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**The Influence of Packaging and Brand Equity on Over-The-Counter
Herbal Medicines in Kumasi, Ghana**

By

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DECLARATION

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ABBREVIATIONS AND ACRONYMS

N H I A	National Health Identification Authority
P N D C L	Provisional National Defence Council Law
U N E S C O	United Nations Education & Science Organization
T M /C A M	Traditional Medicine/ Complementary Alternative Medicine
N C P I E	National Council on Patient Information and Education
A E S G P	Association Européenne des Spécialités Pharmaceutiques Grand Public
W H O	World Health Organization
O T C	Over-The-Counter
U N D P	United Nations Development Programme
G F D A	Ghana Food & Drugs Authority
T P M C	Traditional Medicine Practice Council
M O H	Ministry of Health
P O P A I	Point of Purchase Advertising International
W P O	World Packaging Organization
C H P A	Customer Healthcare Products Association
K M A	Kumasi Metropolitan Assembly
F M C G s	Fast Moving Customer Goods
C B B E	Customer-based Brand Equity
G S S	Ghana Statistical Services

DEFINITION OF KEY TERMS

Traditional Medicine: “Diverse health practices, approaches, knowledge and beliefs incorporating plant, animal and/ or mineral-based medicines, spiritual therapies, manual techniques and exercises, applied singularly or in combination to maintain wellbeing, as well as to treat, diagnose or prevent illness” (WHO, 2002d:7).

Herbal Medicine: “Plant-derived material or preparation with therapeutic or other human benefits, which contains either raw or processed ingredients from one or more plants” (WHO, 2005:1).

Over-the-Counter Medicines: Drugs that are produced and dispensed without medical prescription and patients buy them by their own initiative (WHO, 2000b)

Packaging: “The container for a product-encompassing the physical appearance of the container and including the design, colour, shape, labelling and materials used” (Arens, 1996 cited in Kuvykaite, Dovaliene, & Navickiene, 2009: 53).

Brand Equity: “A set of brand assets or liabilities linked to a brand, its name and symbol that add to or subtract from the value provided by a product or service to a firm and /or to the firm`s customers.” (Aaker, 1991:15).

ABSTRACT

In a highly competitive drug market, building vibrant brands would ensure that traditional herbal medicine companies gain sustainable competitive edge and long term profits. More importantly, successful brands need to be recognized as strong and enduring assets that can boost the companies' future growth in the industry. Distinctive packaging design is well-acknowledged to provide less expensive means of creating healthy brands with high commercial value. Despite the numerous advantages associated with well-designed packaging and brand equity of late, traditional herbal medicine companies are yet to reap the benefits in the over-the-counter pharmaceutical market. The purpose of this study was to evaluate the influence of packaging and brand equity of herbal drugs in the over-the-counter medicine market. The research utilized a quantitative research method to align the research objectives with the philosophy underpinning the study. Using a systematic sampling technique, data were gathered face-to-face from 348 respondents selected from the herbal medicine market in Kumasi metropolis in Ghana. Through structural equation modelling (SEM) technique using SPSS Amos 22, the proposed research hypotheses were analysed. The findings of the research indicate that brand loyalty, brand awareness and brand association are the key sources of customer perceptions of brand equity in the over-the-counter market. Essentially, brand loyalty was found to be the most important driver of value for brands in the over-the-counter medicine industry. The results also demonstrate that packaging contributes to enhance brand equity through the impact of brand loyalty, brand association, perceived quality and brand awareness of herbal medicine in the over-the-counter market. The study further found that, among the dimensions of brand equity, packaging plays a substantial role in creating brand loyalty in the over-the-counter pharmaceutical market. The study recommends that traditional herbal medicine companies need to concentrate their efforts on developing brand loyalty given its strategic role in the success of a business. Furthermore, traditional herbal medicine companies need to consider packaging in their brand-building efforts to strengthen overall brand equity in the over-the-counter drug market.

Keywords: Herbal medicine, Over-the-Counter, Brand equity, Packaging, Customers

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CHAPTER ONE

INTRODUCTION AND CONTEXTUALIZATION OF THE STUDY

This chapter provides the introductory part of the study, specifically, the background information, research problem, rationale, scope, research objectives and questions as well as the contributions, ethical considerations and limitations of the research.

1.1 Introduction

The customer market is growing steadily and the number of closely-related products sold in the retail markets keeps on increasing every year. Firms are searching for new ways to gain competitive distinctiveness for providing products that will stand out from the clutter to satisfy their customers. One of the essential marketing elements in today`s competitive environment used to position products differently from that of competitors is packaging design. Packaging design is recognized as one of the important brand-building elements that distinguishes the brand from that of competitors and attracts and sustains customers` attention to the brand. It also strengthens its position and maintains its share in the market, and overall contributes to the sales and profitability of the brand (Garber, Burke, & Morgan, 2000a; Brodersen & Manolova, 2008).

Branding has existed for centuries and over the years, successful companies have been building strong brands to create value over and above competition to satisfy their customers` needs and wants. This is the core objective of marketing strategy: to gain competitive advantage to accomplish growth.

Due to changes in customer lifestyle and an increase in self-service in the retail environment, packaging design has always been used as a major vehicle for advertising brands at the point of-purchase and is a dominant influencer in customer-buying decisions in the store (Brodersen & Manolova, 2008). As a result, packaging design has become an essential part of the marketing strategies of customer-packaged goods industry. In the over-the-counter (OTC) drug market, medicinal products are packaged by combining colours, shapes, images, symbols, graphics and messages, and has been key element for identification and differentiation of medicinal products` brands which engenders safe use of medicines. Arguably, the significance

of product packaging as a promotional and brand-building tool has been increasing (Rettie & Brewer, 2000), as packaging is considered as one of the invaluable brand attributes for creating strong brands with positive equity (Keller, 2013). Building powerful brands has been widely acknowledged as the most valuable intangible asset of a company because it adds financial value to the company. Indeed, in a highly competitive market, products or services can be copied by competitors but it is almost impossible to duplicate a brand as it represents the attitudes and beliefs strongly registered in the memory (Keller, 2013; Dickov & Igić, 2013).

1.2 Background to the Research

The importance of herbal medicines in the primary health care has received worldwide attention, despite the widespread use of conventional drugs in the health care delivery in the world over. It is estimated that about 70 to 95 percent of the people living in the less developed countries depend upon medicinal plant products for basic medical care (WHO, 2011). In Ghana, approximately 80 percent of the populace depends on plant medicines for their basic health care needs (UNDP, 2007).

Herbal medicines consist of processed plant materials or raw plant materials as well as herbal medicinal products with therapeutic or human benefits derived from one or more plants (WHO, 1998:5). In Ghana, medicinal plant products are produced by small-scale traditional medicine firms and these products are usually in the form of mixtures, capsules, pills, tablets, creams and ointments. These medicinal herbal products are distributed in pharmaceutical stores, chemist shops, hospitals and clinics, herbal shops and by licensed practitioners (WHO, 2011; Essegbey, Awuni, Essegbey, Akuffobe, & Mica, 2014; WHO, 2005). Herbal medicines are bought to combat minor sickness, maintenance or fitness of health and also for chronic ailments (Samojlik, 2013 cited by Naresh & Reddy, 2016), and are often used as OTC drugs (WHO, 2011; Essegbey *et al.*, 2014; WHO, 2005).

Medicinal product packaging is considered as an essential regulatory requirement (GFDA, 2013), and it is a key element in the sale of prescription and non-prescription medications. In the OTC product market, medicines are usually bought without prescription, and packaging is the key element that conveys comprehensive information critical to the effective and safe use of the drugs by health care providers as well as patients. The package leaflet, together with the label is the only source of instruction that patients receive (WHO, 2002a), in order to identify

and select the appropriate medication. Indeed, the role of innovative packaging design in the pharmaceutical market cannot be overlooked because it is estimated that 33 percent of all medical errors are caused by poor packaging and labelling, whilst 25 percent is attributed to confusion over naming that has the potential to cause treatment failures (Berman, 2004). Packaging relates to different materials that surround medicinal product from the period of its manufacture till consumption (WHO, 2002a:125).

However, in the recent past, the importance of packaging design was overlooked by many drug companies and was only considered at the final stage of the production processes (Markets & Markets, 2015). And yet, customer product preference is well-influenced by product appearance and more importantly, the design of packaging can contribute to the success of the product in the market (Kauppinen-Raisanen, 2010). Besides, effective packaging design does not only reduce a drug's adverse events resulting from medication errors (European Medicines Agency, 2011), but can also create brand equity (Keller, 2013).

Underwood and Ozanne (1998) are of the view that, due to growing rivalry in business setting, the opportunities for packaging to communicate, attract and influence product choice has been increasing at the point-of-purchase compared to the traditional promotional tools. Kauppinen-Raisanen (2010) also argued that, these developments in the customer goods market have propelled the growing interest for packaging and design issues among marketers and researchers.

Despite the growing importance of packaging design, many firms have not moved beyond their industry's regulatory requirements (Underwood & Ozanne, 1998) to design customer-driven packages to build brand equity. Farquhar (1989) defined brand equity as the additional value a market offering gains from the branding. It is, however, emphasized that the pharmaceutical industry as a whole has been slow to embrace branding strategies and practices compared to their counterparts in the customer-packaged goods industry (Ladha, 2007).

Over the years, the traditional medicine companies, whether small or large have been sustaining their sales through innovations ranging from manufacturing processes to products (Essegbey *et al.*, 2014). The critical success factors for most traditional medicine practice (TPM) in Ghana have been a strong sales force and innovations (Shuiling & Moss, 2004; Essegbey *et al.*, 2014). Arguably, there has been lack of brand focus in the industry, and therefore the key assets and

competitive strength as well as the source of differentiation were solely dependent on the superiority of functional attributes of products rather than brands. It has also been stated that companies do not get money by selling products, but through brands (Kapferer, 2008).

Although, there has been steady growth in the sale of herbal medicines in Ghana, the sector is now facing challenges and problems in the pharmaceutical market (Kumah, Agyapong, & Acheampong, 2015). This is as a result of the increase in cost of research and development, keen competition within the industry as well as the influx of conventional medicines and complementary and or alternative medicines (CAM) imported from India, China and Korea (Essegbey *et al.*, 2014). It has therefore become necessary for herbal medicine manufacturers to find new ways to sustain themselves in the market because they cannot rely solely on innovations and a powerful sales force to achieve a sustainable edge over competition to succeed in the industry.

According to Chaudhary (2011) building a successful brand is one of the powerful competitive weapons to break through the competition. It has also been suggested that improvement in packaging design has the potential to create strong brands (Keller, 2013). Building strong brands represents a new competitive tool (Shuiling & Moss, 2004) which can insulate against competitive attacks and entry into the market, and maintain market share (Farquhar, 1989; Keller, 2013). This perhaps has been neglected by herbal medicine companies in Ghana in their efforts to sustain and increase their market share.

In spite of, the importance of packaging design and branding in the distribution of herbal medicines at the OTC drug market, there is little or no comprehensive theory available to confirm their significance in the OTC medicines in Ghana. It is in this vein that, there is a need to understand the potential influence of packaging design and branding in the distribution of medicinal plant products in the OTC pharmaceutical market in the country.

1.2.1 Health Care System in Ghana

Since independence, Ghana has made remarkable gains in health care delivery through improvements in science, technology and medicine. Nations exist to promote the collective well-being and the socio-economic development of their citizens. Among the socio-economic development priorities of most countries is the health of the populace (Salisu & Prinz, 2009).

One of the strategic directions of Ghana`s developmental efforts is to improve human capital by making health care the pivot around which productivity and economic growth revolve (MOH, 2007). Moreover, the 1992 Constitution of Ghana contains the Directive Principles of State Policy which enjoins the state to guarantee the basic human rights of the citizenry which include, among other things, the right to good health care for all in the country.

Health has been one of the topical issues in the Millennium Development Goals (MDGs) which Ghana has acceded to and has shaped the dynamics of the national health policy. Resources were mobilized, and huge investments were made to scale up activities to achieve this and other goals by the end of 2015 (MOH, 2007). The primary objective of the national health care system is to enhance equity and access to essential and basic health care services (UNDP, 2007).

Health care in Ghana has been a plural medical system where allopathic health care operates side-by-side with traditional medical care. Orthodox health care is the official medical model which has well-developed structures as well as quality human resource base (Asante & Avornyo, 2013). The emphasis of conventional health care is on curative treatment, preventive activities (e.g. antenatal care, family planning) and rehabilitation services. In contrast, the traditional health care system focuses on holistic approach to health which ensures a healthy balance between mental, physical and social factors, and emphasises the entire patient`s health rather than the sickness (UNDP, 2007).

Traditional health care has been dominated by private entrepreneurs and practitioners dotted across the country (Asante & Avornyo, 2013). The main components of traditional medical care in Ghana are traditional medicine and CAM. In the Ghanaian context, alternative medicines are practices and therapies which are not part of the allopathic and traditional health care system. These practices are magico-religious and most often the combination of the natural defensive mechanisms of the body are used as a means of treatment. Alternative medicine is new to the health care system in Ghana and includes homeopathy, chiropractic, hydrotherapy, acupuncture, naturopathy, radionics and reflexology which are mostly practiced in cities like Kumasi, Accra, Tema and Takoradi (Bodeker, Ong, Grundy, Burford, & Shein, 2005; UNDP, 2007).

Traditional medical practitioners are categorized into three, namely: traditional birth attendants (TBAs), psychic and traditional healing operators, and herbalists; while a few others specialize in circumcision and bone setting. The number of registered traditional medicine providers and alternative medical practitioners in the country was estimated to be around 50 000 providing different kinds of curative and preventive treatments to ailments such as malaria, infertility, hernia, abdominal pains, and asthma. About 70 percent of this number was found in the rural communities in the country (UNDP, 2007). It has also been reported that roughly 70% of the population use traditional health services while 30 percent depend on orthodox medical care (*ibid*).

