of 150 pharmacies in CBD was obtained and an assumption of each employing 5 pharmacy technologists was equally drawn. This resulted to a total of 750 as the population of the study.

#### 3.3.2 Sampling Design

##### 3.3.2.1 Sampling Frame

A sampling frame is a list that constitutes the population. The main idea of sampling is that by selecting some of the elements in the population, one can draw conclusions about the entire population. It is a representation of the elements of the target population that consists of a list of all the elements in that population (Cooper and Schindler, 2006).

In this study, the sampling frame which was a list of elements from which the sample was actually drawn, was supposed to be a list of employees database from the selected pharmacies in town. The researcher was not able to obtain this information from all the pharmacies since the owners of the pharmacies insisted that it was confidential information that they would not share with the public. This is what led to the researcher’s assumption that each pharmacy employed 5 pharmacy technologists.
3.3.2.2 Sampling Technique

Babbie (2004) highlighted that sampling is a means of selecting some part of the group to represent the entire group or the population of interest. Sampling reduces the length of time needed to complete a research; it cuts down on costs, is manageable and is almost a mirror of the population.

To ensure that the study met its purpose, two pharmacy technologists from each of the 150 pharmacies were sampled out through convenience sampling. This is a non-probability sampling technique, which basically entailed collecting information from anyone you could access. This was implored because the chemist in charge was to select only the pharmacy technologist who was free at any given time to fill the questionnaire. This method was the most appropriate in this circumstance because of the heavy work load that these pharmacy technologists experienced since the pharmacies were located in the busiest part of Nairobi that is the Central Business District.

3.3.2.3 Sample Size

The size of a sample should be determined by adequacy and resource consideration. This means that the sample should be large enough to enable reasonable estimates of variables to be obtained, capture variability of responses and facilitate comparative analysis (Troendle and Kai, 2003).

To determine the specific sample size, the researcher considered the chemist accessibility, convenience, appropriate time for data collection and costs if any that would be involved. For this study, a sample size of 300 pharmacy technologists, determined through convenience sampling, gathered from an estimated population of 750 was used. This was in line with Troendle and Kai (2003) who stated that a sample size should be enough to accurately represent the population of interest and that a sufficient number would be 30%– 50% of the total population of interest.
### Table 3.1: Sample Size Distribution

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<thead>
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<th>Total Population</th>
<th>Sample Size</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Pharmacy technologists</td>
<td>750</td>
<td>300</td>
<td>40%</td>
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#### 3.4 Data Collection Methods

The primary data collection tool for this study was a self-administered questionnaire designed specifically for the pharmacy technologists who was to be the key respondents. The questionnaire was organized into four sections. The first section (A) mainly covered bio data of the respondents and the rest of the sections comprised of questions for each of the three specific objectives of the study, that was, section B, to determine the effects of generic product market share on the market share of the original pharmaceutical products, section C to determine the effects of generic pharmaceutical product price on the original pharmaceutical product market share and finally section D to determine the effects of generic pharmaceutical product marketing factors on the original pharmaceutical product market share. The questionnaire was comprised of closed questions for ease of answering and data analysis. The respondents were to rate the various factors using a 5 point likert scale. Administration of the questionnaire was done with the help of three research assistants.

#### 3.5 Research Procedures

A pilot test was conducted to test the questionnaire to establish ease and validity of the questions and question types. This was to establish that the questions were straight and unambiguous. According to Cooper and Schindler (2006), a pilot test is a test conducted to detect weaknesses in design and instrumentation and to provide proxy data for selection of a probability sample. The pilot test was carried on 10 randomly selected chemist staff employed in 5 also randomly selected chemists located in CBD region of Nairobi. The main purpose of the pilot test was to enable the researcher check if the questions had been phrased correctly and establish whether they were easy to understand or not.

The questionnaires were amended appropriately after the pilot test and a final copy to be dispatched to the respondents was prepared. The questionnaires were distributed physically.
as a hard copy to the respondents by the research assistants and telephone communications to
the chemist in charge were made to remind them to get the respondents (pharmacy
technologists) to fill in the questionnaires. Three weeks was scheduled for the follow up and
collection of the questionnaires. A cover letter detailing the purpose of the study was
dispatched along with the questionnaires. It also included a promise to the respondent to
share the results of the study with them in order to increase the response rate. Sections B, C
and D had questions rated using a 5 point likert scale where; Strongly Agree was rated as 1;
Agree:2; Disagree:3;;Strongly Disagree 4 and Not Applicable: 5.

3.6 Data Analysis Methods

Quantitative analysis is the numerical representation and manipulation of observations for the
purpose of describing and explaining the phenomena that those observations reflect
according to Babbie (2004).To facilitate analysis of the data, the questionnaires were edited
and each variable in the questionnaire was assigned a numerical representation. The
responses from each respondent were coded using a defined coding scheme. The qualitative
data was presented using frequency tables, pie charts and bar graphs. The data collected in
this study was analyzed through descriptive statistics using mode and mean as measures of
central tendency and data was presented in pie-chart and tables. This provided simple
summaries about the sample and the measures. Regression analysis was used to determine
test of association between dependent and independent variables. The data that was collected
from this study was entered into the Statistical Package for Social Science (SPSS) program
for statistical analysis after which it was graphically presented using tables, pie charts and bar
graphs. Percentages were used for ease of comparison.

3.7 Chapter Summary

This chapter covered the methods that were used for the research design, the population and
the sampling design, data collection methods, research procedures and data analysis methods.
The research design that was adopted was a descriptive research design indicating the
dependent and independent variables. The population of the study was pharmacy
technologists employed in the chemists located in CBD region of Nairobi. The researcher
was not able to obtain employee database from the selected pharmacies which was supposed
to be the sampling frame hence an assumption that each pharmacy had employed 5 pharmacy
technologists was drawn which resulted into a population of 750 and this was used as the basis for the sampling design in this study. Convenience sampling, a non-probability sampling technique was used to determine the sample size of the key respondents (pharmacy technologists) as 300. This convenience technique was majorly implored because the questionnaires were issued to the respondent by the chemist in charge when the respondent had no client to be served.

Questionnaires were the primary source used to collect data and a pilot test was done before the actual research was carried out. Data was analyzed using descriptive statistics which formed the basis of the quantitative analysis of the data in the study which was presented in the form of tables, pie charts and bar graphs. The succeeding chapter for this project report was chapter four which presented results and findings, their analysis and presenting of the same based on the specific objectives of the study.
CHAPTER 4

4.0 RESULTS AND FINDINGS

4.1 Introduction

This chapter presents the results of the findings of this research project. The data and analysis was based on the information provided by respondents in the completed questionnaires and is presented and analyzed according to the three research questions. Results are presented in, pie-charts, bar graphs and tables. Quantitative data was summarized using mean and standard deviation was calculated to assess the response of various statements assessing effects of generic pharmaceutical products on the market share of original pharmaceutical product in chemists within the CBD of Nairobi.

4.1.1 Response Rate

From the study, out of 300 questionnaires issued, 276 were filled and returned for analysis of the findings. This resulted to 92% response rate which was enabled because the study was carried out in same location and respondents were willing to give information about implications of generic pharmaceutical products on the market share of original pharmaceutical product.

4.2 Respondent Demographics

4.2.1 Gender

The respondents were asked to indicate their gender and the responses were as follows; 71.0% of the respondents were male while 29.0% were female. This was true because most of the people studying and practicing pharmacy in Kenya is male as indicated in figure 4.1 below.
Figure 4.1: Gender

4.2.2 Age and years in practice

From the sturdy, the ages of the 276 respondents, ranged between 24 and 52 years old. The average age was 32.77 years and standard deviation was 7.810 which were large and hence it indicated that most of the respondents were not of the same age group which was close to the average age. Years in practice also had a mean of 5.90 years and standard deviation of 4.934. This indicated that majority of the respondents had different years of experience in their profession but averagely they had worked for 5.90 years which was enough time to learn more and hence increased the reliability of the information given by respondents on the study as displayed on table 4.1 below.

Table 4.1: Descriptive Statistics on Age and Years in Practice

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum m</th>
<th>Maximum m</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age In Years</td>
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<td>24</td>
<td>52</td>
<td>32.77</td>
<td>7.810</td>
</tr>
<tr>
<td>Years in practice</td>
<td>276</td>
<td>2</td>
<td>21</td>
<td>5.90</td>
<td>4.934</td>
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<tr>
<td>Valid N (list wise)</td>
<td>276</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4.3 Effects of Generic Market Share on the Original Product Market Share

4.3.1 Trends of Generic Medicine

4.3.1.1: Intensive Marketing by Generic had Increased Generic Penetration

The researcher asked the respondents whether intensive marketing activities by generic companies had increased generic penetration as compared to original firms or not. This would help the researcher to determine the current trends of generic medicine which would further facilitate in determining the effects of generic product market share on original product market share. The following results were drawn from the study; 78% of the respondents cumulatively agreed and strongly agreed that indeed intensive marketing activities by the generic firms had greatly encouraged generic penetration into the market, 20% cumulatively disagreed and strongly disagreed while only 2% of the respondents remained neutral about this question as reflected on figure 4.2 below.

Figure 4.2: Intensive Marketing by Generic had Increased Generic Penetration
4.3.1.2: Government Intervention Had Increased Generic Penetration

The researcher inquired from the respondents whether or not various government interventions had increased generic penetration. This would help the researcher to determine the role these interventions played in the current trends of generic medicine which would assist in determining the effects of generic market share on original product market share. The results were as follows; 80% of the respondents cumulatively strongly agreed and agreed respectively that government intervention had greatly influenced generic penetration, 12% cumulatively strongly disagreed and disagreed respectively while 8% remained neutral as reflected on figure 4.3 below.