1.2.2 Health Infrastructure

Health infrastructure relates to the facilities and equipment used for the delivery of health services, including those that exist in both public and private sectors. The public health services are delivered through a network of hospitals, clinics, health and maternity homes. Most of the health care services are offered by the state and are managed by Ghana Health Services (GHS) and the Ministry of Health (MOH). The health care system encompasses five levels of providers in order of increasing scope. The first level is the health posts which offer primary health care services to rural communities, followed by health centres and clinics, district, regional and tertiary hospitals. These are organized in three different levels: primary, secondary and tertiary. Administratively, the national health care system is categorized into community, sub-district, and district, regional and national levels. The community and sub-district levels provide basic medical care, while secondary health care is offered at the district and regional levels. The tertiary health care services are delivered in four teaching hospitals in the country. Two of them are found in Accra and the others are located in Kumasi and Tamale (UNDP, 2007). Some of the clinics and hospitals are owned and run by faith-based organizations. It is reported that the country has approximately 200 hospitals, while not-for-profit private clinics also operate side by side with them providing about two percent of the health care services in the country (Adrinkra, 2016).

It has been highlighted that accessibility and availability of health care services impact positively on the socio-economic factors that define a country's economic and socio-political growth (Baidoo, 2009). And yet, it is estimated that about 30% of the global population do not have daily access to essential modern pharmaceuticals and in some remote parts of Asia, Latin

America and Africa as much as 50 percent of the population face acute shortages of them (Bodeker *et al.*, 2005; WHO, 2003). Ampofo, Ando, Tetteh, and Bello (2012) are of the view that modern medicine is more successful in the advanced countries than in the developing regions like Africa. The authors further argue that the high cost of pharmaceutical medicines coupled with poor accessibility and congestion in hospitals, clinics and medical facilities account for this. Similarly, access to health care facilities in Ghana is not evenly distributed, with remote and rural communities experiencing shortages of basic health care facilities (clinics, hospitals, etc.) and personnel (medical doctors, nurses, etc.) (Van de Boom *et al.*, 2004 cited by Salisu & Prinz, 2009). It is estimated that only about 35 percent of the population have access to allopathic health services, whilst the remaining 65 percent use traditional medicine (MOH, 2007).

Despite more Ghanaians relying on traditional medical services, the focus has been on allopathic services rather than the development of traditional medicine (*ibid*). While the orthodox health care gets financial assistance from the government because of the soaring prices of medical services, the traditional health system receives little or no support from the state (Asante & Avornyo, 2013). Meanwhile, a large proportion of the population are unable to access basic health care services largely due to shortage of the health care personnel and the high price of health services.

It has also been reported that the ratio of orthodox medical doctor to the population in Ghana was around 1: 20 000 in 2000 (Bodeker *et al.*, 2005). Clearly, the low proportion of orthodox medical doctors to the population has effect on access to health care which ultimately affects the quality, efficiency and the speed of the health care delivery to the people in the country. In contrast, the proportion of traditional medical practitioner to the population is 1:400 (Essegbey *et al.*, 2014). It has also been reported that there are roughly 224 people for every traditional herbal practitioner in Kwahu District compared to about 21 000 people per medical doctor (Okanlawon, Akowuai, Siakwa, & Druye, 2011; Rukangira, 2001). In addition, it has been confirmed that there is a traditional health care practitioner who is able to provide health care in almost every community in the country (Essegbey *et al.*, 2014).

Furthermore, geographical access to health care services in the country has been hindered by inadequate financing, sub-optimal spatial distribution of health facilities, hard-to-reach communities and broad socio-cultural barriers such as gender. This has forced many rural

residents to walk long distances to access health care (*ibid*). Past research indicates that most people in Ghana live further than 16 kilometres away from a health care facility, while about half of the population cannot consult a doctor within five kilometres which corresponds to an hour walk distance. Moreover, nearly one-quarter of the population reside more than 15 kilometres from the facility where the doctor can be consulted (van de Boom *et al.*, 2004 cited by Salisu & Prinz, 2009). Coupled with this, the provision of excellent health care has been hindered by poor ethical standards, inadequate health care facilities, shortage of and uneven distribution of health care personnel, and organizational and managerial bottlenecks (MOH, 2007).

The mode of payment for health care services, known as the “cash and carry” where payment was made on the spot by patients also widened the gap in the access of health care services between the rural poor and the rich. Even though exemptions were made to this policy, it had a limited success in mitigating the financial burden of the vulnerable and the poor to access health care. Consequently, the Government established the National Health Insurance Scheme (NHIS) in 2005 as a social protection policy for enhancing financial access to secure excellent basic health services by the residents. The scheme had total active subscribers of 11.3 million as at the end of 2016 (NHIA, 2016). This indicates that the number of people covered by the scheme is relatively low to eliminate the problem of affordability which the poor and vulnerable were exposed to under the “cash and carry” system.

1.2.3 State of Traditional Herbal Medicine in Ghana

Medicines are essential to the health care delivery in any country, and an inadequate supply of drugs can make the health care system less effective and attractive. Pharmaceuticals are critical to the management and prevention of diseases, and to the overall quality of human health. It is estimated that medicines constitute nearly 60 to 80 percent of the cost of health care in Ghana (MOH, 2004). According to Harper and Gyansa-Lutterodt (2007) approximately 70 percent of conventional drugs consumed in Ghana are imported whilst 30 percent are produced by the local manufacturers.

However, more than half of the population in Ghana turn to medicinal plant preparations to address their basic medical care (UNDP, 2007). Plant medicine is not only near-at-hand and relatively cheaper but also many Ghanaians have confidence in it. Coupled with this, the nation

has a rich biodiversity and a culture of plant medicine in different forms, as well as wide variety of medicinal plants (Ampofo *et al.*, 2012).

Identifying the potential impact of plant medicines on the health care delivery, successive governments have embarked on programmes to consolidate it into a national health care system. In 1961, the Ghana Psychic and Traditional Healers Association (GPTHA) was established to uphold, promote and protect the traditional health care in the country (Asare, 2005). This was followed by the setting up in 1975 of a national research institute, known as, the Centre for Scientific Research into Plant Medicine (CSRPM), which is currently the Centre for Plant Medicine Research (CPMR), to carry out and promote research into herbal medicine used by traditional health care providers.

Furthermore, the Traditional and Alternative Medicine Directorate was established in 1991 as one of the seven directorates in the Ministry of Health, followed by Food and Drugs Authority (FDA) in 1992. The regulation of herbal medicine began when Food and Drugs Law, 1992, (P.N.D.C.L, 305B), which also regulates modern medicines was promulgated in 1992. The Directorate was set up to bring all traditional medicine practitioners together as a single national entity. Moreover, the Ghana Federation of Traditional Medicine Practitioners (GHAFTRAM) was established in 1999, which comprises all the various traditional health care associations. This is to facilitate the capacity building and sharing of information among traditional medical practitioners.

In the year 2000, the government passed the Traditional Medicine Practice Act, 2000 (Act, 575) for the setting up of the Traditional Medicine Practice Council (TMPC). The Council was established in 2010, and is tasked to promote, control and regulate the practice of traditional health care. These are carried out through registration, training and licensing as well as determining and enforcing the appropriate code of ethics and standard of practice of traditional medicines. These functions are performed together with the recognized body of traditional health care providers and the Ministry of Health (MOH, 2005).

The Traditional Medicine Practice Council (TMPC) collaborates with the Food and Drugs Authority (FDA) to regulate the manufacturing, packaging and/or labelling, advertisement, preparation, sale and registration of all scientifically approved medicinal herbal products for commercial purposes. However, the Ministry of Health (MOH), through the Traditional and Alternative Medicine Directorate has the responsibility to develop policy guidelines to

facilitate growth and development within the traditional herbal medicine industry. The enactment of these laws suggests that traditional herbal medicines have been integrated into the national policy and legislation.

Other allied research institutions, such as, the College of Health Sciences at the University of Ghana and the Noguchi Memorial Institute for Medical Research have been offering assistance in clinical trials of plant medicinal products. To further enhance the study and practice of plant medicine in Ghana, the School of Pharmaceutical Sciences in the Kwame Nkrumah University of Science and Technology (KNUST) in Kumasi has mounted a programme in traditional medicine practice. Furthermore, the School of Pharmaceutical Sciences in the KNUST, Kumasi and the College of Health Sciences in the University of Ghana have undertaken numerous studies to promote the effectiveness, safety and quality of herbal medicines to modernize the industry (Asante & Avornyo, 2013).

In 2012, herbal clinics were introduced into the national health care system nationwide by the Ministry of Health and some government hospitals have herbal medicine units across the entire country (Asare, 2015). More importantly, some herbal medicines have been added to the Essential Drug List by the Ministry of Health, which is an important move to use state procurement as a means to expand the market size for plant medicine (Essegbey *et al.*, 2014; Kraemer & Wunsch-Vincent, 2016).

1.2.4 Packaging in Ghana

The Ghanaian economy has seen massive development of late. This is mainly due to the liberalization of the economy over the past decades by successive governments. This has led to intense competition in the domestic market, specifically, goods imported from India, China and Malaysia. As a result, customers are now demanding quality packaged customer goods due to their exposure to well-packaged imported products. This development has led to a high demand for packaging materials (Obeese, 2010).

However, packaging firms sprang up during the late 1950s after the country had gained independence and started massive industrialization programme to produce import substitution products. The packaging firms built during this period consisted of large corrugated box factory and several micro paper and plastic bag firms. Hence, the bulk of packaging materials were

imported, and this negatively affected the country's industrialization drive (Quashiega, 2009 cited by Obeese, 2010).

The advent of the trade liberalization and economic reform programme in 1990s also resulted in setting up of many small and medium paper and plastic firms in Ghana. More local converters operating as small-scale firms relied on imported raw materials, rudimentary technologies and machinery for production. Most of the small-scale enterprises in Ghana depended on the domestic converters to meet their packaging needs. However, local converters were not able to meet the high demand for quality packages needed by several small-scale firms in the country. Consequently, when local supplies were inadequate, post-consumer packages, such as, corrugated boxes, sacks, plastic bags, jars and glass bottles were used as packaging products. In addition, leaves, wicker baskets, newsprints, wooden crates and jute bags were often used as packaging materials in Ghana (*ibid*). For example, most of the traditional cornmeal consumed in the southern Ghana is still wrapped with leaves.

However, large scale manufacturing firms and exporters usually relied on imported packaging materials to make their product appearance look attractive and comparable to international standards (Obeese, 2010). The author further stated that, apart from wood and to some extent cotton fabrics, all raw materials for packaging consumables were imported. It has also been affirmed that designing the appearance of a product substantially increases the expenditure of firms which may ultimately affect their profit margins. Consequently, a large number of domestic firms employ low-priced and low-quality packaging materials. Though, customers were ever-demanding quality packages that were relatively cheap, the packaging industry were not well-developed to satisfy these demands (Essuman, 1990).

However, there was remarkable improvement in the packaging industry when the Institute of Packaging Ghana (IPG) and the Advertisers Association of Ghana (AAG) was set up. Nevertheless, majority of Made-in Ghana products in the market were not packaged at all and even the few packaged ones had not achieved the desired impact on the market (Obeese, 2010). In many cases, the package did not adequately safeguard the contents and the product information was either inadequate or faded. Almost, all food products packaged by domestic vendors and processors were not properly labelled. For example, there was no indication of the composition of the product, instructions to use and appropriate storage conditions (Essuman, 1990), while most traditional herbal medicines were not an exception.

In addition, the Director of CPMR, Professor Dominic Edoh stated that, “most local herbal medicines fail to meet international standards because of poor packaging and lack of scientific data”. The Director further added that, “although most of the orthodox medicines are of quality standards, lack of effective packaging continues to affect local companies. “We must repackage our products if the country is really in serious development” (Daily Graphic, March 8, 2014). Furthermore, a past study indicates that doses of crushed, squeezed and pounded herbal medicines were measured in cups, spoons, glasses, pinches and lids depending upon the age of the patient, physical status, severity of the disease and the experience of the individual healer in the Bongo District in Ghana (Aniah, 2015). This might have made most Made-in-Ghana products less competitive in both domestic and international markets.

Despite these unfavourable developments, most traditional medicine practitioners have improved their practices by adopting innovations ranging from products, packaging, production processes and health care delivery. A wide variety of herbal drugs have been produced including capsules, tablets, creams in tubes, pills and liquids packaged in bottles to prolong the useful life of the product using quality packaging materials and labelling (Kraemer & Wunsch-Vincent, 2016). The authors argued that it is not uncommon to find stocks of herbal medicines on the shelves of orthodox pharmacies which an allopathic pharmacist may recommend for use. Such products are manufactured in conformity with the quality standards of allopathic drugs and drug regulations with complete labels. While, these indicate positive development in the plant medicine industry in Ghana, there are quite a number of practitioners who are not ready to embrace these innovations to enhance their practices.

1.3 Statement of the Problem

In recent decades, there has been an increasing demand for herbal drugs to satisfy the health care needs in both the developing and developed worlds. It has become important for medicinal herbal products to be distinctively packaged and branded to achieve an edge over competition to gain access to both domestic and foreign markets (Chaudhary, 2011). In Ghana, many locally-manufactured medicinal herbal products sold in the local markets are poorly packaged and branded (Business & Finance, 2011; Kumah *et al.*, 2015; Edoh, 2014). It has been suggested that, unattractive packaging and ineffective branding is one of the major reasons for poor performance of products in the market (Kumah *et al.*, 2015; Business & Finance, 2011).