Figure 4.3: Government Intervention Had Increased Generic Penetration

4.3.1.3: Generic Dispensed at a Higher Rate Compared to the Original Product

The researcher asked the respondents if generic medicine dispensed at a higher rate than the original, in order to understand better the current trends of the generic medicine. This would help in determining the effects of generic product market share on original product market share. The following results were gathered from the study; 72% of the respondents cumulatively strongly agreed and agreed that generic products dispensed at a higher rate as compared to original products, 15% cumulatively strongly disagreed and disagreed while 13% remained neutral as reflected on figure 4.4 below.
4.3.1.4: Increased Insurance Coverage Had Increased Generic Penetration

The researcher asked the respondents if the increased insurance coverage had increased the growth of generic medicine so that she could understand the current trends of generic medicine. This would assist in determining the effects of generic product market share on original product market share. The following results were drawn from the field; 64.8% of the respondents cumulatively strongly agreed and agreed that increased insurance coverage had increased the growth of generic medicine, 29% cumulatively strongly disagreed and disagreed while 6.2% remained neutral as reflected on table 4.2 below.

**Table 4.2: Increased Insurance Coverage Had Increased Generic Penetration**

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
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<tr>
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<td>52.5</td>
<td>52.5</td>
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<td>Agree</td>
<td>34</td>
<td>12.3</td>
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<tr>
<td>Disagree</td>
<td>64</td>
<td>23.2</td>
<td>88.0</td>
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<tr>
<td>Strongly disagree</td>
<td>16</td>
<td>5.8</td>
<td>93.8</td>
</tr>
<tr>
<td>Not applicable</td>
<td>17</td>
<td>6.2</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>276</td>
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<td></td>
</tr>
</tbody>
</table>
4.3.2 Intermolecular Generic Brand Substitution

4.3.2.1: Insurance Companies Encouraged Intermolecular Substitution

The researcher wanted to know if insurance companies encouraged generic intermolecular substitution of original products so that she could determine the implications of this substitution on the market share of original product. The findings drawn from the sturdy were as follows; 72% of the respondents strongly disagreed and disagreed that insurance companies greatly encouraged intermolecular substitution, 12.8% cumulatively agreed and strongly agreed while 15.2% remained neutral as shown in table 4.3 below.

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
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<tr>
<td>Valid</td>
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<td></td>
</tr>
<tr>
<td>Strongly Agree</td>
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<td>9.8</td>
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<tr>
<td>Agree</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>Disagree</td>
<td>146</td>
<td>52.9</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>53</td>
<td>19.1</td>
</tr>
<tr>
<td>Not applicable</td>
<td>42</td>
<td>15.2</td>
</tr>
<tr>
<td>Total</td>
<td>276</td>
<td>100.0</td>
</tr>
</tbody>
</table>

4.3.2.2: Drop in the Market Share of Original Linked to Generic Entry

To facilitate the researcher further in determining the effects of generic product market share on original product market share, she inquired from the respondents if a sharp drop in the market share of an original product was highly linked to entry of a generic competition. The findings revealed from the sturdy were as follows; 76.5% of the respondents agreed and strongly agreed that a sharp drop in the market share of an original product was highly linked to entry of generic competition, 20.5% disagreed and strongly disagreed while 3% remained neutral as indicated in table 4.4 below.
<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
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</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>145</td>
<td>52.5</td>
<td>52.5</td>
</tr>
<tr>
<td>Agree</td>
<td>66</td>
<td>24</td>
<td>76.5</td>
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<td>Disagree</td>
<td>36</td>
<td>13.2</td>
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<td>7.3</td>
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</tr>
<tr>
<td>Total</td>
<td>276</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

### 4.3.2.3: There Had Been an Upward Trend in the Generic Medicine

The researcher wanted to determine whether there had been an upward trend in the generic medicine or not. This would facilitate in understanding further the implications of generic product market share on original product market share. From the findings, 88% of the respondents strongly agreed and agreed that there was an upward trend in the market share of generic medicine, 10% disagreed and strongly disagreed while only 2% remained neutral as shown by figure 4.5 below.

![Bar Chart: There had Been an Upward Trend in the Generic Medicine](chart.png)

**Figure 4.5: There Had Been an Upward Trend in the Generic Medicine**

### 4.3.2.4: Generic Upward Trend was Likely to Increase in the Next 10years

To understand better this upward trend of the generic medicine, the researcher inquired from the respondents, whether or not it was likely to increase in the next 10years. This would
facilitate in determining the effects of generic product market share on original product market share in 10 years to come. The results revealed that, 41% of the respondents strongly agreed and 47% of the respondents agreed that there was an upward trend in the market share of generic medicine which was likely to continue in the next 10 years, only 9.8% cumulatively disagreed and strongly disagreed while 2.2% remained neutral as shown by the figure below.

**Figure 4.6: Generic Upward Trend was Likely to Increase in the Next 10 years**

### 4.3.2.5: Lack of Generic Version Barrier to Generic Penetration

The researcher wanted to determine if lack of generic version was the main barrier to generic penetration, in order to understand the implications of generic penetration on market share of original products. The following results were gathered from the sturdy; 64.9% agreed and strongly agreed that drugs without generic version were the main barrier to generic penetration, 29% disagreed and strongly disagreed and 6.1% remained neutral as reflected on table 4.5 below.

**Table 4.5: Lack of Generic Version Barrier to Generic Penetration**

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>65</td>
<td>23.6</td>
<td>23.6</td>
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<tr>
<td>Agree</td>
<td>114</td>
<td>41.3</td>
<td>64.9</td>
</tr>
<tr>
<td>Disagree</td>
<td>48</td>
<td>17.4</td>
<td>82.2</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>32</td>
<td>11.6</td>
<td>93.8</td>
</tr>
<tr>
<td>Not applicable</td>
<td>17</td>
<td>6.1</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>276</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>
4.3.2.6: Patent Protection was the Main Barrier to Generic Entry

The researcher inquired from the respondents if patent protection was the main barrier to generic entry in order to determine the effects of generic product market share on original product market share. From the findings, 86% of the respondents strongly agreed and agreed that indeed patent protection was the main barrier to generic entry, 9.8% strongly disagreed and disagreed while only 4.2% remained neutral as shown on figure 4.7 below.

Figure 4.7: Patent Protection was the Main Barrier to Generic Entry

4.3.2.7: Generic Substitution Rate Had Reached 100% in Some Molecules

The researcher was also interested in knowing whether generic substitution rate had reached 100% in some molecules locally or not. This would assist her in determining the effects of generic product market share on original product market share especially in these molecules. The findings were as follows; 68% of the respondents strongly agreed and agreed that the rate at which generics substituted original brands had reached 100% in some molecules like calcium channel blockers, 12% cumulatively strongly disagreed and disagreed while 20% remained neutral as shown in figure 4.8 below.
4.3.2.8: Government Regulations Hindered Generic Penetration

To enable the researcher determine factors that highly contributed to generic penetration in Kenya, she inquired from the respondents if regulations by the government of Kenya hindered generic penetration. This would greatly assist in determining the effects of generic market share on original product market share. The following results were drawn from the sturdy, 34.8% of the respondents disagreed that regulations by the government of Kenya hindered generic penetration, 17.4% agreed, 24.3% strongly agreed, 17.4% strongly disagreed and 6.1% remained neutral as reflected on table 4.6 below.

Table 4.6: Government Regulations Hindered Generic Penetration

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid Strongly Agree</td>
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<td>24.3</td>
</tr>
<tr>
<td>Agree</td>
<td>48</td>
<td>17.4</td>
</tr>
<tr>
<td>Disagree</td>
<td>96</td>
<td>34.8</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>48</td>
<td>17.4</td>
</tr>
<tr>
<td>Not applicable</td>
<td>17</td>
<td>6.1</td>
</tr>
<tr>
<td>Total</td>
<td>276</td>
<td>100.0</td>
</tr>
</tbody>
</table>
4.3.2.9: Pharmacists were permitted to Substitute a Physician’s Prescription
The researcher inquired from the respondents if the government of Kenya permitted pharmacists to substitute a physician’s prescription of branded product with generic, in order to help her determine factors that greatly contributed to generic penetration. This would help in determining the effects of generic product market share on original product market share. From the results; 76.8% agreed cumulatively that the government of Kenya permitted pharmacists to substitute a physician's prescription, 21.2% cumulatively strongly disagreed and disagreed while 2% remained neutral as highlighted further on table 4.7 below.

Table 4.7: Pharmacists were permitted to Substitute a Physician's Prescription

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
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<td><strong>Valid</strong></td>
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<td></td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>82</td>
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<tr>
<td>Agree</td>
<td>130</td>
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<tr>
<td>Disagree</td>
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<td>17.4</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>10</td>
<td>3.8</td>
</tr>
<tr>
<td>Not applicable</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>276</td>
<td>100.0</td>
</tr>
</tbody>
</table>

4.3.2.10: Substitution of Brand Allowed in Case of Physician’s Consent
The researcher further inquired from the respondents if substitution of a brand was only allowed with consent from the physician in order to understand the extent to which this generic substitution had affected the market share of original product. The following findings were captured from the sturdy, 76.5% agreed that the government of Kenya permitted pharmacists to substitute a physician's prescription (brand) with a generic version only with consent from the physician, 20.6% disagreed and strongly disagreed cumulatively while 2.9% remained neutral as shown on table 4.8 below.
Table 4.8: Substitution of Brand Allowed in Case of Physician’s Consent

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
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</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>96</td>
<td>34.8</td>
<td>34.8</td>
</tr>
<tr>
<td>Agree</td>
<td>115</td>
<td>41.7</td>
<td>76.4</td>
</tr>
<tr>
<td>Disagree</td>
<td>49</td>
<td>17.8</td>
<td>94.3</td>
</tr>
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<td>8</td>
<td>2.8</td>
<td>97.1</td>
</tr>
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<td>8</td>
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</tr>
<tr>
<td>Total</td>
<td>276</td>
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<td></td>
</tr>
</tbody>
</table>

4.3.3 Senior’s Relationship with Generic versus Branded Medicine

4.3.3.1: Elderly Patients Trust Branded Products more than Generic Products

The researcher also inquired from the respondents if elderly patients’ trusted branded products more compared to generic products to help her determine senior’s relationship with generic versus branded products. This would facilitate in determining the effects of generic product market share on original product market share. The results gathered revealed that, 77.7% of the respondents cumulatively disagreed and strongly disagreed that elderly patients trusted branded products as opposed to the generic products after taking the branded drugs for a long time, 13.3% cumulatively agreed and strongly agreed while only 9% remained neutral as shown on table 4.9 below.

Table 4.9: Elderly Patients Trust Branded Products more than Generic Products

<table>
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<th>Percent</th>
<th>Cumulative Percent</th>
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</thead>
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<tr>
<td>Strongly Agree</td>
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<td>Agree</td>
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<td>Disagree</td>
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<td>25</td>
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</tr>
<tr>
<td>Total</td>
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<td></td>
</tr>
</tbody>
</table>
4.4 Effects of Generic Pharmaceutical Prices on Market Share of Original Product

4.4.1 Government Regulations on Pharmaceutical Prices

4.4.1.1: Government of Kenya Regulated Prices of Pharmaceutical Products

The researcher wanted to know if the Kenyan government regulated prices of pharmaceutical products, in order to understand the impact of government price regulations on the market share of both original and generic products. From the findings, 64.1% of the respondents disagreed and strongly disagreed that the government of Kenya regulated prices of pharmaceutical products, 30% agreed and strongly agreed while 5.9% remained neutral as represented on table 4.10 below.

Table 4.10: Government of Kenya Regulated Prices of Pharmaceutical Products

<table>
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<tr>
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</tr>
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4.4.1.2: Price Regulation Efficient for Reducing Pharmaceutical Drug Prices

To facilitate the researcher in determining the effects of generic product price on original product market share, she asked the respondents if price regulations were efficient for reducing pharmaceutical drug prices. The following findings were revealed from the study; 87% of the respondents agreed and strongly agreed that price regulations were efficient for reducing pharmaceutical drug prices, 11% disagreed and strongly disagreed while 2% remained neutral as further reflected on figure 4.9 below.
4.4.1.3: Kenya Government did not Allow Price Increases Due to Quality

To enable the researcher determine whether the government of Kenya allowed price increases due to quality especially of the branded products, she inquired from the respondents if the government allowed price increase due to quality. This would facilitate in determining the effects of generic product price on market share of original product. From the results, 78.2% of the respondents cumulatively agreed and strongly agreed that Kenya government did not allow price increases due to quality of pharmaceutical product, 9.8% cumulatively disagreed and strongly disagreed while 22% remained neutral as displayed on table 4.11 below.

Table 4.11: Kenya Government did not Allow Price Increases Due to Quality

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</tr>
<tr>
<td>Total</td>
<td>276</td>
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</tr>
</tbody>
</table>
4.4.1.4: Regulations Controlled Demand for Expensive Products

The researcher asked the respondents if price regulations controlled demand for expensive branded pharmaceutical products, in order to understand better the effect of generic product price on original product market share. The findings were as follows; 68.8% of the respondents cumulatively strongly agreed and agreed that price regulations controlled demand for the expensive branded pharmaceutical products, 23% cumulatively strongly disagreed and disagreed while 8.2% remained neutral as reflected on table 4.12 below.

Table 4.12: Regulations Controlled Demand for Expensive Products

<table>
<thead>
<tr>
<th>Valid</th>
<th>Strongly Agree</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
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<td>Disagree</td>
<td>77</td>
<td>28</td>
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<tr>
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<td>Strongly disagree</td>
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<td>10</td>
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<td>78.8</td>
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<tr>
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<td>Not applicable</td>
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<td>276</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4.4.1.5: Maximum Prices for Generics were set by the Kenya Government

To determine the effect of generic product price on market share of original product, the researcher inquired from the respondents if maximum prices for generics were set by the government of Kenya. The following findings were drawn from the sturdy; 78% of the respondents cumulatively disagreed and strongly disagreed that maximum prices for generics were set by the government of Kenya, 18% agreed and strongly agreed while only 4% remained neutral as indicated on figure 4.10 below.
Figure 4.10: Maximum Prices for Generics were set by the Kenya Government

4.4.1.6: Government Generic Prices Cheaper than Original

The researcher asked the respondents if the maximum prices set by the government of Kenya were usually below the prices of original products. This would help in determining further, the effect of generic product price on original product market share. The findings revealed that, 58.7% of the respondents strongly disagreed and disagreed that the maximum prices set by the government were usually below the prices of original products, 29.7% cumulatively strongly agreed and agreed while 11.6% remained neutral as shown on table 4.13 below.

Table 4.13: Government Generic Prices Cheaper than Original

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
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<tr>
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<td></td>
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<td></td>
</tr>
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<td>18.1</td>
<td>18.1</td>
<td>29.7</td>
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<tr>
<td>Disagree</td>
<td>98</td>
<td>35.5</td>
<td>35.5</td>
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<td>Strongly disagree</td>
<td>64</td>
<td>23.2</td>
<td>23.2</td>
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</tr>
<tr>
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<td>Total</td>
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<td></td>
</tr>
</tbody>
</table>

4.4.1.7: Subsequent Generic Entrants to Set Prices Lower than First Entrants

To determine the effects of generic product price on market share of original product, the researcher asked the respondents if subsequent generic entrants were indeed bound to set their prices much lower than the first entrants. The findings revealed that, 86% of the
respondents strongly agreed and agreed that subsequent generic entrants were usually bound to set their prices much lower than the first entrants, 8% cumulatively disagreed and strongly disagreed while 6% remained neutral as highlighted further on figure 4.11 below.

**Figure 4.11: Subsequent Generic Entrants to Set Prices Lower than First Entrants**

**4.4.1.8: Price Regulations Led to a Higher Generic Price Leveling Off**

To determine the effects of generic product price on original product market share, the researcher asked the respondents if price regulations led to leveling off of generic prices at a higher rate compared to original products. The findings revealed that indeed, price regulations led to leveling off of generic prices at a higher rate as compared to the original drugs, since 65.5% of the respondents agreed and strongly agreed, 18% disagreed and strongly disagreed while 16.4% remained neutral as displayed on table 4.14 below.

**Table 4.14: Price Regulations Led to a Higher Generic Price Leveling Off**

<table>
<thead>
<tr>
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<td></td>
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<td></td>
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<td>98</td>
<td>35.5</td>
<td>35.5</td>
<td>65.5</td>
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<td>Disagree</td>
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</tbody>
</table>
4.4.2 Consumer Price Sensitivity

4.4.2.1: Large Proportion of Re-Imbursement assigned to Generics

The researcher asked the respondents if large proportion of insurance re-imbursement was assigned to generic products, in order to determine the level of consumer price sensitivity among the corporates. This would be very instrumental in establishing the effects of generic product prices on market share of original product. 80.6% of the respondents cumulatively agreed and strongly agreed that indeed, a large proportion of the insurance re-imbursement was usually assigned to generic medicine as opposed to original medicine, 14.1% cumulatively disagreed and strongly disagreed while 5.3% remained neutral as shown further on table 4.15 below.

Table 4.15: Large Proportion of Re-Imbursement assigned to Generics

<table>
<thead>
<tr>
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<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
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<tr>
<td>Valid Strongly disagree</td>
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<td>94.7</td>
</tr>
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<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

4.4.2.2: Most Insurance Insist on a Compulsory Substitution with Generics

To establish if most Insurance companies insisted on a compulsory substitution of the original product with a generic version, the researcher posed this question to the respondents. This would facilitate in determining the effects of generic product price on original product market share brought about by consumer price sensitivity. The findings were as follows; 80% of the respondents agreed and strongly agreed that most third party payers (Insurance companies) insisted on a compulsory substitution of an original brand with the cheapest generic brand available, 13% strongly disagreed and disagreed while 7% remained neutral as shown on figure 4.12 below.
4.4.2.3: Price Competition among Generics Led to Price Undercutting

The researcher asked the respondents if price competition among generics led to price undercutting of the generic products so that she could understand the level of price sensitivity among consumers. This would help in establishing the effect of generic product price on original product market share. The following results were obtained from the study; 65.5% strongly agreed and agreed that price regulations led to leveling off of generic prices at a higher rate as compared to the original drugs, 18% disagreed and strongly disagreed while 16.5% remained neutral as reflected on table 4.16 below.

Table 4.16: Price Competition among Generics Led to Price Undercutting

<table>
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<tr>
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<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<tr>
<td>Agree</td>
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<tr>
<td>Disagree</td>
<td>28</td>
<td>10.0</td>
<td>10.0</td>
<td>75.5</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>22</td>
<td>8.0</td>
<td>8.0</td>
<td>83.5</td>
</tr>
<tr>
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<td>16.5</td>
<td>16.5</td>
<td>100.0</td>
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<tr>
<td>Total</td>
<td>276</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>
4.4.2.4: Patients Aware of Generics and Buy them because they are Cheap

To help determine the effect of generic product price on original product market share, the researcher inquired from the respondents if patients were aware that generics exist and actually bought them because they were cheaper than original products. 80% of the respondents agreed and strongly agreed that patients were aware that indeed generic medicines existed and actually went for them since they were cheaper than original products, 15% disagreed and strongly disagreed while only 5% remained neutral as shown further on figure 4.13 below.