It appears that herbal medicines produced in most advanced countries have been more attractively packaged and branded than their counterparts in the less developed economies. It has also been reported that about 70 percent of well-packaged products on the shelves of Ghanaian shops were imported (Business & Finance, 2011). Lack of effective packaging and branding has therefore affected the competitiveness of a large proportion of Made-in-Ghana herbal medicinal products in both local and international markets (*ibid*).

As a marketing tool, innovative packaging design is regarded as an important brand-building tool for creating strong brands (Keller, 1993; 2013). It has been highlighted that powerful brands have greater name awareness, perceptions of high quality, a positive image, greater loyalty and strong channel relationships (Kotler, Armstrong, Saunders, & Wong, 2002), which overall contribute to higher profits (Keller, 2013). Furthermore, it has been established that customers do not buy products, but brands, (Dickov, 2012); therefore, building strong brands provides an effective means to market and sell products (Ladha, 2007).

Although, serious efforts have been made to increase and sustain sales of most Made-in-Ghana herbal medicines in the local market, the patronage is low. Ultimately, low demand and lack of equity of many herbal medicinal brands can be attributed to poor packaging design. In essence, many herbal medicine practitioners, perhaps, have not integrated packaging design in their brand-building strategies to create strong brands which is one of the sure ways to secure sustainable competitive strength to enhance and maintain market share. It is based upon the considerations of the influence of packaging and brand equity on the distribution of herbal medicines in the OTC market that the problem statement in this research is developed. The problem in this study is as follows:

The introduction of packaging in the strategic brand practices may result in improved performance of brands of herbal medicines sold at over-the counter drug market in Kumasi.

Kumasi Metropolis is the second largest commercial city and consequently, the second largest commercial centre for plant medicines in the Ghana. It also consists of people with different levels of education, income and cultural background (KMA, 2014).

1.4 Motivation of the Study

In the last few years, there has been renewed interest in the demand for herbal medicines to meet health care needs in both the developing and developed world. This has engaged the attention of researchers and practitioners in the plant medicine industry. In view of this, several studies have been undertaken to investigate the significance, efficacy, quality and safety of plant medicines on health care delivery (Eisenberg, Kessler, Foster, Norlock, Calkins, & Delbanco, 1993; WHO, 1998; Calixto, 2000; Kamboj, 2000; WHO, 2002b; 2003; 2011), but there is a limited volume of research on strategies for marketing herbal medicines. In addition, the importance of packaging on customer behaviour in the fast-moving consumer goods (FMCGs) market is well-documented in marketing theory (Deliya & Parmar, 2012; Silayoi & Speece, 2004; 2007; Rundh, 2005; Rettie & Brewer, 2000). However, there is a relative scarcity of empirical studies on pharmaceutical packaging and its growing importance, particularly in the OTC drug market (Roulette & Droulers, 2005; Kauppinen-Raisanen, 2010; Kauppinen Raisanen, Owusu, & Bamfo, 2012).

Also, a review of marketing literature reveals that many researchers have investigated the significance of brand equity in the FMCG market in the past few years (Yoo, Donthu, & Lee, 2000; Pappu, Quester, & Cooksey, 2005; Gil, Andres, & Martinez, 2007; Buil, Martinez, & de Chernatony, 2013; Asif, Abbas, Kashif, Hussain, & Hussain, 2015), but little research has been done on the traditional medicine market.

Meanwhile, the limited studies on the significance of brand equity of pharmaceuticals were undertaken in the orthodox drug market (e.g. Schuiling & Moss, 2004; Panchal, Khan, & Ramesh, 2012; Sanyal & Datta, 2011). Though numerous studies have examined the importance of packaging on buyer-purchasing behaviour (Deliya & Parmar, 2012; Silayoi & Speece, 2004; 2007; Rundh, 2005; Rettie & Brewer, 2000), very little attention has been devoted to the significance of packaging, specifically to investigate their potential impact on brand equity (Pieterse, 2013; Keller & Lehmann, 2004). A few studies examining the contributions of packaging to brand equity were also undertaken in the traditional consumer goods industry (Pieterse, 2013; Brodersen & Manolova, 2008). There are, however, little or no similar studies in the consumer health market, particularly in the plant medicine market.

Marketing has been identified as a critical factor to the success or failure of plant medicine industry (De Silva, 1997). Effective packaging design and branding have also been recognized

as important marketing elements that can generate sustainable competitive advantage (Keller, 2013; Aaker, 1992) to ensure growth and survival of a firm. The purpose of this study is to examine the influence of packaging and brand equity on herbal medicines sold at over-the-counter in Kumasi Metropolis. Consequently, this study will contribute to bridge the existing gap on the key sources of brand equity, significance of packaging and brand equity in the OTC pharmaceutical marketing literature. The study will also provide information to traditional medicine practitioners on the key sources of brand equity for building and managing brand equity and the strategic importance of packaging to brand equity in the OTC market. This will contribute to enrich the strategic packaging and branding decisions of traditional medicine practitioners in the industry.

1.5 Purpose of the Research

The purpose of the study is to examine the influence of packaging and brand equity of herbal medicine sold at the OTC in Kumasi Metropolis, Ghana.

1.5.1 Specific Objectives

The following specific objectives are formulated to address the purpose of the study:

- ❖ To examine customers` perceptions of the packaging of herbal medicine in the OTC market in Kumasi
- ❖ To examine the brand equity of herbal medicines in the OTC drug market in Kumasi.
- ❖ To examine the influence of packaging on brand awareness in the OTC drug market in Kumasi.
- ❖ To examine the influence of packaging on brand associations in the OTC drug market in Kumasi.
- ❖ To examine the influence of packaging on perceived quality in the OTC drug market in Kumasi.
- ❖ To examine the influence of packaging on brand loyalty in the OTC drug market in Kumasi.

1.5.2 Research Questions

Based on the research objectives, the research questions that guided the study were:

- ❖ What is the customers' perceptions of packaging of herbal drugs in the OTC market in Kumasi?
- ❖ What influence does a brand of herbal medicine have on overall brand equity in the OTC drug market in Kumasi?
- ❖ To what extent does packaging influence brand awareness in the OTC pharmaceutical market in Kumasi?
- ❖ How does packaging influence brand associations in the OTC medicine market in Kumasi?
- ❖ To what extent does packaging influence perceived quality in the OTC drug market in Kumasi?
- ❖ How does packaging influence brand loyalty in the OTC pharmaceutical market in Kumasi?

1.5.3 Study Conceptual Model and Research Hypotheses

In accordance with the existing literature, the following conceptual framework was put forward to assist in formulating the research hypotheses and their testing to better explain the relationship between the constructs in the research as illustrated in Figure 1.1.

Based on the conceptual framework exhibited in Figure I.1 below, the hypotheses that guided the study were as follows;

H1a: Packaging positively and significantly influence brand awareness

H2a: Packaging positively and significantly influence brand association

H3a: Packaging positively and significantly influence perceived quality

H4a: Packaging positively and significantly influence brand loyalty

H1b: Brand awareness positively and significantly influence overall brand equity

H2b: Brand association positively and significantly influence overall brand equity

H3b: Perceived quality positively and significantly influence overall brand equity

H4b: Brand loyalty positively and significantly influence overall brand equity

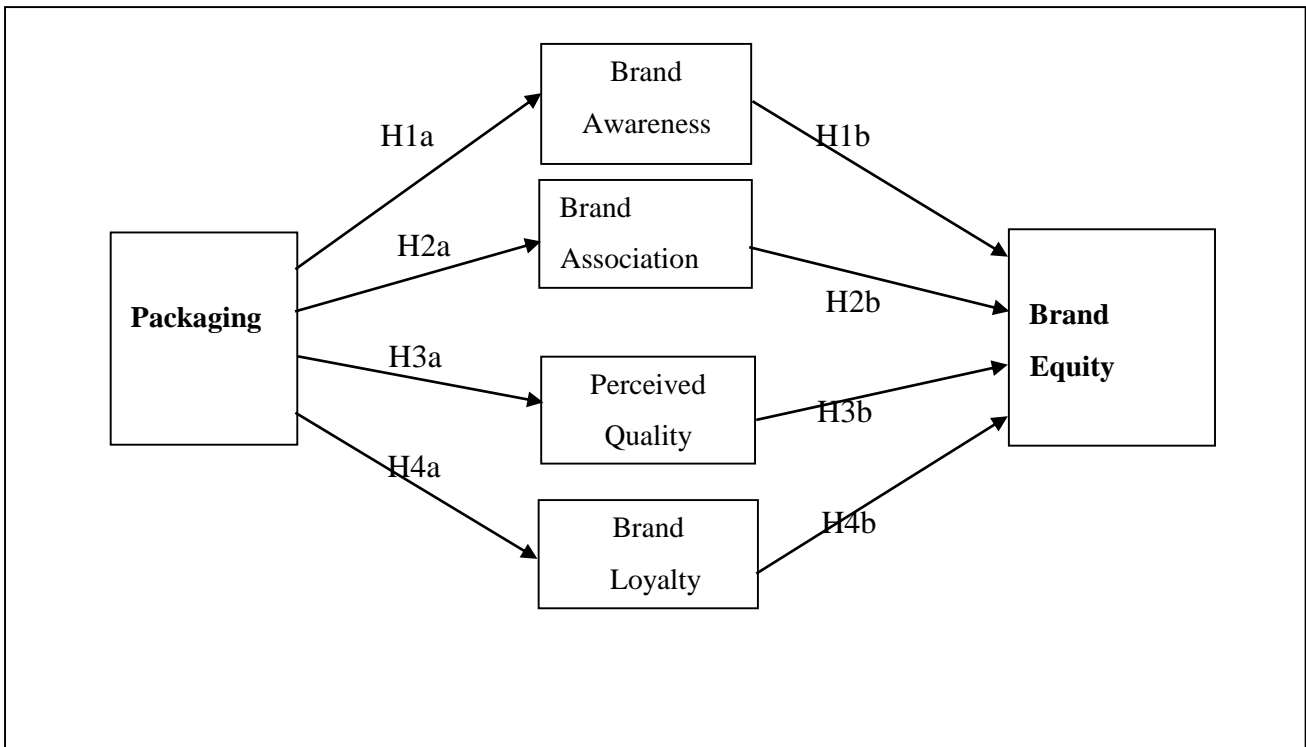


Figure 1. 1: Proposed Conceptual Model of the Study

Source: Developed from Extant Literature

Full details of the proposed conceptual model and the hypotheses are discussed in Chapter Three of this research.

1.6 Significance of the Research

The current research is of immense importance to academia, the manufacturers of herbal medicines and the policy-makers in the drug industry as a whole.

Given the relative scarcity of studies on the importance of packaging in the OTC drug market (Kauppinen-Raisanen, 2010; Kauppinen-Raisanen *et al.*, 2012; Roulette & Droulers, 2005), the results of the current research did not only exhibit the attributes of packaging but also the customer perceptions of packaging of medicinal herbal products. This would guide traditional herbal medicine practitioners in their strategic packaging decisions in the OTC health market. The study also highlighted the role of packaging in the OTC pharmaceutical market which has advanced the current frontiers of knowledge on the significance of packaging in the OTC pharmaceutical market in Ghana.

Moreover, Keller and Lehmann (2006) emphasized that, apart from the brand name (as one of the brand elements) which has been well-studied, little is known about the importance of the other cues in the brand theory. The findings of the current study brought to light the key role of packaging in supporting the overall value of a brand of medicinal plant products in the OTC health market. Consequently, this research could guide practitioners in the traditional health industry in their packaging decisions to design quality and distinctive packaging to enhance the value of brands in the OTC drug market. This would enhance their competitiveness in the OTC pharmaceutical industry.

Coupled with this, this study has added to the previous studies and extant stock of literature on branding and packaging as the study brought to the fore the strategic importance of packaging to brand loyalty, brand awareness, perceived quality and brand associations, and ultimately, the overall value of non-prescription herbal medicines.

Blackett and Robins (2001a) emphasized that the concept of branding in the drug industry is in its formative years compared with the extent to which the pharmaceutical marketing as whole has developed. Schuiling and Moss (2004) also supported the position of Blackett and Robins (2001a) and pointed out that the concept of branding and its practices are not well-documented in the pharmaceutical market compared to FMCGs market. The authors further noted that “branding within the industry is up to ten years behind that of fast-moving consumer goods (FMCGs) industry.” This study has also demonstrated that brand awareness, brand loyalty and brand association are brand assets that drive value in the OTC health care market. Furthermore, the research has established that brand loyalty is the most important value-creating asset in the OTC pharmaceutical market. In this regard, the current research has essentially contributed to the expansion of the current frontier of earlier studies and brand marketing literature by highlighting the major sources of brand equity of herbal medicines. The results of the study are also of immense importance to herbal medicine practitioners as the study could equip them with practical knowledge on and insight into the dimensions of brand equity that are critical for developing and managing the value of brands in the OTC health care market.

This study has highlighted the attributes of effective packaging design as well as customer perceptions of the packaging of herbal medicines in the OTC market. Consequently, the research is of strategic importance to the FDA, Ghana Standards Board, Ministry of Health, and other policy makers in the policy formulation of the packaging and /labelling design of

herbal medicine, which may not only promote safety and efficacy but also improve the commercial value of herbal drugs in Ghana and beyond.

Additionally, the current research is one of the few studies that has examined the empirical significance of packaging and brand equity, particularly in the OTC pharmaceutical market. As a result, the overall model that emerged from this research would provide useful information to academia for future research, especially researchers who are interested in related or similar studies on packaging and branding in the customer health industry.