![Pie chart showing responses to awareness of generics and buying due to price]

**Figure 4.13: Patients Aware of Generics and buy them because they are Cheap**

4.4.2.5: Generic Companies Offer Incentives to Pharmacies

The researcher asked the respondents if generic companies offered more incentives to pharmacies to encourage them dispense more of their products as compared to original companies. This would enable the researcher determine the effect of generic product price on original product market share especially if the incentives were in form of price discounts and free goods. 87% of the respondents strongly agreed and agreed that the generic companies offered incentives to the pharmacies to encourage them to dispense their products more compared to the original products, 9% disagreed and strongly disagreed while 4% remained neutral as shown on figure 4.14 below.
Figure 4.14: Generic Companies Offer Incentives to Pharmacies

4.4.3 Price of Specialty Pharmaceutical Brands

4.4.3.1: Generic Competition Reduced Morale to Innovator Companies

The researcher asked the respondents if generic competition on the basis of price reduced morale to innovator companies to come up with new products that they could use to expand their market share. This would help in determining the effect of generic product price on original product market share. The following results were drawn from sturdy, 60% of the respondents strongly agreed and agreed that generic competition led to a reduced morale to innovator companies to invest in research and development, 35% strongly disagreed and disagreed while 5% remained neutral as highlighted on figure 4.15 below.
4.4.3.2: Upward Trend in the Sale Revenue from Specialty Products

The researcher inquired from the respondents if there was an upward trend in the sales revenue from specialty products, so that she could establish if original companies could recoup the revenue they lost to generic companies in terms of market share. 53.2% of the respondents agreed and strongly agreed that there was an upward trend in the sales revenue derived from specialty products and that most original pharmaceutical companies were currently focusing on these products, 40.6% strongly disagreed and disagreed while 6.2% remained neutral as shown on Table 4.17 below.

Table 4.17: Upward Trend in the Sale Revenue from Specialty Products

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
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<tr>
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<td>76.4</td>
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<td>17.4</td>
<td>93.8</td>
</tr>
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<td>6.2</td>
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<tr>
<td>Total</td>
<td>276</td>
<td>100.0</td>
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<td></td>
</tr>
</tbody>
</table>
4.5 Effects of Generic Marketing factors on Market Share of Original Product

4.5.1 Types of Marketing Activities (Advertising)

4.5.1.1: Effects of Advertising of Generic Medicine Declined with Time

The researcher inquired from the respondents if effects of advertising of generic medicine declined with time. This was to assist in determining the effects of generic marketing factors on original product market share. 35.9% of the respondents strongly agreed and agreed that effects of advertising of generic medicine declined with time, 58% strongly disagreed and disagreed while 6.1% remained neutral as shown on table 4.18 below.

<table>
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<tr>
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<td>35.9</td>
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<td>Disagree</td>
<td>34.8</td>
<td>34.8</td>
<td>70.7</td>
</tr>
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<td>23.2</td>
<td>93.9</td>
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<tr>
<td>Total</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

4.5.1.2: Advertisement Provided Misleading Information to Patients

To determine if advertising provided misleading information to the patients, the researcher posed this question to the respondents. This would facilitate her to determine the effects of generic marketing factors on original product market share. The following findings were gathered from the sturdy; 12 % of the respondents strongly agreed that advertisement provided misleading information to the patient, 30% agreed, 40% disagreed and 18% strongly disagreed that advertisement provided misleading information to the patient as reflected on figure 4.16 below.
4.5.1.3: Representatives from Brand Companies were Product Focused

The respondents were asked if sales representatives from brand or original companies were more product focused compared to the ones from generic companies. This was to help the researcher determine the effects of generic marketing factors on market share of original products. 75.1% of the respondents disagreed and strongly disagreed cumulatively that pharmaceutical representatives from brand companies were more product focused as opposed to being customer focused, and 22% cumulatively agreed and strongly agreed while 2.9% remained neutral as revealed on table 4.19 below.

Table 4.19: Representatives from Brand Companies were Product Focused

<table>
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<tr>
<th></th>
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<tbody>
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</tr>
<tr>
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<td>45.0</td>
<td>97.1</td>
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<tr>
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</tr>
<tr>
<td>Total</td>
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<td></td>
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</table>
4.5.1.4: Effects of Advertising of Original Medicine Declined with Time

The researcher asked the respondents if effects of advertising of original medicine declined with time, in order to help determine the effects of generic marketing factors on original product market share. The findings were as follows; 68% cumulatively of the respondents strongly agreed and agreed that impacts of advertising of original medicine declined with time, 18% of the respondents strongly disagreed and disagreed while 14% remained neutral as portrayed on table 4.20 below.

Table 4.20: Effects of Advertising of Original Medicine Declined with Time

<table>
<thead>
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<td>Total</td>
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<td></td>
</tr>
</tbody>
</table>

4.5.1.5: Competition had Reduced Advertising Effectiveness

The respondents were asked if advertisement competition between generic and original products within the pharmaceutical industry had reduced advertisement effectiveness. This would help in establishing the effects of generic marketing factors on original product market share, 60.3% of the respondents cumulatively disagreed and strongly disagreed that competition between generic and brand medicine had reduced advertisement effectiveness for both products, 25.7% agreed and strongly agreed while only 14% remained neutral as revealed on figure 4.17 below.
4.5.1.6: Consumers Searched Internet to Acquire Knowledge about Generics

To determine the impact of generic internet marketing, the researcher inquired from the respondents if consumers searched through the internet to acquire knowledge about generic products. This would help the researcher to establish the effects of generic marketing factors on original product market share. 78% of the respondents strongly agreed and agreed that indeed consumer’s searched through the internet to acquire knowledge about the availability of generic versions of brands that retailed at a price cheaper than the original brands, 17% strongly disagreed and disagreed while 5% remained neutral as shown on figure 4.18 below.
Figure 4.18: Consumers Searched Internet to acquire Knowledge about generic medicine

4.5.1.7: Pharmaceutical Companies to Restrict DTCA during the 1st 2 years

The researcher inquired from the respondents if pharmaceutical companies had to restrict direct to consumer advertising during the first two years within which a product was launched. This would help in establishing the effects of generic marketing factors on original product market share. 52.2% of the respondents strongly disagreed and disagreed that pharmaceutical companies had to restrict direct to consumer advertising during the first two years within which a product was launched, 41.7% strongly agreed and agreed while 6.1% remained neutral as shown on table 4.21.

Table 4.21: Pharmaceutical Companies to Restrict DTCA during the 1st 2 years

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</table>
4.5.1.8: Representatives from Generic Firms Were More Products Focused

To determine the effects of generic marketing factors on original product market share, the researcher asked the respondents if sales representatives from generic firms were more product focused. The following findings were revealed from the study, 72.8% of the respondents strongly agreed and agreed that indeed pharmaceutical representatives from generic companies were more product focused as opposed to customer focused, 18.2% cumulatively strongly disagreed and disagreed while 9% remained neutral as reflected on figure 4.19 below.

Figure 4.19: Representatives from Generic Firms Were More Product Focused

4.5.2 The Role of a Pharmacist in Pharmaceutical Marketing

4.5.2.1: Pharmacy Switching Done in case of a more Effective Medicine

The respondents were asked if most switching conducted at the pharmacy was done when the pharmacist felt a different medicine would be more effective on the patient. This would help in establishing the effects of switching especially with generic products on original product market share. 70.7% of the respondents disagreed and strongly disagreed cumulatively that most switching conducted at the pharmacy was done when the pharmacist felt a different medicine would be more effective on the patient, and 27.1% agreed and strongly agreed while 2.2% remained neutral as shown on table 4.22.
Table 4.22: Pharmacy Switching Done in case of a more Effective Medicine

<table>
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<tr>
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</table>

4.5.2.2: Pharmacy Switching due to Economic Status of the Patient

The respondents were asked if most switching at the pharmacy was due to economic status of the patient, in order to understand the role of a pharmacist in pharmaceutical marketing. 76.8% of the respondents agreed and strongly agreed cumulatively that most switching at the pharmacy was due to economic status of the patient while 20.2% cumulatively disagreed and strongly disagreed and 3% remained neutral as reflected on figure 4.20 below.

Figure 4.20: Pharmacy Switching due to Economic Status of the Patient
4.5.2.3: Pharmacy Switching Due to Special Promotions at the Pharmacies

The researcher asked the respondents if switching conducted at the pharmacy was due to special promotions by pharmaceutical companies. This would help in determining the effects of generic marketing factors on original product market share. 79% of the respondents agreed and strongly agreed that indeed most switching conducted at the pharmacy was due to special promotions by pharmaceutical companies, 11% disagreed and strongly disagreed while 10% remained neutral as reflected on figure 4.21 below.

![Figure 4.21: Pharmacy Switching Due to Special Promotions at the Pharmacies](image)

4.6 Relationship between Original Product Market Share and Independent Variables

Table 4.6.1: Coefficients of Regression

<table>
<thead>
<tr>
<th>Model</th>
<th>Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>.557</td>
<td>1.659</td>
</tr>
<tr>
<td></td>
<td>Generic Product Market Share</td>
<td>-.133</td>
<td>2.697</td>
</tr>
<tr>
<td></td>
<td>Generic Product Price</td>
<td>.897</td>
<td>13.386</td>
</tr>
<tr>
<td></td>
<td>Generic Marketing factors</td>
<td>-.091</td>
<td>1.867</td>
</tr>
</tbody>
</table>

*a Dependent Variable: Dependent Variable: market share of the original pharmaceutical products*
From table above, the regression equation of the relationship is given by:

\[
\text{Market share of the original pharmaceutical products} = 0.557 + (-0.133) \times \text{Generic Product Market Share} + 0.897 \times \text{Generic Product Price} + (-0.091) \times \text{Generic Marketing factors}.
\]

From the equation, the generic product market share and generic product marketing factors coefficients was negative, which indicated that there was a statistically significant strong negative relationship between market share of the original pharmaceutical products and these two independent variables. This indicated that as market share and marketing factors of generic products increased, the market share of original pharmaceutical products decreased and as they decreased the original product market share increased. From the table it was also observed that generic product price coefficient was positive which indicated that there was a statistically significant strong positive relationship between generic product price and the original product market share. This reflected that a decrease in generic product price would result into a decrease in original product market share while an increase in generic product price would result into an increase in original product market share. The relationships were significant at p-value=.05 since all significance values were less than .05. This highlighted that the relationship between generic product market share, price, marketing factors and the original product market share was not by chance and could be explained by the regression equation.

4.7 Chapter Summary

The major findings with regard to the first objective of the study, which was investigating the effects of generic pharmaceutical product market share, on original pharmaceutical product market share, were as follows; generic penetration had been greatly enhanced by intensive marketing activities by the generic firms, government intervention and increased insurance coverage which recommended more of the generic products. It was also observed that generic products dispensed at a higher rate compared to original products, a sharp drop in the market share of original was highly linked to the entry of generic product and most respondents disagreed that insurance companies encouraged intermolecular substitution, which basically had no effect on the market share of the original pharmaceutical products.
Major findings with regard to the second objective, which was investigating the effects of generic pharmaceutical prices on the market share of original product highlighted that, the government of Kenya neither regulated nor allowed increase of prices due to high quality of pharmaceutical products. It was also observed that most third party payers not only insisted on a compulsory substitution system with the cheapest generic drug available for every drug dispensed, but also assigned a large proportion of insurance reimbursement to generic medicine as opposed to original medicine.

Finally, major findings with regard to the third objective which was investigating the effects of generic pharmaceutical marketing factors on the market share of original product, revealed that impacts of advertising of generic medicine did not decline with time, while that of original medicine declined with time. Consumers searched through internet to acquire knowledge about availability of generic versions of brands, that retailed at a cheaper price and most switching conducted at the pharmacy, was due to economic status of the patient and not that the pharmacist felt that a different brand would be more effective on the patient. The following chapter is chapter five which provided the discussion on the findings of the study, the conclusion derived from the findings, and the recommendations for improvement and further research.
CHAPTER 5

5.0 DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

In this chapter, the researcher provided a discussion on the findings of the research compared to the literature reviewed in chapter two, summary of the study and recommendations for further improvement on the impacts of generic pharmaceutical products on the market share of original product. The research was concluded on the basis of conclusions drawn from the research objectives.

5.2 Summary of the Study

The purpose of this study was to investigate the effects of generic pharmaceutical products on the market share of original pharmaceutical product, by looking at the various aspects of generic pharmaceutical products. The study attempted to answer the following research questions: How did the market share of generic pharmaceutical products affect the market share of original pharmaceutical products? What were the effects of generic pharmaceutical product price on the market share of original pharmaceutical products? What were the effects of generic pharmaceutical products marketing factors on original pharmaceutical products market share?

The methodology implored was a descriptive study that was used to investigate the implications of generic pharmaceutical products, on the market share of original pharmaceutical products. The study population composed of an estimated 750 pharmacy technologists. A total of 300 pharmacy technologists were sampled out of these through convenience sampling, from which 2 pharmacy technologists were selected from each of the 150 chemists that had been randomly selected within the CBD. A total of 300 questionnaires were issued to the respondents but only 276 were filled and returned successfully for analysis, resulting into a response rate of 92%. Pilot testing was conducted before the real questionnaires were administered in order to validate the reliability of the data collection tool (questionnaire). Data was analyzed using the Statistical Package for Social Sciences (SPSS) software and the results presented in tables, bar graphs and pie charts.
Out of the 276 respondents, 29% were female while 71% were male. This could be attributed to the fact that most people studying and practicing pharmacy in Kenya are male. The age of the respondents ranged between 24-52 years old with an average age of 32.77 years. Years spent in practice also varied for the respondents with a mean of 5.9 years which indicated that, the majority of respondents had different years of experience in their profession but had averagely worked for 5.9 years, which was enough time to learn more and hence increased the reliability of the information given by the respondents on the study.

The major findings with regard to the first objective of the study, which was investigating the effects of generic pharmaceutical product market share, on original pharmaceutical product market share, were that, generic penetration had been greatly enhanced by intensive marketing activities by the generic firms, government intervention and increased insurance coverage which recommended more of the generic products. It was also observed that generic products dispensed at a higher rate compared to original products, a sharp drop in the market share of original was highly linked to the entry of generic product and most respondents disagreed that insurance companies encouraged intermolecular substitution, which basically had no effect on the market share of the original pharmaceutical products.

Major findings with regard to the second objective, which was investigating the effects of generic pharmaceutical prices on the market share of original product highlighted that, the government of Kenya neither regulated nor allowed increase of prices due to high quality of pharmaceutical products. It was also observed that most third party payers not only insisted on a compulsory substitution system with the cheapest generic drug available for every drug dispensed but also assigned a large proportion of insurance reimbursement to generic medicine, as opposed to original medicine.

Finally, major findings with regard to the third objective, which was investigating the effects of generic pharmaceutical marketing factors on the market share of original product, revealed that, impacts of advertising of generic medicine did not decline with time while those of original medicine declined with time. Consumers searched through internet to acquire knowledge about availability of generic versions of brands, that retailed at a cheaper price and most switching conducted at the pharmacy, was due to economic status of the patient and not that the pharmacist felt that a different brand would be more effective on the patient.
5.3 Discussions

5.3.1 Effects of Generic Product Market Share on Original Product Market Share

The research findings revealed that, indeed intensive marketing activities promoted generic penetration. This registered 78% positive response. This generic penetration led to generic products dispensing at a higher rate, compared to original products. Government interventions also promoted generic penetration, with a high positive response of 80%. This was in line with Grabowski and Vernon (1996), who asserted that factors such as growth of managed care had impacts on generic utilization alongside intensive marketing activities. It is also in line with the Waxman-Hatch Act imposed by the government of the United States, which increased generic entry dramatically resulting in brand pioneers losing market share much more rapidly and deeply than it was before 1984. These authors also highlighted that, generic competition one decade later was very different in that; in the early 1980’s, the level of generic dispensing in the U.S was around 10%, compared to the mid 1990’s when it approached 40%. This resulted into more rapid loss of original product post-generic entry.

The government of Kenya also greatly encouraged generic entry, to facilitate competition in the pharmaceutical industry. These factors contributed to a decline in the market share of original pharmaceutical products.

The research also revealed that increased insurance coverage greatly encouraged the growth of generic medicine, with 64.8% positive response. This was supported by Atken and Berndt (2011), when they suggested that growth of generic prescription drug insurance coverage as one of the factors attributing to market penetration of generic medicine. They further highlighted that in 1995, 38% of prescriptions were paid for entirely by cash while 62% were paid for by insurance. Ten years later, the cash share of prescriptions had fallen to 12.1% while 87.9% of the prescriptions were paid for by insurance. In 2010, the cash share fell further to 8.3%. It is true that even today in Kenya, some drug insurance companies are more focused in providing consumers access to low cost drugs which they consider only to be the generics and not the original drugs. The growth in generic insurance coverage was a factor considered to decrease the market share of original pharmaceutical products.

The research findings disagreed with the fact that insurance companies as well as cash payers, which registered 72% negative response, greatly encouraged intermolecular generic brand substitution. This was contrary to what Aitken, et al (2008) had observed in 2007 with
Lipitor (brand), that was challenged by less costly generic versions of Pravachol (pravastatin) and Zocor (simvastatin). This challenge made most insurance companies to shift their patients who were on Lipitor to Zocor and Pravachol, resulting into the market share of the two generics to increase from 2.8 Million in June 2006 to 4.8 Million in December 2007 while that of Lipitor fell to 12%. Since this was not the case in the Kenyan market, intermolecular generic brand substitution by insurance companies for this study was considered to have no implication on the market share of original.

From the findings, a sharp drop in the market share of an original product was highly linked to entry of generic competition, following the expiry of its patent. This had 76.5% positive response. Drugs without generic version were the main barrier to generic penetration with 64.9% positive response. This supported Atken, et al (2008) who highlighted that, a sharp drop in sales of blockbusters (original drugs) in US was attributed to patent expiry and subsequent competition from the generic product. Therefore, these factors were considered to decrease the market share of original product in this study.

An upward trend in the market share of generic medicine, compared to that of the original medicine over the last 5 years registered 88% positive response. This trend was likely to continue even in the coming 10 years also registered 88% positive response. This was in line with Atken and Brndt (2011), who conducted a study at 5 year interval between 1984 to 2009, which had revealed that in 1984, generic share was only 18.6%, a decade later, the share had doubled to 36% and fifteen years later it was 49.7% almost 14% greater than five years earlier. These authors had also observed that in very recent years, growth of generic market share had accelerated more rapidly than it had been observed in the previous years. This trend observed was considered as a threat to the original pharmaceutical companies in Kenya, since as the generic market share increased, the original product market share decreased.

The research also revealed that patent protection with 86% positive response, was the main barrier to generic penetration. The fact that the rate at which generics substituted original brands had reached 100% in some molecules like calcium channel blockers, had 68% positive response. These findings supported Iglesias, et al (2011) who observed that generic efficiency rate was approaching its 100% ceiling and reports had indicated that future growth
in the total generic market share would depend critically on the movements in the share of
generic accessible. The authors further highlighted that with major brands expected to lose
patent protection in the coming near future, it was reasonable to expect continued growth in
the share generic accessible thus in the total generic market share perhaps at slightly lower
rates than in the recent past. They observed that calcium channel blockers class of medicine
had attained very high rates of generic efficiency almost 100% and furthermore when
Norvasc, the leading brand began to face generic entrants in 2007, the generic market share
increased from 47% in 2006 to 96% in 2009. They concluded that with no remaining patent
protected calcium channel blockers currently on the market, this whole therapy area was now
essentially entirely generic. Having proven that this was also the situation even in the Kenyan
pharmaceutical market, it was in order to cite that the high generic substitution rate also
contributed to the decline in original pharmaceutical product market share.