1.7 Overview of Research Methodology

Here, the focus is to present the summary of the research methodology employed to achieve the objectives of the research. A quantitative research method was employed to test the statistical significance of the proposed hypotheses in the research. For this purpose, a cross sectional survey research design was employed.

Furthermore, through a systematic sampling strategy, a sample of 348 customers who buy herbal medicines from the OTC drug market in Kumasi Metropolis participated in the study. A stratified sampling was employed to pick a sample of 71 herbal shops to gather data from the respondents in Kumasi metropolis.

Survey questionnaires were employed to collect data in the current research due to the limited time available to the respondents who were shopping, and the information was obtained by face-to-face distributing the questionnaires to the participants at the 71 herbal shops in the metropolis.

The first part of the questionnaire captured the demographic variables of the research participants. The second section of the questionnaire was related to the views of the respondents on how elements of brand equity influence overall value of the brand. The second part of the questionnaire dealt with the perceptions of the respondents on the packaging of medicinal herbal products, while the last section covered the impact of packaging on overall brand equity of herbal medicines in the OTC medicine market.

In order to ensure that the test responses achieved their intended purposes in a consistent manner, Cronbach alpha, composite reliability, and exploratory and confirmatory factor analyses were undertaken to determine data validity and reliability.

Descriptive statistics were used to capture the demographics of the respondents as well as the participants' perceptions of the packaging of herbal medicines. Moreover, a structural equation model was employed to determine the significant relationship that existed between packaging and customer perceptions of brand equity. Likewise, a structural equation model was employed to evaluate the significant relationships that existed between CBBE and its dimensions. All the hypotheses formulated in the study were tested by using standardized coefficient and critical ratio. Data entry and analysis were done by using IBM SPSS Amos 22.

1.8 De-limitation of the Study

This section presents the scope of the thesis, which covers product selection, and the geographical and theoretical boundaries of the research.

1.8.1 Product Selection

The research was fundamentally focused on the material part of herbal medicines rather than the spiritual aspects. In addition, the study was concerned with medicinal herbal products which had undergone scientific testing and had been approved by the FDA and sold in registered herbal shops by the TMPC in Kumasi. The aspects of herbal medicine that dealt with fetish practices were not part of this research. Furthermore, the study did not cover raw or processed medicinal plant materials but rather medicinal herbal products which were fully packaged and sold at OTC pharmaceutical markets. The research was also limited to only plant medicines produced locally by manufacturers in Ghana and therefore medicinal herbal products foreign to the Ghanaian culture such as Alternative Medicines (AM) and/or Complementary and Alternative Medicines (CAM) were not included in this research.

1.8.2 Theoretical and Geographical Boundary

Geographically, the study was limited to Kumasi Metropolis. Among the pharmaceutical retail outlets in Kumasi, only the herbal shops registered by the TMPC were attended to in the study.

Moreover, Made-in-Ghana herbal medicines are retailed at both online and retail stores in Ghana but this study was limited to only in-store retailing in Kumasi Metropolis in Ghana.

Theoretically, the research dealt only with the concept of packaging, components, and the role of packaging in the OTC market as well as its importance to building strong brands with positive equity. In contrast, issues relating to packaging material sciences where chemical and/or biological properties of each packaging materials were tested with sampled products and specifying their optimum barrier properties with regard to their shelf-life were not included in the study. Research relating to packaging technology and machinery was also outside the ambit of this research.

With respect to the levels of packaging, tertiary package was not given much attention because the primary focus of the research was on primary and secondary packaging of herbal medicines. The concept of brand equity was critically examined under customer perspectives since the study sought to identify customer perceptions of brand equity of herbal medicines in the OTC market. In this case, financial and other hybrid approaches to the study of brand equity were beyond the limit of the research.

1.9 Structure of the Study

The research is organized in seven chapters as presented below.

Chapter One provides the general introduction to the research. This chapter sets out the introductory part of the research which entails the background information, the problem under investigation, research questions and objectives, delimitations and limitations.

Chapter Two focuses on the literature review part of the study. This relates to the review of relevant literature, and explains the concepts of branding, brand equity and its perspectives, and packaging and its components as well as its functions in the OTC drug market. It also presents relevant literature on OTC medications, herbal medicines and the challenges facing the herbal medicine industry. An in-depth literature review provided a better understanding and insight into the relevant existing body of knowledge and the emerged trends in the literature. This offered a firm theoretical basis on which the research was built, whilst assisting in developing and refining the research questions and the objectives.

Chapter Three covers the conceptual framework. The chapter presents the concepts and constructs to be studied and their theoretical relationships. Here, the relationship between packaging and brand equity constructs are discussed to offer a model that illustrates the impact of packaging on the overall value of the brand. The chapter also draws on the reviewed literature presented in the second chapter in order to obtain a conceptual model to provide focus to the study. The conceptual model also assisted in formulating research hypotheses for the realization of the research objectives.

Chapter Four presents the research methodology for conducting the research which entails procedures and techniques of gathering and analysing the data. Moreover, the research philosophy, design and approach is discussed, followed by sampling and sampling techniques, the study site and the data source.

Chapter Five provides the findings of the research. This is done by analyzing the data gathered from the respondents through various statistical measures and presented in the form of tables and figures. The purpose is to extract the data that are linked to the research questions and the objectives for a meaningful interpretation.

Chapter Six discusses the findings, which entails comparing the empirical results with other pertinent previous studies and literature in relation to the research objectives to provide meaningful explanation of the results.

Chapter Seven deals with the summary, conclusion as well as recommendations of the research. The chapter brings to the fore the summary of the research, draws conclusions on the results, and make recommendations for academic and practical applicability and the possibility for future research.

1.10 Chapter Summary

The present chapter opens with discussions on the background to the current state of the general market landscape of herbal medicines in Ghana which gives rise to the statement of the problem. Following the research problem, objectives and the accompanying research questions were developed. The chapter also presents the overview of the research methodology employed, and indicates the scope within which the research was successfully carried out. The

next chapter focuses on the examination of the relevant literature to provide a theoretical background to the study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The preceding chapter highlighted the introductory part of the research, focusing on background to the research, statement of the problem, research objectives and questions, conceptual model and hypotheses, de-limitations and limitations of the research. The present chapter discusses the relevant literature on packaging and its functions, and brand equity as well as OTC medications and herbal medicines in order to bring clarity and focus to the research problem.

While justifying the existence of the research gap in the literature which this study attempts to address, the review of literature also provides justification for the purpose of the study and the hypotheses. Moreover, the review of the literature on the research problem serves as a yardstick for comparing the results of the study with those of others, as well as to integrating the research findings into the ongoing dialogue in the literature.

2.2 Traditional Medicine

Across the world, the significance of traditional medicine (TM) for health care has gained much attention. Traditional medicine is practiced in almost every part of the world, and in some communities, it is the mainstay of the health care delivery. Traditional medicine has significantly contributed to the reduction of high mortality and morbidity rates as well as disability arising out of diseases like mental disorder, malaria, anaemia, HIV/AIDS, sickle-cell and diabetes (Elujoba, Odeleye, & Ogunyemi, 2005). The authors further noted that TM has enhanced standard of living by creating employment opportunities and has also developed a health care system which covers a wider number of people in the society. It is obvious that an improvement in the quality, efficacy and safety of TM can extend health care to more people than it has up to now.

Traditional medicine is “the sum total of knowledge, skills and practices based on theories, beliefs and experiences indigenous to different cultures, whether explicable or not, used in maintenance of health as well as in prevention, diagnosis, improvement or treatment of physical

and mental illness”. In certain cultures, animal origin or inorganic materials are added (WHO, 1978; WHO, 2005:1).

Alternatively, WHO (2002d:7) defined traditional medicine as “diverse health practices, approaches, knowledge and beliefs incorporating plant, animal and/or mineral-based medicines, spiritual therapies, manual techniques and exercises, applied singularly or in combination to maintain well-being, as well as to treat, diagnose or prevent illness”. Thus, traditional health services include a wide range of practices and therapies which differ greatly from one country to another, and in most cases, they are affected by personal attitudes, history, philosophy and culture (WHO, 2000a).

Among the commonly-used traditional therapies are Chinese medicines, ayurveda, unani, naturopathy, homeopathy, osteopathy and chiropractic. Essentially, the dominant therapeutic techniques employed by the TM practitioners include plant medicine, acupuncture/acupressure, manual therapies, exercises and spiritual therapies (WHO, 2002d), as shown in Table 2.1 below.

Table 2. 1: Commonly Used Therapies and Therapeutic Techniques

	<i>Chinese Medicine</i>	<i>Ayurveda</i>	<i>Unani</i>	<i>Naturopathy</i>	<i>Osteopathy</i>	<i>Homeopathy</i>	<i>Chiropractic</i>
<i>Herbal medicines</i>	●	●	●	●	■	●	
<i>Acupuncture/acupressure</i>	●				■		
<i>Manual therapies</i>	■	●	●	■	●		●
<i>Spiritual therapies</i>	●	●	●	●			
<i>Exercises</i>	■	■		■			
	●	<i>Commonly incorporates this therapy or therapeutic technique</i>					
	■	<i>Sometimes incorporates this therapy/ therapeutic technique</i>					
	■	<i>Incorporates therapeutic touch</i>					

Source: WHO (2000d: 1)

Among these techniques, acupuncture and herbal medicines are widely-used therapies of traditional medicine (TM) and complementary and/ alternative medicine (CAM) (WHO, 2002b). Generally, the method of treatment adopted by TM practitioners are categorized into: medication therapies (plants, mineral-based medicines and/or animal parts), non-medication treatment (mental, manual, spiritual and physical treatment) and a combination of medication and non-medication therapies (UNESCO, 2013). All these practices impact on the general condition of health of a person and may account for broad use of TM.

Broadly, adaptations of these traditional therapies in the developed world are referred to as CAM.

Traditional medicine is also known as “natural medicine,” “non-conventional” or “holistic medicine”. The significant differences among the various practices of traditional medicine arise from the different cultures of the people who practise them. It has been suggested that traditional medicine was an integral part of human culture with greater confidence in it and provided a valuable means of managing culturally-linked diseases and other health problems (WHO, 1978).

While allopathic practitioners concentrate on a scientific approach to orthodox medicine, traditional health care evolved differently. It is much more affected by the historical conditions and culture within which it originally developed (WHO, 2002d). To a large extent, the long period of experience and accumulated wisdom acquired through a prolonged period of practice constitute the substantial skills and knowledge used in traditional medicine.

Some of the traditional therapies have been practised for two thousand years and are still effective for the treatment, diagnosis and prevention of physical, mental and social ailments (Elujoba *et al.*, 2005). For instance, *Artemisia annua*, a Chinese herbal medicine, has been used for nearly two thousand years and is still effective for fighting against resistant malaria (WHO, 2003). However, most of these methods and techniques used for treatment are kept in secrecy.

2.2.1 Traditional Medicine Patronage

In recent years, the popularity of traditional medicine across the globe has been increasing rapidly. It is reported that in many developing countries, 70 to 95 percent of the populace use traditional health services to satisfy their basic health care needs (WHO, 2011). However, it has been highlighted that traditional therapy does not only address the basic health needs of the people in less-developed nations but also provides alternative health care for combating infectious and chronic diseases. For example, World Health Organization (2003) pointed out that close to 80 percent of population in Africa rely on non-conventional medicine, primarily herbal medicine, for basic health care. Moreover, Mander, Ntuli, Diederichs, and Mavundla (2007) highlighted that, approximately 72 percent of the black people in South Africa depend on traditional medical services which represent approximately 26.6 million people living in the country. The authors further stated that traditional remedies in South Africa are however not recognized as inferior to modern medicine but are rather comparable to allopathic medicines and essential for managing different ailments where orthodox health care has failed.

According to Thillaivana and Samraj (2014) the high demand for traditional health care in the developing nations can be attributed to cultural compatibility, affordability, accessibility and availability. For example, World Health Organization (2002b) pointed out that the proportion of the traditional health care practitioner to the population in Uganda was between 1:200 and 1:400. On the other hand, the proportion of the conventional medical health practitioner to the people living in the country was around 1:20 000 or even lower. Furthermore, the distribution of health care personnel was not even, with the large majority located in the urban centres relative to those in rural communities (*ibid*).

Given the relative scarcity of health care institutions and orthodox health care practitioners in Africa, the inclusion of non-conventional health care in the public health services would help to achieve the agenda of health care for all in the continent. World Health Organization (2003) suggested that the provision of safe and effective traditional medicine can increase accessibility to health care around the world. Although, some countries like Republic of Korea, China, Democratic People`s Republic of Korea and Vietnam had combined traditional health services with the national health care system, by 2003 many countries were still in the process of integrating this type of medical services into their national health care system (*ibid*).

For instance, World Health Organization (2002b) reported that non-conventional therapies accounted for approximately 40 percent of the national medical services in China. Similarly, in India, traditional medicine provided medical services for approximately 65 percent of the population (*ibid*). The indigenous health care practices (such as Ayurveda, Unani, Siddha and Tibetan) were officially approved by the government and run parallel to the modern medicine. Srivastava, Lambert, and Vietmeyer (1996) noted that the traditional medical care was run comparably to the modern health care in terms of degree of organization and research. The authors further stated that in 1996 the traditional health care comprised 55 000 licensed pharmacies, 13 770 dispensaries, 7 000 licensed manufacturing firms, 16 990 hospitals, 98 Ayurveda colleges, and 400 000 registered practitioners, in contrast, with 332 000 registered physicians.

It has been argued that, traditional health care practices in Africa are embedded in the culture of the belief system and as a result, it is used by all people with different socio-demographic characteristics (Bodeker *et al.*, 2005). For instance, in South Africa, the profile of end-users of traditional medicine have cut across various age, education, religion and occupational distribution in the country (Mander *et al.*, 2007).