The research findings also revealed that the government of Kenya permitted pharmacists to
substitute a physician’s prescription (brand) with a generic version, if the original was not
available. This had 76.8% positive response. This finding supported Kasselheim, et al
(2010), who had observed that, many countries permitted pharmacists to substitute a generic
version if one was available whenever a physician wrote a prescription and that since 1984;
generic drugs had attained approval from US FDA on the basis of studies demonstrating that
they are bioequivalent to the brand name versions. Considering the factors mentioned above,
it was reasonable to highlight that original products lost volumes of sales to their generic
counterparts mainly because they were considered to be bioequivalent with the generics and
therefore could easily be substituted especially when not available possibly because of poor
distribution channels resulting into a decline in market share of original products.

The results also revealed that the Kenya government permitted pharmacists to substitute a
physician’s prescription (brand) with a generic version, only with consent from the physician.
This registered 76.5% positive response. This was supported by Polen, et al (2009) who
observed that some US states like Hawaii and Tennessee had passed legislation that required
an informed consent from the prescriber or a notification from the prescriber permitting
substitution. The authors also confirmed that several other states had also considered similar
actions. This substitution greatly reduces the market share of original pharmaceutical
products in comparison to that of the generics.
The results revealed that elderly patients did not trust branded products as opposed to generic products, after taking the branded products for a long time. This had 77.7% negative response. This was contrary to Deshpande, et al (2013) who observed from a Canadian study that focused on the senior’s relationship with prescription pharmaceutical brands. The authors had observed that most senior consumers usually are on prescription drugs for long duration of time. This progressively pushes them to develop relationships with the brands that they take. In 2010, 62% of seniors 65 years and older consumed 5 or more classes of prescription drugs to manage their chronic ailments as revealed by the Canadian Institute of Health Information Report. These results revealed that these senior’s may have arranged relationship with either generic or original drugs that met their varying needs. With the contrary results from the findings, senior’s relationship with generic versus branded drugs was considered to have no implication on the market share of original pharmaceutical products.

5.3.2 Effects of Generic Product Prices on Market Share of Original Product

The research results revealed that the government of Kenya did not regulate prices of pharmaceutical products, which had a negative response of 64.1%. Furthermore, the government of Kenya did not allow price increases due to high quality of pharmaceutical products, which registered a positive response of 78.2%. This was contrary to Junoy (2010), who observed that most European Union (EU) countries intervened in pharmaceutical market both by regulating the maximum consumer price of generics (price caps) and by setting the maximum reimbursement rate, especially by means of reference pricing systems. Ball and Mackert (2013), also observed that according to European Generic Medicine Association (EGA) 78% of a sample of 27 European countries utilized some form of direct generic price regulation in 2007. However, some countries like Germany, the Netherlands, Sweden and United Kingdom applied free or quasi-free pricing to generics like the United States. Most countries that apply the price-cap regulation system set the price cap as the average observed price in other countries which was usually a certain percentage below the innovator’s price. Kenya being a free pharmaceutical pricing country, the original pharmaceutical companies were likely to lose their sales to generic companies due to price exploitation of the final user by the distributors, which would render the product too expensive and not affordable. This would eventually result into a decline in the original product market share.
The research also revealed that most third party payers (insurance) insisted on compulsory substitution system with the cheapest generic drug available for every drug dispensed, which registered 80% positive response. These third party payers also assigned a large proportion of the insurance re-imbursement to generic medicine as opposed to original medicine, which had 80.6% positive response. This was in line with Ball and Mackert (2013), when they asserted that, although pricing was free in Sweden the reimbursement rate was set according to the lowest price with a system of compulsory substitution with the cheapest generic drug updated every 2 months. This resulted into generic prices falling by 40% in 2005 which was higher than in 2003. In UK, a maximum reimbursement rate was applied to a large proportion of the commonly prescribed generic medicine in primary care unlike branded medicines. All these factors considered, reduce the market share of original pharmaceutical products.

The research findings further revealed that price regulations were efficient for reducing pharmaceutical drug prices, with 87% positive responses. These regulations were also efficient for controlling demand for the expensive branded pharmaceutical product with 68.8% positive response. This supported the findings of Stross, Harry and Mariott (2009) who highlighted that Reference Pricing as a form of price regulation was generally seen as an efficient mechanism for reducing drug prices as it promoted self-restrain, controlled demand for expensive drugs (original/brand) and promoted appropriate use of drugs. Since the regulations controlled demand for the expensive branded drugs, this factor was considered to contribute to a decline in the original product market share.

The research also revealed that in Kenya, the government did not set maximum prices for generics, which registered a negative response of 78%. The fact that these maximum prices were usually cheaper than the original products, registered a negative response of 58.8%. Despite this, the findings also revealed that subsequent generic entrants were usually bound to set their prices much lower than the first entrant, with a high positive response of 86%. This was in line with Ball and Mackert (2013) when they observed that most countries that apply the price-cap regulation system, set the price cap as the average observed price in other countries which was usually a certain percentage below the innovator’s price. For example in Australia, the first generic entry had to set the selling price at least 48% lower than the originator-branded pharmaceutical, the second had to be 15% lower than the first generic and the third had to be 10% lower than the second. Although Kenya did not apply
the price-cap regulations, it was evident from the results that still subsequent generic entrants, were bound to have a much lower price than the first entrants which contributed to a reduction on the market share of original product.

The research findings also revealed that, price competition among generic firms led to numerous prices undercutting, with 76.1% positive response. These numerous prices undercutting, resulted into generic products becoming cheaper than original products thus decreasing the market share of original product. This finding supported Dlyst and Simoens, (2011), who reported that a study in Sweden revealed that the impact of price competition from generic medicine on original drug depended on the number of competitors. One additional generic competitor, lowered prices of originator medicines by an average of 4-7%. Entrance of more generic competitors led to further reductions of prices of the brand medicines. The same phenomenon was observed in Italy.

Further findings from the study suggested that, price regulations led to leveling off of generic prices at a higher rate as compared to the original products, with 65.5% positive response. This supported Junoy (2010), who suggested that price cap regulation led to leveling off of generic prices as opposed to brands prices, at a higher level than it would occur in the absence of this regulation. For example, in Ontario (Canada) in 1993, the price of the first generic entry could be no higher than 70% of the price of the branded products. That of the subsequent entries could be no higher than 90% of that of the first. This highly contributes to the original products losing their market share to the cheaper generic products.

The study also revealed that, indeed patients were aware that the generics existed and actually went for them mainly because they were cheaper, in comparison to the original drugs which had a high positive response of 80%. This greatly supported Stross, Harry and Mariott (2009) report from a study conducted in Switzerland. The study was investigating the influence of price on purchase decision. It revealed that until recently, in Switzerland the price did not have any relevance. However, since the Swiss government implemented a new regulation, that twenty percent of the price had to be paid directly by the patient, the price became more relevant. The new regulation raised the patients’ price sensitivity. Patients know that generics do exist and are increasingly asking for them when purchasing medication, resulting into a decline in the original product market share.
The findings established that, generic companies offered incentives to pharmacies to encourage them to dispense their drugs, in order to acquire a larger market share. This registered a positive response of 87%. According to Dlyst and Simoens (2011), it had been argued that the generic medicine was able to deliver competitive prices if only it could attain a high market share of the off-patent pharmaceutical market. This high market share depended on demand. This required the generic firms to create incentive policies for physicians to encourage them to prescribe generic medicine, for pharmacies to encourage them to dispense generic medicine and for patients to encourage them to ask for generic medicine. This was considered to contribute to decrease in the market share of original products, especially if they did not offer such incentives to the respective groups.

The other most critical finding revealed from the study was that, generic competition led to a reduced morale to the innovator companies to invest in research and development. This had 60% positive response and only 35% negative response. This was in line with Galizzi, et al (2011) who asserted that patients switching to the least expensive drug might consume more healthcare services. These patients also traded economic savings for appropriate drug matching. Introduction of competition and lowering the current of profits associated to patent protection, resulted into a reduced incentive to invest in Research and Development (R&D) by mainly the innovator pharmaceutical companies. This was considered to decrease further the market share of original pharmaceutical products.

On the other hand, the findings also established that there was an upward trend in the sales revenue derived from specialty products. Therefore, most pharmaceutical companies were focusing on these products currently, with 53.2% positive response and 40.6% negative response. This supported Gudiksen et al (2008), who reported that the importance of specialty pharmaceuticals in near future had been identified by “Nature”. The study predicted that revenue sales derived from specialty products would rise from 43 percent in 2007 to 52 percent in 2012. Thus, for the first time, the industry would achieve a majority of major-product revenue from specialty drugs. Over much of the past 30 years, large pharmaceutical companies had focused primarily on developing and marketing these specialty drugs that were used by large patient populations. This finding further supported Wasuja, Sagar and Sushil (2008) who also reported that the future held high hopes as drug-makers would turn their research budgets towards therapy areas where higher cost drugs would tackle diseases
with high levels of unmet needs such as cancer, multiple sclerosis and diabetes. This was considered to increase the market share of original pharmaceutical product.

5.3.3 Effects of Generic Marketing Factors on the Market Share of Original Product

The results from the research revealed that effects of advertising of generic medicine did not decline with time, which registered a high negative response of 58.8%. Effects of advertising of original products declined with time, which had a high positive response of 68%. This finding was linked to what Danaher, Bonfrer and Dhar (2007) revealed from a research that had been conducted. The findings reported that, advertising effects were likely to follow a dynamic pattern due to many influencing patterns like product life cycle, message content (type) and competition. In terms of product life cycle, elasticity declined over time which was shown by tracking advertising over time or by comparing the advertising elasticity for new versus mature products. The fact that advertisement impact for original products declined with time could be attributed to Bass et al (2007) who reported that, changes in advertising message could also cause shifts in advertising effectiveness. Informative advertising (disease oriented) was effective in new markets as well as for recently introduced products but as markets mature, emotional advertising was more effective because of its persuasive nature. The inverse nature of advertising impacts of generic and original products could eventually be considered to result into a decline in the market share of original product.