Traditional or alternative medicine does not only satisfy the basic health needs of the people in less-developed world but also in developed countries where allopathic medicines dominate the national health care system (WHO, 2000a). An empirical study shows that about 70 to 80 percent of people in advanced countries have used some form of alternative or complementary medicine to satisfy their basic health care needs (WHO, 2008).

It has been reported that the percentage of people who have used alternative or complementary medicine at one point in their lifetime were 38%, 48%, 42%, 75% and 70% in Belgium, Australia, USA, France and Canada respectively (WHO, 2002b). A study conducted by Eisenberg *et al.* (1993) revealed that one in every three adult persons at the age of 18 years or older in 1990 in United States had used one form of non-conventional medicine. Furthermore, the outcome of the research shows that the estimated number of attendances to practitioners of alternative medical care far exceeded the total visits to modern health service providers nationwide at the same period. Moreover, the study reported that approximately one in every four persons in United States had used alternative medical services in addition to orthodox health care for the same health problem. In addition to this, an empirical research indicates that

roughly 75 percent of the population suffering from HIV/AIDS in San Francisco, South Africa and London had used TM/ CAM (WHO, 2003).

According to WHO (2002b), the widespread and increasing use of TM/CAM in industrialized countries was fuelled by greater anxiety about the side effects of conventional medicines, by a preference for personalised medical services and by the accessibility to health information. Furthermore, prolonging life expectancy is usually accompanied by chronic or debilitating diseases like heart disease, cancer, diabetes and mental disorder. Not only this, complementary or alternative therapies appeared to offer more gentle way of managing such diseases than modern medicines (*ibid*).

The global market for traditional medicine is also growing faster annually. It is estimated that the value of traditional medicine amounted to US\$ 83 billion per annum in 2008, and has been expected to grow exponentially (WHO, 2011). In Malaysia, the estimated market for traditional medicine was around one billion ringgits annually in 1995 (WHO, 1998).

In addition, expenditure on traditional medicine is rising across the globe. It has been estimated that annual expenditures on CAM in Australia, Canada and United Kingdom are US\$80 million, US\$240 million and US\$230 million respectively. Likewise, in Malaysia, a total of US\$500 million was expended on yearly basis on CAM relative to US\$300 million on conventional health services (WHO, 2002b). Not only this, the total plant medicinal products trade was estimated at the value of R26.6 billion per year, whilst raw plant materials accounted for nearly R520 million annually in 2006 market prices in South Africa (Mander *et al.*, 2007). It is also estimated that annual expenditures on traditional therapies in Republic of Korea amounted to US\$4.4 billion in 2004 and rose to US\$7.4 billion in 2009 (WHO, 2012).

2.2.2 Herbal Medicine

Herbal medicine, also known as phyto-therapeutic agents or phyto-medicines, are standardised herbal preparations which are made up of plants for combating health problems (Calixto, 2000: 180). World Health Organization (2005:1) defined herbal medicine as “plant-derived material or preparation with therapeutic or other human benefits, which contains either raw or processed ingredients from one or more plants”. In most cases, it is also made up of inorganic materials as well as animal origin. According to WHO (2002b), herbal medicine encompasses finished

herbal products, herbs, herbal preparations and herbal materials which contain active ingredients of plants. The World Health Organization (1998) also categorized herbal medicines into three groups which include:

- **Processed plant materials:** These are plant materials treated according to traditional procedures to improve safety and efficacy, and to facilitate their clinical use, or to make medicinal preparations.
- **Medicinal herbal products:** These are finished labelled pharmaceutical products in dosage form that contain one or more powdered plant materials, extracts, and purified extracts or partially purified active substances isolated from plant materials.
- **Raw plant materials:** These are also fresh or dry plant materials which are marketed whole or simply cut into pieces.

Medicines considered to be combinations of plant materials and chemically active ingredients, including chemically defined or isolated constituents of plants, are not recognized as herbal medicines (*ibid*).

Long before orthodox medicines came to widespread use across the world, herbal medicines played a vital role in human health care. Herbal medicines have been and continue to be used alongside allopathic drugs around the world in some capacity. Plant medicine is usually used to offer the first-line of treatment and primary health care for people both residing in remote and poorer communities where it is the only available and affordable health service (WHO, 2003). World Health Organization (1998) suggested that the interest in herbal remedies as well as their utilization have been increasing even in areas where modern medicine is available.

The use of plants for health and medicinal purposes dates back to the beginning of human history and much of modern medicines were originated from plant sources (Pal & Shukla, 2003). The World Health Organization (1998) also highlighted that medicinal plants are important ingredients for manufacturing of pharmaceutical medicines. It has been reported that not less than one quarter of conventional drugs are obtained from medicinal plants (WHO, 2011; Sharma, Kumar, Mishra, & Gupta, 2010). Furthermore, it is estimated that between 35

000 and 70 000 plant species have, at least, at one point in time, been utilized in some capacity for medical reasons (WHO, 1998).

Calixto (2000) is of the view that herbal medicines have a wide range of therapeutic use but may not have strong pharmacological action to offer emergency treatment. The author further suggested that herbal medicine exhibits some characteristics which distinguish it from modern medicine. These include: active substances are rarely known; setting up of quality measures; stability and standardization are possible but difficult, problem of getting quality raw materials; suitability for chronic treatments and wide range of therapeutic uses; practical use in folk medicine; and less expensive and a well-controlled double-blind clinical and toxicological studies to prove their efficacy and safety are rare. Zhang (1998) noted that herbal medicines differ from conventional drugs in that herbal medicines are derived from raw plant materials in which a part of the plant may contain several natural constituents and are often used over a longer period of time.

Herbal medicine is one of the traditional medical practices that primarily use medicinal plant preparations for therapy. Many herbal medicines used in traditional health care today have long historical record of usage for thousands of years and are embedded in the belief systems of a particular ethnic group, before the spread of modern medicines. It has been established that prolonged clinical experiences built over several years provide a strong evidence of safety and the effectiveness of herbal medicines (WHO, 1998).

However, the renewed interest and increase in consumption of herbal medicines have raised concerns about the quality, efficacy and safety of these medicinal products. Although, herbal medicines are perceived as natural, they are not always safe. The consumption of some plant medicines has caused adverse drug events (WHO, 2005), while others contain chemicals like carcinogenicity and hyper-toxicity that have long-term negative side effects (WHO, 1998). This phenomenon can be attributed to the wrong choice of plant species; over-dosage; contamination by poisonous substances, and adulteration of herbal products with other, undisclosed medicines by patients; and the misapplication of herbal medicines by either health practitioners or patients, or with other medicines (WHO, 2005).

It has been recommended that, though, herbal medicines have been tested for safety and efficacy by way of continued uneventful historical procedures, scientific studies could offer

extra proof to meet regulatory requirements (WHO, 1998). Calixto (2000) also suggested that plant medicines that are used for treatment, prevention, diagnosis and mitigation of diseases must be registered and regulated as pharmaceutical product with proven safety and efficacy.

Herbal medicine has been widely acknowledged as a critical resource that can be harnessed to become either another source of health care or complement the national health care system set up at all levels of health care delivery. As a result of the strategic importance of herbal medicines in health care delivery worldwide, WHO has been supporting member countries by designing strategies and policies to be followed to bridge the gap created by modern medicine.

2.2.3 Medicinal Herbal Market

Nowadays, public interest in plant therapies is growing tremendously in the less-developed world as well as in advanced nations. It is estimated that herbal medicines have been the key source of basic health care for approximately 75% to 80% of the population in the world, particularly the least developed countries (Kamboj, 2000). For much of the developing world, herbal medicines are accessible, inexpensive, in sync with culture and more convenient relative to conventional drugs (WHO, 1998).

Herbal medicinal products are sold and used in different ways in various regions in the world. Some traditional herbal medicines are frequently distributed as prescription and/or non-prescription drugs, and may be used for self-medication or self-care, home remedies, dietary supplement, health or functional foods, and phyto-protectants (WHO, 2011). In Ghana, plant medicines are sold as non-prescription medicine and as a separate drug segment (WHO, 2005). However, in the United States, plant medicines are sold as dietary supplements in supermarkets and grocery stores (Calixto, 2000).

The author also pointed out that the worldwide increase in demand for herbal medicines is due to:

- preference for natural treatment,
- fear of possible adverse effect of conventional drugs and the perception that herbal therapies are safe, since all over the world millions of people have used herbal treatment for many decades,
- preference for preventive medicine,
- greater interest in alternative medicine due to ageing population,

- tendency towards self- medication,
- high cost of modern medicine,
- improvement in quality, safety and efficacy of herbal medicine, and
- perception that herbal therapies are more effective where orthodox health care has failed.

Herbal medicine is more often than not the only cheaper source of treatment, especially, for the poorest section of the society. In Ghana and Kenya, the cost of treatment of malaria for a course of allopathic anti-malaria drugs amounted to an average out-of-pocket spending of about US\$6 per annum. In contrast, the cost of malaria treatment with herbal medicines was more affordable relative to other forms of health care and could even be paid in kind or with a physical asset (WHO, 2002b). It has also been pointed out that the expenditure on treating malaria at the clinic in Ghana was around US\$1.60 whilst the cost of self-treatment with plant medicine was only US\$0.10 (Ahorlu, 1997 cited by WHO, 2002b). A study also suggests that as much as 58 percent of adults in America who consumed traditional herbal therapies perceived that they were less costly relative to conventional drugs (Johnston, 1997).

Moreover, research conducted by Adjei (2013) in Wassa Amenfi West District in Ghana indicates that herbal medicine is potent for treating conditions like infertility, malaria, sexually transmitted infections (STIs), sexual weakness, piles, waist pains, epilepsy, menstrual pains, chronic skin diseases, hernia, bone fracture, arthritis and boils. Likewise, two in every five Americans (42%) were of the opinion that plant medicines can effectively cure diseases like cancer (Johnston, 1997).

In addition, in Mali, Ghana, Zambia and Nigeria plant medicines were used as primary therapy for more than 60 percent of children suffering from high fever (WHO, 2003). It is estimated that between 30% and 50% of the total consumption of medicine in China was produced from traditional herbal preparations (*ibid*). Indeed, phyto-medicine had been the source of medical care of about 40 percent of the urban population and over 90 percent of rural dwellers in China (Srivastava *et al.*, 1996).

It has also been suggested that 35 percent of outpatients and 22 percent of inpatients of rural people living in China were treated with traditional herbal medicine (WHO, 1998). Similarly,

in South Asia, out of the total population of one billion, 800 million depended on plant medicines for medical care (*ibid*). The demand for plant medicines in industrialised nations to address primary health care needs increased steadily due to their efficacy, safety and largely due to lesser side effects (Kamboj, 2000). The author is also of the view that herbal medicines are also suitable for managing age-related diseases, such as, memory loss, osteoporosis which are more prevalent in most advanced economies.

These factors have accounted for the rise in the price of plant medicines in the global market and have attracted a considerable number of multi-national pharmaceutical companies to commercialise herbal medicines (Calixto, 2000). WHO (2003) pointed out that about 90 percent of people in Germany had used herbal therapies at one time in their lifetime, while 70 percent of the population in Canada had also consumed herbal remedies at least once.

The world market for herbal market was higher than US\$60 billion (WHO, 2003) and was increasing exponentially. It is also estimated that the market for herbal remedies in Europe was about US\$7 billion in 1997 (Calixto, 2000), and between the period of 2003 and 2004 a total value of US\$5 billion was mobilised from the sale of medicinal herbal products in Western Europe (WHO, 2008). Johnston (1997) noted that nearly 60 million Americans over the age of 18 years had used herbs to fight against insomnia, burns, colds, allergies, headaches, depression and rashes. The author further stated that the resultant boom in demand for herbal remedies had about US\$3.24 billion market for traditional health services.

In China, the sale of medicinal plant products amounted to US\$14 billion in 2005, while in Brazil, the total sales revenue was US\$160 million in 2007 (WHO, 2008). Anel, Myen, and Onselen (2012) pointed out that a total amount of US\$7.8 million was realised from the sale of 951 tons of crude medicinal plant products in 2010 in the Ghanaian market. Medicinal plant products have also contributed significantly to China's pharmaceutical market. For instance, medicinal plant products contributed 33.1 percent share in the pharmaceutical market in 1995 (WHO, 1998).

In Germany and France, the sale of herbal medicines in the European market was estimated at around \$6 billion in 1991, while in United States the turnover was approximately \$4 billion (Kamboj, 2000). In Hong Kong, it was estimated that over US\$ 260 million worth of herbal medicines were imported yearly, and more than 900 processed and raw medicinal plant products were distributed in the herbal stores (WHO, 1998). It is also reported that the sale of

herbal medicine known as “Kampo medicine” rose from US\$1.42 billion in 2007 to US\$1.47 billion in 2008 (WHO, 2012). Furthermore, a total of US\$1.12 billion was realized from the sale of CAM in 2008 in Australia (*ibid*).

According to Calixto (2000) herbal medicines were widely used in Germany for circulatory disorders (15%), fatigue and exhaustion (12%), common influenza (38%), headache (25%), stomach ulcer (34%), cold (66%), intestinal and /or digestive disease (25%), nervousness (21%), bronchitis (15%) and skin disease (15%).

Likewise, the plant medicine market in India was about US\$1billion, while the export revenue from plant-based crude medicine was around US\$80 billion (Kamboj, 2000). Moreover, it is recognized that India has a well-documented rich culture and notable practical knowledge in traditional herbal medicine. However, it has been emphasized that the role of less-developed nations in the international trade of medicinal plant products is insignificant due to poor quality and the inability to meet global standards (Sharma *et al.*, 2010).

2.2.4 Challenges of Herbal Medicine Industry

A major challenge facing the plant medicine industry is apparently the limited scientific approach as compared to modern medicine (Essegbey *et al.*, 2014). World Health Organization (2010) suggested some criteria for assessing traditional herbal medicines which comprise scientific proof of quality, efficacy and safety similar to conventional drugs. Pal and Sukla (2003) are of the view that medicinal herbal products are heterogeneous in nature and pose a number of challenges to quality controls and assurance as well as regulatory process. Consequently, this might have led to an absence of acceptable international benchmarks and a suitable scientific approach for measuring the quality, efficacy and safety of plant medicines (Ampofo *et al.*, 2010; Sharma *et al.*, 2010).

It has also been highlighted that some traditional health practitioners recognize historical empirical evidence as the sufficient criterion for a herbal medicine`s efficacy (Ampofo *et al.*, 2010). Essegbey *et al.* (2014) stated that, though it is often argued that traditional medicinal products are not conventional medicine and they must not undergo the stringent and rigorous processes and systems of conventional medicines, the aspect of efficacy and quality of medical product is of paramount importance.

However, it has been emphasized that with the view to undertaking scientific research to evaluate traditional medicines, experiences and knowledge gained through prolonged period of established practices should be considered (WHO, 2000a). For example, in Ghana, the CPMR was set up to facilitate research, the standardization of herbal medicine preparation and safety. And yet, many herbal medicines in circulation in the market had no scientific evidence of efficacy, safety and quality (Pal & Sukla, 2003; WHO, 2010; MOH, 2005). This can be attributed to the relatively high cost of clinical trials, the poor financial status of practitioners and a general lack of human capital and logistics in the research centres (MOH, 2005). An empirical study conducted by Raynor, Dickinson, Knapp, Long, and Nicolson (2015) revealed that about 93% of the plant medicinal products sampled were not licensed for proof of safety, quality and efficacy. Furthermore, the production of most herbal medicine did not meet the Good Manufacturing Practices (GMPs), and also lacked standardization.

De Silva (1997) is also of the view that, developing countries have well-trained personnel in science disciplines like pharmacy, chemistry, agricultural, but the absence of resources in the fields of technology and chemical engineering has impeded the development of a large-scale herbal medicine industry. Although, there is a large market for traditional medicinal products in both domestic and international markets, commercialization of medicinal plant products in Ghana has been impeded by many factors. These include: poor packaging and /or labelling, lack of funding, absence of standardization, poor resource base like personnel, materials, technology, and the absence of industries to support the idea of commercialization (MOH, 2005).

De Silva (1997) suggested that most developing countries were ignorant about the potential social and economic benefits of the industrial utilization of medicinal plant products. Except for use to meet local health care needs, the real potentials of these medicinal plants had not been realized by the government and entrepreneurs. In Ghana, most of the herbal medicine manufacturers operate as micro-and small-scale entrepreneurs producing mainly for domestic consumption (Essegbey *et al.*, 2014).

In addition, De Silva (1997) noted that many countries in the developing world did not have procedures for registration of traditional medicine practitioners and if any, were not stringent requiring the same standards as allopathic medicines. In Ghana, however, all forms of regulations exist to bring sanity to the practice, but it is still marked by many quack

practitioners (hawkers and peddlers). It is often difficult to distinguish between genuine practitioners and the quacks which have caused serious damage to the image of the practice (UNESCO, 2013; MOH, 2005). Previous research revealed that in Ghana, out of 107 sampled traditional medicine practitioners, 33 percent have not been approved by the TMPC or any of the other institutions (Essegbey *et al.*, 2014).

Moreover, the escalating demand of plant-based medicines in both developing and developed countries has been met by the wanton harvesting of wild plants from the forest. Because of this, many plant species have been endangered and some have become extinct (De Silva, 1997). For example, in China, it was estimated that more than 80 percent of 700 000 tons of plant material harvested annually is derived from wild sources. The destruction of forest by wild fire, overgrazing, and rapid urbanization, expansion of industries as well as excessive gathering of wild plants imply that the natural sources of medicinal plant products are being destroyed (Srivastava *et al.*, 1996).

The lack of marketing was also regarded as major factor that inhibited the growth of plant medicine industry and it was a key element for determining the success or collapse of these firms (De Silva, 1997). In Ghana, some of the medicinal plant products are sold in the market, lorry stations, wheel-barrows and tables (Essegbey *et al.*, 2014) which suggest that there is lack of marketing strategies to enhance the sale of the product. Rukangira (2001) recommended that new marketing opportunities need to be researched into as demand grows, and efforts should be made to add value to medicinal plant products through processing, efficient packaging and storage.

Finally, De Silva, (1997) pointed out that simple and old technologies were used by traditional medical practitioners to produce medicines for local use, such as, hot-or-cold water extraction, pounding of dried materials, extraction of juice after crushing. These traditional methods were dependent on the state of technology that existed at that time. In the author`s view, these methods need to be modified and improved by using modern technologies to make them more efficient, stable and reproducible, controlled and in dosage form that is portable. The author further enumerated some factors that negatively affected the competitiveness of herbal medicines in the world market. These include: poor agricultural practices, poor quality control procedures, absence of studies on the development of high-yielding varieties, lack of research

and development on the product and process development, poor propagation techniques, high energy losses during processing, and poor harvesting and post-harvesting treatment practices.

2.3 Over-the-Counter Medications

Medications often form the major cost component of health care expenditure and other health care services. The quantity and quality of drugs that a patient receives during a period of treatment is crucial in the health care delivery system. Obviously, access to relatively cheaper and quality drugs is one of the critical factors that determine the superiority of the health care services. Indeed, a patient's delight in the medication offered to him is a key factor for the utilization of particular medical services and the repeated patronage of the facility (Attridge & Preker, 2005).

In health care delivery, access to medicines is via prescription and/or OTC drug market. Prescription-only medicines relate to drugs that are strictly sold to patients by a licensed pharmacist through the approval of a registered prescriber (MOH, 2004). These drugs are usually sold in pharmacies under the close supervision of a pharmacist.

A distinctive feature of prescription medicines is that customers rarely choose a particular drug for their ailments (Kim & King, 2009). Instead, the physician is the ultimate decision-maker for the selection of prescription medicines. Quraeshi, Lugmani, and Malhotra (1983) emphasized that promotional strategies are usually aimed at inducing the medical practitioner to prescribe the brand name product.

Over-the-counter medicines, also known as non-prescription are medications that are widely recognized as safe by following the instructions for use and are bought without a prescription (MOH, 2004). Alternatively, WHO (2000b) defines OTC medicines as drugs that are produced and dispensed without medical prescription and patients buy them by their own initiative. Non-prescription drugs are usually bought to treat self-recognized symptoms, transitory conditions and chronic diseases or symptoms that require continuous use of medication dispensed by health care practitioner (WHO, 2000c). Slatter (1977) referenced by El-Meniawy (1991) pointed out that an OTC medicine has been characterized by heavy promotion and multiple distribution channels, and the drug scarcely has patent protection. These unique features distinguish non-prescription drugs from prescription medications.

It is also argued that the major reasons for customer choice of non-prescription treatment include: the patient's familiarity with how to treat a particular condition due to previous experience, the view that the ailment is not serious enough to warrant consulting a physician, and the desire to save time and money (Pharmacy Today, 2010; NCPIE, 2002). Customers only turn to health care professionals for medical assistance if the condition fails to respond, persists, or becomes more serious (WHO, 2000c). Consequently, OTC medications have been used for first-line of treatment at the onset of illness, especially where access to health care facilities and cash to pay for health services were limited (Seiter & Gyansa-Lutherodt, 2009).

It has been suggested that effective and safe use of OTC medication requires the customer to assume the responsibility of a physician in treating a patient with prescription drugs. The patient therefore needs access to reliable comprehensive information on the label material, patient information text, past personal experience, advertisement and advice given by the health care practitioner to guarantee safe and effective use of the product (WHO, 2000c). Raynor *et al.* (2011) noted that the key safety information to allow for safe and appropriate use of traditional herbal medicine sold at OTC includes precaution and warnings for use by people with pre-existing ailments, its possible interactions with other products, and adverse effects. This must be supported by how to use the medicine, how the side effects can be monitored, duration of use, and when to seek professional advice (WHO, 1998).

In Ghana, herbal remedies are sold as non-prescriptions in the retail pharmacies, licensed chemist shops, herbal shops and licensed herbal clinics (WHO, 2005). The licensed chemist and herbal medicine sellers are limited by law to dispense only OTC medicine (Pharmacy Act, 1994, Act 489; TMP Act, 2000, Act, 575). The sale of the herbal medicines in OTC pharmaceutical market is not only common in Ghana but also across the world. For example, in Europe, Australia and North America, herbal medicinal products can be obtained at the OTC drug market (Raynor *et al.*, 2011). An empirical research also indicates that out of the 142 member countries of WHO, 97 of them dispensed herbal medicines as OTC medicines, while the rest (50) were selling herbal medicines as prescription medicines (WHO, 2005).

2.3.1 Over-the-Counter Medications and Health Care Delivery

Commercialization of pharmaceuticals outside the public health care system is found in most parts of the world. Over the past few years, OTC drugs have contributed immensely to the

health care delivery system the world over. The sale of non-prescription medications is recognised as the most preferred means of treating majority of common ailments as they are accessible and offer multiple health care options (DeLorme, Hu, Reid, & Ann, 2010). The importance of OTC medications to the overall health care is reflected by the presence of many laws and treatment guidelines, (GFDA, 2013; WHO, 2000c), the high frequency at which the medicine is recommended by health care practitioners, and the increasing use of the products by patients (Pharmacy Today, 2010).

It is widely acknowledged that, in Africa and most developing countries access to medications is hindered by inadequate pharmacists and medical doctors to attend to every patient on the appropriate use of prescription medicines. This is further aggravated by poverty, mass illiteracy and a shortage of health facilities. Consequently, OTC medicines have become a potential option for treatment for most people in the developing world (Afolabi, 2012). Past research reveals that out of 72 percent of care-givers who sought diarrhoea treatment outside home, 59 percent of them relied on OTC medicine sellers for health care (SHOPS Project, 2015). Essentially, OTC drug sellers are recognised as the major health providers of child health care services, especially in rural communities in Ghana.

While, there were only about 1 600 retail pharmacies in Ghana, the number of licensed OTC medicine sellers, excluding herbal medicine sellers, was hovering around 10 000 (Seiter & Gyansa-Lutterodt, 2009) across the entire country. Similarly, there were approximately 54 000 pharmacies in the United States, but the estimated OTC medicine retail outlets exceeded 750 000 (CHPA, 2012).

In Ghana, the estimated retail value of pharmaceutical market was around US\$ 300 million in 2008. However, the total share of OTC drug market was around 30% of overall value of the pharmaceutical market (Seiter & Gyansa-Lutterodt, 2009). The steady growth of the OTC pharmaceutical sector in Ghana was attributed mainly to poor access to prescription drugs, the introduction of the National Health Insurance Scheme in 2005 which covered non-prescription medications, the focus of the domestic industry on the production of OTC products at the expense of essential medicines, as well as heavy advertisement (Harper & Gyansa-Lutterodt, 2007).

Although, industrialized countries have enough health care facilities and personnel, many still rely on OTC medications for the treatment of minor health problems. It has been highlighted

that an increasing number of the population in the United States use OTC medicines for the treatment and prevention of many ailments. Mostly, OTC remedies were used for allergy or sinus problems (45%), cough, cold, influenza or sore throat (52%), pain (78%), skin problems (10%), other stomach problems (35%), minor infections (12%), and heartburn, indigestion constipation, diarrhoea and gas (21%) (NCPIE, 2002).

According to Customer Healthcare Products Association (2012), about 81 percent of adults in United States used OTC medicines as the first-line of treatment for common ailments, whilst nearly seven in every ten parents have offered OTC medicines to their children in the night to treat sudden medical symptoms. In addition, the availability of OTC medicine provided symptomatic relief for an estimated population of 60 million who otherwise would not have sought treatment. An empirical evidence also indicates that OTC medicines were the most popular first-line treatment for children and adults with fever and acute illness in three districts in Kenya (Abuya, Mutemi, Karisa, Ochola, Fegan, & Marsh, 2007).

From the perspective of the customer, OTC remedies provide a wide variety of treatment options, greater availability of drugs, direct and rapid access to drugs, convenience as well as a lower cost of treatment in terms of reduction in the cost of medical consultations, while at the community level, OTC drug treatment can save the limited medical resources from being spent on minor ailments and lower community-funded health programmes (WHO, 2000c). This has considerably reduced the expenditure on national health care (Dajani, Dajani, & Shahwan, 2004). Furthermore, OTC medications can reduce absenteeism from work (WHO, 2000c) and ultimately increase productivity.

According to CHPA (2012), OTC medicines provide affordable treatment options for patients in United States and have also reduced the national budget on health care facilities. Moreover, it is estimated that OTC medications saved the United States about US\$102 billion annually relative to other alternatives, while US\$17 billion and US\$25 billion were saved on the cost of clinical trials and drugs respectively (*ibid*).

The volume of OTC medicines was once estimated to be relatively small, but now they account for the majority of all medications in United States. It is estimated that there are over 100 000 OTC health care products dispensed in the United States, comprising almost 1000 significant active ingredients (NCPIE, 2002). It has been highlighted that roughly eighty therapeutic types

of non-prescription medications were retailed in United States of America in 2010 (DeLorme *et al.*, 2010).

It has been suggested that the drug market is among the most flourishing markets globally with an estimated world sales revenue of about US\$534.8 billion in 2005 (Kim & King, 2009). Meanwhile, the global OTC drug market was valued at 86 billion Euros in 2013, with growth rate of 4.8% in 2014, exceeding the ethical pharmaceutical sub-sector (AESGP, 2015).