The results from the study also revealed that, competition between generic and brand medicine had not reduced advertisement effectiveness for both products. This registered negative response of 60.3% and positive response of 25.7%. This was contrary to what Danaher, Bonfrer and Dhar (2007) who had reported about competition that, research had shown that competitive intensity decreased advertising effectiveness due to clutter. This situation from the findings could be explained that since the generic companies intensified their marketing activities more than the original companies, chances were high that the market had not yet been cluttered with advertisement, thus customers were more exposed to generic advertisement more than the original ones, which could result in to a decline in the market share of original products.

The findings also revealed that, indeed consumers searched through the internet to acquire knowledge about availability of generic versions of brands that retailed at a cheaper price.
This had a high positive response of 78%. This was in line with Deshpande et al (2013) when they reported that, consumers had greatly benefitted from internet in that; they were so exposed to a wealth of information. They were able to read, hear and even discuss about the good and bad effects of prescription pharmaceutical drugs as well as the availability of generics for most generics that retailed much cheaper than the brands. Equipped with this information, they went ahead and discussed these findings with their healthcare providers. In situations where these providers did not have direct control over their brand choice; consumers influenced the decision and the authority of the decision maker. Most consumers searching through the internet to compare prices between generics and original drugs could be considered to be price sensitive and likely to go for the generic version, which would be much cheaper than the original product, leading to a decline in the original product market share.

According to this particular study, advertisement did not provide misleading information to the patient, since it had 59% negative response and only 42% positive response. The majority of the respondents also felt that, pharmaceutical companies did not have to restrict direct to consumer advertising during the first two years within which a product was launched. This had 52.2% negative response and 41.7% positive response. This finding was contrary to what Agres (2010) reported that pharmaceutical companies were facing growing criticism from congress and consumer groups, who were constantly reviewing the role direct to consumer advertising played in their marketing strategies. Critics’ laid heavy blames on such kind of advertising for driving up prescription (brand) drug prices, providing misleading information and finally for increasing the number of patients exposed to health risks. The author in conclusion asserted that following this, a number of authors had suggested that pharmaceutical companies were to voluntarily restrict direct to consumer advertisement during the first two years that a new drug was in the market. In this context direct to consumer advertising as well as restriction of advertising within the first two years of a product launch, was considered to have no impact on the market share of original pharmaceutical product due to the limited data gathered on the same.

The results established further that, pharmaceutical representatives from generic companies were more product focused as opposed to being customer focused. This had 72.8% positive response and only 18.2% negative response. The representatives from original companies
were portrayed to be more customers focused as opposed to being product focused. This registered 75.1% negative response and only 22% positive response. This finding was linked to Kessler (2008), who reported that in an attempt of the pharmaceutical industry to become customer-centric (doctor/pharmacist), it was ending up still to force their marketing and sales process on the consumer, rather than aligning their process with the consumers’ mindset to give them what they needed in order to use their products. The companies were product focused and all they needed was to sell their products, thereby ignoring what the medical professionals really needed in order to use the product. The latest statistics showed that 8 out of ten pharmaceutical representatives usually did not make it past the doctor’s or the pharmacy front door, simply because they were denied access since they did not add value to neither the doctor nor the pharmacist. A real customer-focused selling in the pharmaceutical industry called for aligning existing brand and marketing strategies, messaging and sales materials, clinical knowledge and selling skills to the specific behavior the customer needed whether a doctor or a pharmacist to grant access, enter into clinical discussions, perceive a value proposition and change their clinical behavior and prescribing habits. Product focused approach was considered to be very effective especially where a pull and push strategy was being implemented, which resulted in volumes of sales. Therefore, it was evident that as the generic representatives became more products focused as opposed to customer focused, the generic market share would continue increasing as the original product market share decrease. On the other hand, being customer focused was very instrumental especially when dealing with specialty products. It would facilitate the original representative to cultivate a professional relationship with the customer with time and eventually he or she would be able to get sales in future.

The results further revealed that, most switching conducted at the pharmacy, was due to economic status of the patient. This had a very high positive response of 76.8% and negative responses, which were only 20.2%. Special promotions conducted by pharmaceutical companies registered a positive response 79% and negative response of only 11%. It was also clearly established that, most switching was not done because the pharmacy technologist felt that a different medicine would be more effective on the patient. This had 70.7% negative response and 27.1% positive response. This was linked to what Taher, Stuart and Hegazy (2012) had reported from an investigation whose main objective was; to understand whether
the pharmacists were suggesting the medicines for personal gain given that the medicines provided higher profit margins or not, to understand if the motivations were influenced by pharmaceutical firm’s promotions and finally to understand if their motivations were based on the interest of the patient. Most of the responses suggested that the switching was mainly due to pharmaceutical firms’ promotions. Total switching from both physicians’ prescription and requested brand accounted for 5.92% of the data. It was mainly because the pharmacist felt that a different medicine would be more effective on the patient. 3.62% of the responses were switching due to economic status of the patient. Differences in motivation for switching in different social class neighborhood were also noted. For example, 4.17 percent of the pharmacists were more likely than in other areas to switch due to special promotions in A – class areas. In C-class neighborhoods, switching was mainly driven by the economic status of the patient. With generic pharmaceutical firms becoming more aggressive in marketing cheaper products compared to the original pharmaceutical firms, it was clear that through the special promotions they conducted at the pharmacy, their market share would increase from the substitutions or switching while that of original products would decline further.

5.4 Conclusions

5.4.1 Effects of Generic Product Market Share on Original Product Market Share

The study concluded that the market share of the generic pharmaceutical product had a very big implication on the market share of the original pharmaceutical products because of the upward trend that was observed from the results of the same. This growth was mainly fueled by increased generic insurance coverage, 100% generic substitution of some molecules and the government which highly encouraged generic penetration in order to bring about competition among other factors. The study found these factors very crucial in terms of the original product market share and therefore, the original pharmaceutical firms should look into them to protect their market share.

5.4.2 Effects of Generic Product Price on the Market Share of Original Product

The study concluded that the price of generic pharmaceutical product which is usually lower than that of the original product impacts negatively on the market share of original pharmaceutical product. Issues like patients are aware that generics do exist and actually go for them because they are cheaper than the original products and also insurance companies
insist on a compulsory substitution system with the cheapest generic drug available for every drug dispensed among others have been cited from the study. These factors are very essential especially for the original firms in ensuring their sustainability and therefore, it is in order that they pay attention to them.

5.4.3 Effects of Generic Marketing Factors on the Market Share of Original Product

On this last objective, the study concludes that generic pharmaceutical firms marketing factors affect the original pharmaceutical product market share negatively. The study revealed that the generic firms together with their sales representatives are more aggressive in marketing than the original firms. Factors like special promotions conducted at the pharmacy by the generic firms which result into brand switching should be picked up aggressively by the original companies to enable them convert all the prescriptions that they generate from the doctors to sales figures.

5.5 Recommendations

5.5.1 Recommendations for Improvement

5.5.1.1 Effects of Generic Product Market Share on Original Product Market Share

To curb the increasing trend in the market share of the generic products, the original companies should intensify their marketing activities especially to the third payers and enter contractual agreement with them to use their brands. They can also consider taking longer patents for their innovator brands such that by the time the patent is expiring, they will have recouped their investment and therefore, they can let go the molecule to the generics and focus on innovating other unique molecules that the generics cannot imitate.

5.5.1.2 Effects of Generic Prices on the Market Share of the Original Product

The original products are mainly losing their market to the generic products because of their high prices as revealed from the study. The original pharmaceutical firms can consider, giving incentives to those who purchase their brands to encourage a repeat purchase from the consumers which leads to customer loyalty, they can also consider to cut down their profit margins to make their prices more competitive with the generic prices and also consider putting price regulations to ensure that the end user is not exploited by their distributors.
5.5.1.3 Effects of Generic Marketing Factors on the Market Share of Original Product

From the study, it was evident that generic pharmaceutical firms together with their sales representatives are more aggressive in their marketing activities as compared to the original pharmaceutical firms. The original firms should gather market intelligence about the marketing activities of the generic firms and develop strategies to counteract their operations. The findings also revealed that the original firms are more customer focused as opposed to generic firms who are more product focused. The original firms should consider being customer focused as their strength and direct more effort towards this but also incorporate some push and pull strategies in their marketing which calls for more of being product focused to generate sales today.

5.5.2 Recommendations for Further Studies

This study points out the following investigations that could possibly be conducted in the future: The relationship that elderly patients develop with generic versus original brands of medicine after using them for a long period of time; Impacts of direct to consumer advertising of pharmaceutical products; Bioequivalence of generic and original pharmaceutical products and finally; Factors promoting the increase in market share of the specialty pharmaceutical products.
REFERENCES


APPENDIX 1: QUESTIONNAIRE

LETTER OF INTRODUCTION

To

Name: _________________________________

Address: _________________________________

Date: November 2014

Dear Sir/Madam

RE: REQUEST FOR RESEARCH PARTICIPATION

I am an MBA Marketing student at USIU carrying out a research on the “The implications of the generic pharmaceutical products on the market share of original pharmaceutical product”.

The study is being carried out as part of the requirements of obtaining the degree. In order to carry out the research effectively, you have been selected to form part of the study which is entirely for academic purposes only. I am therefore kindly requesting you to participate by responding to the questionnaire as truthfully and honestly as you can and the information you give will be treated with utmost privacy. You will not be required to fill in your name, unless you voluntarily want to, in which case the name will not appear in the final report that will be submitted to the university.

A copy of the final report will be availed at your request.

Your cooperation and assistance in this research is highly appreciated.

Thank you in advance,

Yours sincerely,

_____________________

Mrs. Oduol Dina

(MBA Student)
If any question is not appropriate to your circumstances do not answer.

A: Respondents Background Information

(Kindly tick where appropriate)

1. Gender: Male □ Female □
2. Age in years……………………………………………………………………
3. How many years have you been in the practice?……………………………..