Interestingly, the global market for OTC drugs has been expanding rapidly and several factors account for this. First, public interest in self-treatment is increasing (DeLorme *et al.*, 2010) and non-prescription medicines have become the backbone of much of the self-medication of many diseases and their prevention (Brieger, Unwin, Greer, & Meek, 2005). It is also well-acknowledged that OTC medications are more accessible and less expensive means of combating common health problems (DeLorme *et al.*, 2010) which ultimately, supports ever-increasing desire for self-medication.

Secondly, the worldwide transfer of prescription drugs to OTC status is escalating, leading to a rise in the quantity of medicines sold in the OTC market (DeLorme *et al.*, 2010). For example, in Ghana, ACT, the anti-malaria drug has been removed from Prescription-Only Medicine (POM) list and de-classified to OTC to allow for easy access to the medicines and also to promote self-treatment (Harper & Gyansa-Lutterodt, 2007). In the same vein, in the United States of America, products comprising more than eighty active ingredients of different therapeutic groups had been transferred from Prescription-Only status to OTC from period of 1976 to 2000 (WHO, 2000b). Also, the use of OTC medications has been promoted by health care professionals as more affordable health care compared to prescription medications (DeLorme *et al.*, 2010).

Intensive competitive advertisement coupled with the cross-border sale of pharmaceuticals through the internet has created additional demand for self-prescription drugs. For example, it is estimated that the number of medicinal products sold via Yahoo and WebCrawler search engines as of May 7, 2000 amounted to 16 966 and 244 546 respectively (WHO, 2000b).

2.3.2 Adverse Effects of Over-the-Counter Medications

The potential role of OTC medications on health care has attracted the attention of policy makers and health care professionals in recent years.

It has been argued that the benefits of OTC medications can only be achieved if patients use them safely and effectively (Pharmacy Today, 2010). Research indicates that, roughly 82 percent of Americans have not experienced any form of adverse effects from taking non-prescription drugs, whilst only 17 percent reported to have negative reactions (NCPIE, 2002). Generally, customers perceive OTC remedies to be effective and safe compared to prescription drugs. For example, a survey conducted by Ajuoga, Sansgiry, Ngo, and Yeh (2008) suggested that 71.6 percent regarded OTC medications as safe, while 73.3 percent perceived them as effective for managing HIV/Aids. Moreover, research revealed that about 53 percent of American adults who consumed OTC herbal remedies thought that they were effective, whilst 65 percent perceived them to be safe (Johnston, 1997).

Though, OTC drugs are well-recognised to have a positive safety profile, the public anxiety relating to the potential risks remains a matter of concern because of the unrestricted use of these medicines (Calamusa, Marzio, Cristofani, Arrighetti, Santaniello, Alfani, & Carducci, 2012). It is also argued that the increasing availability of OTC medicines in the pharmaceutical retail outlets in some countries might have led to abuse, delays in diagnosis and a waste of resources (WHO, 1988). People who resort to OTC medications sometimes refuse to seek for professional advice for conditions which are critical and desist from self-medication for alternative therapies (Shaw, 1998; Mathialagan & Kaur, 2012).

It has however been argued that intentional or unintentional failure to follow the usage instructions of medicines is applicable to all categories of medicines whether prescription or non-prescription drugs (Pharmacy Today, 2010). Additionally, it has been estimated that, globally, over 50 percent of all drugs have been sold, dispensed or prescribed wrongly, while 50 percent of patients failed to take them correctly (WHO, 2002c).

However, many developing countries are faced with an acute shortage of pharmacists and qualified dispensing staff to run chemist stores, coupled with poor regulatory mechanisms at the grass-root level as well as inefficient storage facilities. The potential effect of this situation is poor dispensing and irrational use of medicines in the community that can ultimately result

in increased drug resistance (Harper & Gyansa-Lutterodt, 2007). Previous research indicates that, out of a sampled population of 215, 37.2% (80) of the respondents had misused OTC medications in one way or the other while, out of a total of 380 medicines consumed, 31.9% had been misused (Ajuoba *et al.*, 2008).

Moreover, there is misconception among customers that if a medicinal herbal product is described as a “natural” and increasing the dosage can boost its effectiveness. This can rather cause persistent overdose of the product. For example, a past customer survey indicates that about 33 percent of Americans took more than the recommended dosage of OTC medication for the simple reason that they thought that the efficacy of the products would increase (NCPIE, 2002). In addition, overdose could also arise when two or more OTC drugs are taken which are used for the same treatment of an ailment (Shaw, 1998). An empirical research revealed that almost 36 percent of Americans were more likely to use multiple OTC medicines when they have more than one symptoms, such as, headache and sore throat (NCPIE, 2002).

Furthermore, non-prescription medications usually interact with many prescription-only pharmaceuticals and other products, such as, food and alcohol. Unfortunately, before a prescription is made, the physician may not investigate whether the patient is using any OTC drugs (WHO, 2000b). Similarly, several patients fail to inform doctors about non-prescription drugs they are using for fear of unfavourable reaction by the health care practitioner. In extreme cases, it is only until adverse drug event occurs that the use of these medicines is disclosed (Shaw, 1998).

However, a survey in 2002 indicated that nearly 75 percent of medical professionals in America frequently inquire directly from the patients about the use of OTC drugs (NCPIE, 2002). It has also been highlighted that self-treatment with OTC medicines depends on the patient’s judgement, in addition to, the label information to permit correct diagnosis of the condition. This requires the patient’s ability to read and interpret the information on the package or the leaflet (Brass, 2011).

World Health Organization (2000c), however, pointed out that the ordinary end-user of OTC medications usually does not understand the principles of pharmacology or therapy and/or particular features of the medicinal product used. Brieger *et al.* (2005) also stated that most patients, specifically, in Africa have low literacy rates and may find it difficult to interpret a

picture on the packet insert of a pharmaceutical product. Past research also indicates that only 38.1 percent completely understand the contents, due to significant differences in educational levels (Calamusa *et al.*, 2012). As a result, a wrong diagnosis can result in treatment failures of the actual cause of the present condition (Brass, 2011).

Additionally, promotional messages via the media and internet about non-prescription medications seem to portray the absence of the risks of the products. This often creates the impression that OTC drugs are just like another customer health product which can be taken excessively and this can result in the non-medical use of the product (WHO, 2000b).

2.4 Overview of Packaging

In a highly competitive business environment partly due to global trade liberalization, many industries face keen product and / or price competition that succeeds in lowering profits to unhealthy levels (Kotler & Rath, 1983). One of the few strategic initiatives that companies can adopt to be competitive and to protect and improve market position is to design superior packaging for their target market (Rettie & Brewer, 2000). Packaging has accompanied mankind from many years ago when primitive humans lived as nomadic hunters and gatherers. Wraps of leaves, shells of nuts, animal skins and hollow wood pieces were used in those days (WPO, 2008). Since those times, packaging has evolved to the modern-day packaging.

Even though, packaging is perceived to be a negative and unnecessary cost to society, without packaging, materials handling and modern customer marketing would be costly, inefficient and virtually impracticable (Simms & Trott, 2010; Lockamy III, 1995; Robertson, 2013). Packaging has created a platform for customers to have a wide range of products to choose from, eliminated seasonality of some products and provided a service in the context of busy lifestyles (Stewart, 2007). The distribution of goods is a backbone in modern society due to changes in customer lifestyle and self-service. Customers have been demanding smaller quantities of products and, coupled with increasing distances between the point of manufacturing and consumption, have made packaging more important in the distribution chain (Jahre & Hattland, 2004).

In response to new trends in customer lifestyle and business environment, many retail firms as well as food services companies, have been established. The growth of these firms has largely

depended on a combination of a highly competitive superior logistics which are sustained by packaging innovations and marketing (Coles, 2003). Thus, package innovation has revolutionized the modern distribution systems for meeting new customer demands and driven market growth in the customer goods market. For example, Tetra Pak has invented an “aseptic” package to enable dairy products to be distributed over long distances and also to enable them to be kept in the store shelves without refrigerator trucks and facilities (WPO, 2008).

It has been asserted that packaging has played an essential role in customers` lifestyle and the manner in which businesses are organised (Bundh, 2005; 2009). A lot of packaging has been designed for containerization or to fit pallet sizes to facilitate export trade (Bundh, 2009). Through packaging, the production of large volumes of commodities on a daily basis can be managed, while non-durable goods can be transported over long distances the world over.

Globally, packaging has become a vital tool to facilitate trade and economic growth, especially, in the emerging markets (WPO, 2008). It is argued that innovative packaging provides cost-effective ways of preserving and sustaining world resources by maximizing the products` shelf life, and thus safeguarding the products before final consumption (Coles, 2003). The author further noted that a significant proportion of food production is wasted in many developing countries ranging from 30% to 50%, whilst in developed economies the percentage is relatively insignificant ranging between 2% and 3% due to efficient processing, packaging and distribution systems. The product package (that is, to contain, preserve, protect and inform) has improved safety and health, and the overall quality of the life of people (Coles, 2003; WPO, 2011).

However, the use of many forms of packaging across different parts of the globe depends upon the extent of development, and hence the per capita consumption in industrialized countries is considerably higher than in less developed economies (Bundh, 2005). The World Packaging Organization (2009) suggested that packaging is an important component of trade in some of the developed world, whilst it satisfies logistical needs of the distribution chain in most of the developing countries.

The global turnover of the packaging industry was estimated around US\$500 billion in 2008, with the sales of packaging container contributing a larger proportion and packaging machinery accounting for about US\$25 billion (WPO, 2008). In the United Kingdom, the packaging industry` total revenue was GB£11 billion per year and employed about 85 000 people

representing 3% of the total labour force in the manufacturing sector. It was also among the top ten manufacturing industries and contributed about GB£12 billion annually to the United Kingdom`s economy (Packaging Federation, 2015).

Furthermore, the packaging industry contributed a sum of R43 billion to the economy of South Africa which accounted for nearly 1.5% of total Gross Domestic Product (GDP) of R2.86 trillion in 2012. Nor is this all, the contributions of almost all the other industries to GDP largely depended on the packaging innovations (WPO, 2014).

The growth in the packaging industry was attributed to increased global trade, smaller family size, new trends in lifestyle and search for convenience (Bundh, 2005). Indeed, packaging is an important driver of growth in customer and industrial markets, and its usage is increasing consistently with the global economy.

2.4.1 Pharmaceutical Packaging Industry

It has been emphasized that packaging has contributed significantly to the development of drug industry as it has become an integral component of the drug delivery system. Packaging used to be considered an afterthought by many pharmaceutical companies. Packaging has been widely acknowledged as an essential part of medicinal product whose shelf-life can only be guaranteed in its packed state (El-Meniawy, 1991).

The global pharmaceutical industry has increased with annual growth rate of about 5% per year from 2010 to 2017 (Kunal, Akhilesh, & Kumar, 2012). The authors further stated that the rate of growth has been more visible in emerging countries like China and India due to the rapid expansion of outsourcing activities and generics in these economies. In 2010, the world drug packaging market was valued at US\$47.8 billion and was predicted to increase at a compound annual growth rate (CAGR) of 7.3% from 2010 to 2017 to an amount of US\$78 billion by 2017. The packaging market in advanced countries like Japan, United States and Western Europe accounts for more than 70 percent of this value, though China presents rapid growth opportunities. It is also estimated that the global market for medicinal product packaging was predicted to increase at 5.5 percent yearly from 2010 to 2015. While the world packaging industry was valued at US\$424 billion in 2010, the global pharmaceutical packaging industry accounted for approximately 5% of this amount (*ibid*).

In their view, the main drivers of growth of pharmaceutical packaging industry were integration, advances in manufacturing processes and technological development. The authors further stated that the pharmaceutical packaging industry has been growing as the patent of drugs worth about US\$142 billion expired in 2017 which could lead to increase in generic market and the pharmaceutical industry as whole. Moreover, constant innovations in pharmaceutical products have had a direct impact on pharmaceutical packaging.

Munzel (2007) is also of the view that legal changes, the introduction of new medicines and technological development have resulted in constant changing in packaging requirements in the pharmaceutical industry. Traditionally, close to 51 percent of medicines made up of capsules or tablets were taken orally and they were either packed in blister packaging or fed into plastic pharmaceutical bottles. Liquids, pastilles and powders also form part of the drugs which were taken orally. However, many oral tablets have come with different shapes and sizes. Coupled with this, other methods for taking medicines have been increasingly gaining popularity. These include transdermal (3%), inhalation (17%) and parenteral (29%). These developments in the pharmaceutical industry have contributed tremendously to promote the pharmaceutical packaging industry (Kunal *et al.*, 2012).

2.4.2 Conceptualization of Packaging

Packaging has been defined in several ways by many authors in different academic disciplines. According to Jadhav, Zalte, and Saudagar (2014:194), packaging is a “science, art and technology of enclosing or protecting products for distribution, storage, sale and use”. The author further stated that packaging is the process of designing, evaluation and fabrication of packages. A product’s package is also related to the container, closure, carton, and box components.

Kunal *et al.* (2012: 1) also defined packaging as “an economical means of providing presentation, protection, identification, information, containment, convenience and compliance for a product during storage, carriage and display until the product is consumed.”

Natarajan, Govindrajan, and Kumar (2015: 15) described packaging as the “art, science and technology of preparing and encapsulating goods for the market”. The authors further stated that packaging is a “co-ordinated system of preparing goods for transport, distribution, storage,

retailing and end-use”. Thus, packaging ensures the safe delivery of goods to the end-user at a minimum cost while maximising sales.