RESEARCH QUESTIONS

Please tick the choices that you feel suites your situation from the choices provided by the likert scale(1-5). Kindly answer all questions.

1= Strongly Agree
2=Agree
3=Disagree
4. Strongly Disagree
5=Not Applicable

B: Impacts of Generic Pharmaceutical Product Market Share on the Original Product Market Share

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<thead>
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<tbody>
<tr>
<td>4</td>
<td>Intensive marketing activities by the generic companies has greatly promoted generic penetration into the market</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
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<tr>
<td>5</td>
<td>Government intervention has greatly influenced generic penetration into the market</td>
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</tr>
<tr>
<td>6</td>
<td>Generic products dispense at a higher rate compared to the original products</td>
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<td>2</td>
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<td>4</td>
</tr>
<tr>
<td>7</td>
<td>Increased insurance coverage has greatly encouraged the growth of generic medicines</td>
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<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>8</td>
<td>Insurance Companies greatly encourage intermolecular substitution</td>
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<td>2</td>
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<td>9</td>
<td>A sharp drop in the market share of an original product is highly linked to entry of generic competition following the expiry of its patent</td>
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<td>2</td>
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<tr>
<td>10</td>
<td>There has been upward trend in the market share of generic medicine compared to that of the original medicine over the last 5 years.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>11</td>
<td>The upward trend in the generic market share is likely to continue even in the coming 10 years.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>12</td>
<td>Drugs without generic version is the main barrier to generic penetration.</td>
<td>1</td>
<td>2</td>
<td>3</td>
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</tr>
<tr>
<td>13</td>
<td>Patent protection is the main barrier to generic penetration.</td>
<td>1</td>
<td>2</td>
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<td>4</td>
</tr>
<tr>
<td>14</td>
<td>Government regulations also hinder generic penetration.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
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<tr>
<td>15</td>
<td>The rate at which generics substitute original brands has reached 100% in some molecules like calcium channel blockers.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>16</td>
<td>Cash payers greatly encourage intermolecular substitution.</td>
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<td>2</td>
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<td>4</td>
</tr>
<tr>
<td>17</td>
<td>The government of Kenya permit pharmacists to substitute a physician’s prescription (brand) with a generic version if the original is not available.</td>
<td>1</td>
<td>2</td>
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<tr>
<td>18</td>
<td>The government of Kenya permits pharmacists to substitute a physician’s prescription (brand) with a generic version only with consent from the physician.</td>
<td>1</td>
<td>2</td>
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<td>4</td>
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<tr>
<td>19</td>
<td>Generic drugs are similar in efficacy (bioequivalent) to the original drugs.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>20</td>
<td>Elderly patients trust branded products as opposed to the generic products after taking the branded drugs for a long time.</td>
<td>1</td>
<td>2</td>
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## C: Impacts of Generic Pharmaceutical Prices on the Market Share of the Original Product

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<tbody>
<tr>
<td>21</td>
<td>The government of Kenya regulates prices of pharmaceutical</td>
<td>1</td>
<td>2</td>
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<td>4</td>
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<tr>
<td></td>
<td>products</td>
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<tr>
<td>22</td>
<td>The government of Kenya does not allow increasing prices</td>
<td></td>
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<tr>
<td></td>
<td>due to high quality of pharmaceutical products</td>
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<td>23</td>
<td>Most third party payers (insurance) insist on a compulsory</td>
<td>1</td>
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<td></td>
<td>substitution system with the cheapest generic drug available</td>
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<td></td>
<td>for every drug dispensed</td>
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<td>24</td>
<td>A large proportion of the insurance re-imbursement is</td>
<td>1</td>
<td>2</td>
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<td></td>
<td>usually assigned to generic medicine as opposed to original</td>
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<td></td>
<td>medicine</td>
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<tr>
<td>25</td>
<td>Price regulations are efficient for reducing pharmaceutical</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
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<tr>
<td></td>
<td>drug prices</td>
<td></td>
<td></td>
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<tr>
<td>26</td>
<td>Price regulations control demand for the expensive</td>
<td>1</td>
<td>2</td>
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<td>4</td>
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<td></td>
<td>branded pharmaceutical products</td>
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<tr>
<td>27</td>
<td>Maximum prices for generics are set by the government in</td>
<td>1</td>
<td>2</td>
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<td>4</td>
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<tr>
<td></td>
<td>Kenya.</td>
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<tr>
<td>28</td>
<td>The maximum prices set by the government are usually below/</td>
<td>1</td>
<td>2</td>
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<td></td>
<td>cheaper than the original products</td>
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<td>29</td>
<td>Subsequent generic entrants are usually bound to set their</td>
<td>1</td>
<td>2</td>
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<td></td>
<td>prices much lower than the first entrant</td>
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<tr>
<td>30</td>
<td>Price competition among generic firms leads to price</td>
<td>1</td>
<td>2</td>
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<td></td>
<td>undercutting resulting into generics becoming cheaper than</td>
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<tr>
<td></td>
<td>original</td>
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<tr>
<td>31</td>
<td>Price regulations leads to leveling off of generic prices at a</td>
<td>1</td>
<td>2</td>
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<td>4</td>
</tr>
<tr>
<td></td>
<td>higher rate as compared to the original drugs</td>
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</tbody>
</table>
Patients are aware that the generics do exist and actually go for them mainly because they are cheaper in comparison to the original drugs

Generic companies offer incentives to pharmacies to encourage them dispense their drugs in order to acquire a large market share

Generic competition leads to a reduced morale to innovator companies to invest in research and development

There is an upward trend in the sales revenue derived from specialty products and most pharmaceutical companies are currently focusing on these products

### D: Impacts of Generic Pharmaceutical Marketing Factors on the Market Share of Original Product

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</thead>
<tbody>
<tr>
<td>36</td>
<td>Impacts of advertising of generic medicine declines with time</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>37</td>
<td>Impacts of advertising of original medicine declines with time</td>
<td>1</td>
<td>2</td>
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<td>4</td>
</tr>
<tr>
<td>38</td>
<td>Competition between generic and brand medicine has reduced advertisement effectiveness for both products</td>
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<td>2</td>
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<td>4</td>
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<tr>
<td>39</td>
<td>Consumers search through the internet to acquire knowledge about availability of generic versions of brands that retail at a cheaper price</td>
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<td>4</td>
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<tr>
<td>40</td>
<td>Advertisement provides misleading information to the patient</td>
<td>1</td>
<td>2</td>
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<tr>
<td>41</td>
<td>Pharmaceutical companies should restrict direct to consumer advertising during the first two years within which a product is launched</td>
<td>1</td>
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<td>42</td>
<td>Pharmaceutical representatives from generic companies are more product focused as opposed to being customer focused in comparison with representatives from brand companies</td>
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<tr>
<td>43</td>
<td>Pharmaceutical representatives from brand companies are more product focused as opposed to being customer focused in comparison with representatives from generic companies</td>
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<tr>
<td>44</td>
<td>Most switching conducted at the pharmacy is done when the pharmacist feels a different medicine would be more effective on the patient</td>
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<tr>
<td>45</td>
<td>Most switching at the pharmacy is due to economic status of the patient</td>
<td></td>
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</tr>
<tr>
<td>46</td>
<td>Most switching at the pharmacy is due to special promotions conducted by pharmaceutical companies</td>
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</tbody>
</table>

**Thank you for taking your time to complete the questionnaire.**

For any comment or questions, please contact oduoldina@gmail.com
AUTHORIZATION LETTER TO COLLECT DATA

DINA ACHOLA ODUOL

0727713864

25\textsuperscript{th} November, 2014.

Research Office, USIU

Dear Prof. Francis Wambalaba

**RESEARCH STUDY ON IMPLICATIONS OF GENERIC PHARMACEUTICAL PRODUCTS ON MARKET SHARE OF ORIGINAL PHARMACEUTICAL PRODUCTS: A CASE OF PHARMACIES WITHIN CENTRAL BUSINESS DISTRICT OF NAIROBI.**

I am a student at United States International University, currently undertaking Masters in Business Administration (MBA) marketing option. I am in my final year of study and as part of my final assessment I am required to submit a research project on my area of attention. I have selected the above title to investigate the implications of generic pharmaceutical products on market share of original products through questionnaires. All information and opinions will be confidential as I will adhere to ethics of research and be used only for this study.

The study will be beneficial to original pharmaceutical firms since it will enable them realize the market share that they are losing to the generic firms which will prompt them to come up with strategies that they can utilize to recoup this market share.

I look forward to your positive feedback.
# APPENDIX II WORK PLAN

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>MAY</th>
<th>JUNE - AUG</th>
<th>SEPT</th>
<th>SEPT</th>
<th>OCT</th>
<th>OCT</th>
<th>OCT</th>
<th>NOV</th>
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<td>Identification of research topic</td>
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<td>Development of research proposal and identification of relevant materials.</td>
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<td>Pre-testing of research instruments.</td>
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<tr>
<td>Approval of research proposal</td>
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<tr>
<td>Permission to collect data</td>
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<tr>
<td>Organization, analysis and interpretation of data.</td>
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<td>Report writing and presentations</td>
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## APPENDIX III: BUDGET

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<td>Research Assistants(3)</td>
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<tr>
<td>Typing/Photocopy</td>
<td>5,000</td>
</tr>
<tr>
<td>Data analysis</td>
<td>15,000</td>
</tr>
<tr>
<td>Production of final project</td>
<td>5,000</td>
</tr>
<tr>
<td>Printing/Binding</td>
<td>3,000</td>
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<tr>
<td>Transport</td>
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</tr>
<tr>
<td>Stationery</td>
<td>3,500</td>
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<tr>
<td><strong>Sub Total</strong></td>
<td><strong>71,500</strong></td>
</tr>
<tr>
<td>Overhead at 10%</td>
<td>7,150</td>
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<tr>
<td><strong>Total Cost</strong></td>
<td><strong>78,650</strong></td>
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</tbody>
</table>