Packaging is also described as designing and producing the container or wrapper for a product (Kotler *et al.*, 2002), whilst the label relates to the simple tag fixed to the product or an elaborately design graphic on the package that conveys the brand name and the printed information to the end-user (Kotler, 2003). Kotler *et al.* (2002) noted that, labelling is an aspect of packaging.

Alternatively, Agariya, Johari, Sharma, Chandraul, and Singh (2012) noted that packaging is the wrapping material that surrounds a product to contain, identify, describe, protect, display, promote, and for the purpose of making the product clean and marketable.

Brassington and Pettit (2003) also suggested that, packaging is a container or wrapping in which the product is offered for sale. Arens (1996) cited by Kuvykaite *et al.* (2009: 53), also defines packaging as “the container for a product-encompassing the physical appearance of the container and including the design, colour, shape, labelling and materials used”.

Hassan, Leng, & Peng (2012) highlighted that packaging is a container which holds, protects, preserves and facilitates the handling and commercialization of products.

Clearly, many authors have conceptualized packaging in terms of its functions, whilst others have related packaging to a container for the product as well as its appearance. However, Kotler (2003) is one of the few authors who has described packaging as an activity. In this study, packaging is seen as the container of the product including its appearance and hence, the definition proposed by Arens 1996 cited in Kuvykaite *et al.* (2009) will be adopted in this thesis.

A package for a product may consist of a primary container which is in immediate contact with the product. The role of the first phase of product package is to hold and protect the product against any substances that can make it unwholesome. The second phase of package contains the primary container and is usually discarded during the consumption of the product. The primary purpose of secondary packaging is to aid identification and provide additional protection needed to ensure safe-keeping of the product at the warehouse and for reuse of the

product container. Finally, the third category of product container is the shipping or tertiary package which unitizes the primary and secondary packages and serves to identify and protect them throughout the distribution chain of the products (Kotler *et al.*, 2002).

Packaging is recognized as an essential aspect of the core product and the brand (Ampuero & Vila, 2006; Underwood, 2003; Chirag, Tyagi, Jaimin, Pinkesh, & Parasher, 2012). Simms and Trott (2010) suggested that, products in the customer goods market appear to be highly characterized by packaging to such an extent that it cannot be detached from the core product. Gonzalez, Thornsburg, and Twede (2007) also pointed out that, in most cases, the primary packaging forms part of the actual product and the brand, and they are intertwined.

However, Keller (1993) is of the view that packaging aids the buying and consumption of a product but it is not an ingredient of the product itself. Additionally, most authors in the contemporary marketing consider packaging as a component of product strategy which is an essential element of the marketing mix (Kotler, 2003; Kotler & Keller, 2009; Brassington & Petitt, 2007; El-Meniawy, 1991). However, Kotler (2003) pointed out that some authors also recognize packaging as a fifth “P” in addition to place, price, product and promotion in the marketing mix model.

2.4.3 Elements of Good Packaging Design

Griffin *et al.* (1995) referenced by Agariya *et al.* (2012) suggested that elements of good packaging design include; attraction of customers’ attention, transmitting information, creating desire and selling the product.

- **Attraction-of-Attention**

Packaging must create visible impact on the shelf by differentiating itself from other competing products. The package must draw and grab potential buyers’ attention and assists existing customers to identify the brand. This can be achieved by effectively combining the colours, shape, logo and other characteristics of packaging design (*ibid*).

- **Communication–Information**

According to the authors package designed must clearly signal to the buyer the contents of the product, its use and instructions as well as the outcome after usage. All other relevant

information must be directly or indirectly conveyed to the prospective purchaser through the design. Directly, the packaging must describe the product, its features and benefits, and the method of application. More importantly, the packaging characteristics, such as the shape, colour, design forms, and graphics can be implicitly used to transfer the intrinsic attributes of the product to the customer. Printed information on the label relating to the contents, instructions for use and that required by law must be legible, simple and understandable to assist the customer in product choice (*ibid*).

- **Create desire for the package**

A well-designed package must point out to customers that the product could satisfy their needs or give them inner satisfaction. According to Robertson (1993), a distinctive package must show the contents of the product and powerfully communicate to the customer the satisfaction the product offers. Innovation in packaging technology has added several convenient features to a package to meet the ever-changing demands of customers for convenient purchases.

- **Selling the product**

Effective packaging design does not only stimulate demand for the product but also supports loyalty of the brand. Thus, an appealing packaging must transfer extra benefits to customers such as easy dispensing devices, special give-always and re-usable benefits to facilitate repeat purchases (Griffin *et al.* 1995 cited by Agariya *et al.*, 2012).

2.5 Packaging and Over-the-Counter Drug Market

Nowadays, customers have assumed more responsibility for their health care because of convenience and desire to save time and cost. Hence, OTC medicines have gained popularity in recent years due to their role in self-care and self-medication practices.

Packaging has been well-acknowledged as the key influencer in customer choice decisions and the use of OTC drugs (Sansgiry & Pawasker, 2005; Wright, 1997; Kim & King, 2009). Past research also reveals that packaging was more important to consumers when purchasing non-prescription medications than prescription drugs (Kim & King, 2009). The authors further pointed out that, for most ethical drugs, the customer might pay less attention to packaging due to the recommendation from the physician before final purchases are made (Kim & King, 2009). Furthermore, empirical research indicates that customers considered packaging as an important attribute when buying herbal medicines in Ghana (Kumah *et al.*, 2015).

Kim and King (2009) suggested that OTC products are by nature similar to FMCGs because they are bought by the customer`s own initiative. Dickov (2012) also highlighted that all the roles with regard to customer buying, the decision-making process and the consumption of non-prescription products are performed by the end-user. Kim and King (2009) therefore concluded that the functions of packaging in the OTC product market are analogous to the customer-packaged goods market.

2.5.1 Functions of Packaging in Over-the-Counter Drug Market

According to Prendergast and Pitt (1996) packaging performs logistic and marketing functions but are inseparable. It has also been suggested that changing customer needs requires packaging to perform environmental function in addition to the logistic and marketing roles (Rundh, 2013). Consequently, the author is of the view that packaging performs logistic, marketing and environmental functions as shown in the Figure 2.1 below.

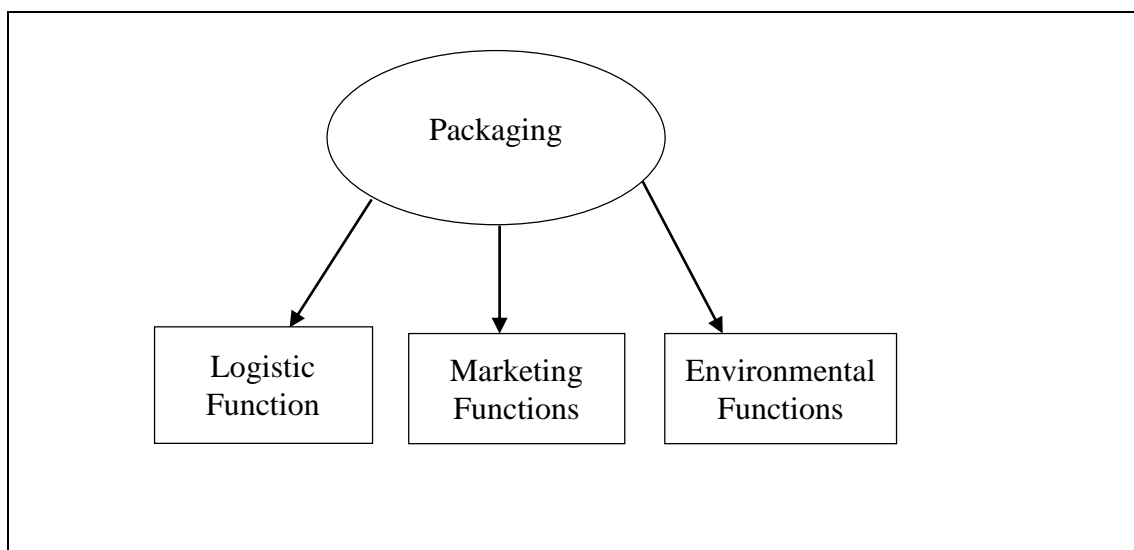


Figure 2. 1: Packaging Functions in the OTC Market

Source: Rundh, (2013:1548)

2.5.2 Logistic Functions

The logistic role relates to the functional aspects of packaging which include to ease the movement of products from the manufacturer to the end-user and the physical needs that are satisfied by packaging within the supply chain (Rundh, 2013). It is argued that, the basic functions that companies have traditionally assigned to packaging are to contain, protect and preserve the product during its storage, transportation and handling as well as to facilitate the distribution of the market offering from the producer to the end-user (Brassington & Pettit, 2003; Rundh, 2013). These functions are essential at the times of the manufacturing, transportation, storage, selling and consumption of any product (WPO, 2008). Pareek and Khunteta (2014) stated that pharmaceutical packaging must essentially provide for the drug's safety, identity, containment, and convenience of handling and delivery. It has been highlighted that the crucial role of packaging is to maintain the product integrity by safeguarding the product against any event of damage from climatic conditions, bacteria or any hazards the product may be exposed to at the time of its manufacture until consumption (Stewart, 1997).

It has also been emphasized that the primary logistic functions of packaging relate to containment, protection, apportionment, unitization, convenience and communication (Lockamy III, 1997; Robertson, 2013; Prendergast & Pitt, 1996). A package's apportionment and unitization features determine the relative flexibility of the product to warehousing, transportation, and handling as well as usage, storage and the quantity purchased. The convenience function of the packaging simplifies the usage of the product to the end-user. Dickov (2012) also defined convenience in terms of the ease of the therapy and the route of administration, in that customers generally look for less painful or complicated treatments. Lockamy III (1997) noted that these functions do not only impact on product design, transportation, manufacturing, distribution, warehousing and marketing functions but also contribute more significantly to the firm's competitive advantage.

Vernuccio, Cozzolino, and Michelini (2010) also highlighted that the principal logistic roles required by a packaging system to achieve the maximum efficiency and high performance include handling and transport, conservation and protection, storage and manipulation, and information. Dobson and Yadav (2012), however, decomposed these functions into three groups, namely handling, transport, manipulation and storage, protection and conservation, and

information. An empirical study also reveals that manipulation and storage as well as protection and conservation, handling and transport support the principles of innovations in logistics.

In contrast, the informational function seems to have no significant relationship with the logistic role of packaging (Vernuccio *et al.*, 2010). Protection and conservation relates to the role of the product container in safeguarding the chemical, thermal and physical integrity of the market offering through the primary package. Thus, the primary package must not interact with the active pharmaceutical ingredients in order to preserve the core product and lengthen its life-span (WHO, 2002a). Handling, transportation, manipulation and storage describe the collective roles of primary, secondary and shipping packaging in the different activities that take place in the course of handling, transporting, manipulation and storage in all aspects of the product mixes and across all stages of the manufacturing, distribution and consumption processes. Finally, information defines the communicative role of packaging, which relates to the messages conveyed by the packaging in order to provide clear instructions for transporting the products in the distribution chain.

Nowadays, innovations in packaging technology have promoted the traceability of products along the supply chain. For example, tamper-proof packages permit visual inspection of the pharmaceuticals before consumption to prevent the product from being tampered with, or to detect counterfeiting of certain medicinal products (WHO, 2002a). Additionally, challenges such as senior-and user-friendly as well as child resistance keep on growing in importance in pharmaceutical industry. The pharmaceutical industry has not only opted for packaging that satisfies traditional requirements but also innovative designs (Munzel, 2007) to guarantee user-friendly and to prevent children from accessing the contents of the formulation (Chirag *et al.*, 2012).

According to Prendergast and Pitt (1996), the increasing use of material handling, automation of warehousing and information technology have contributed to the immense role of packaging as an ingredient for logistics. This has had a significant effect on warehouse layout and design and ultimately, has contributed to overall productivity of the warehouse.

2.5.3 Marketing Functions

Today`s highly competitive environment characterized by changing trends in lifestyle, increasing self-service ethos and the proliferation of brands in the OTC drug market from which customers choose (Kauppinen-Raisanen, 2010; 2011; DeLorme *et al.*, 2010), requires traditional herbal medicine firms to make their brands stand out from the clutter in the retail shelves.

Furthermore, Underwood and Klein (2002) suggested that as the advertising environment is increasingly growing to a point of saturation, firms are re-allocating their advertising funds to sales promotion and point-of-purchase communication. DeLorme *et al.*, (2010) also argued that the conventional form of advertising has little impact when customers are deciding to buy non-prescription medicines.

Packaging design is regarded as one of the obvious competitive marketing tools (Kotler & Rath, 1983) that identifies and differentiates between competing brands and breaks through the overcrowded marketplace (Underwood & Klein, 2002; Rettie & Brewer, 2000). Quraeshi *et al.* (1983) pointed out that packaging can be used as a tool for visual differentiation to distinguish products from other competing generic products. For example, by making the company name more visible in the package, stressing the use of colours or bold print, and using symbols or other graphic illustrations to distinguish the product from other generic counterparts. More importantly, the patient`s safety also depends on rapid and clear identification of drugs during emergencies (Drobrucka, 2014).

Packaging design can be used to transmit valuable information, provide customer satisfaction and overall gain competitive strength (Kotler & Kath, 1983; Butkeviciene, Stravinskiene, & Rutelione, 2008), which can ultimately contribute to business success (Rundh, 2013). Well-designed packaging has the potential to build brand and improve sales (Kotler & Keller, 2009). As an increasing number of pharmaceutical shops are turning to self-service retail outlets (Kauppinen-Raisanen, 2011), packaging may be the primary vehicle of transferring information between the product and the end-user at the point-of-purchase (Gonzalez *et al.*, 2007).

It has been reported that, approximately 82 percent of decisions are made in the store, while 62 percent of all purchases are made on impulse (POP AI, 2014), indicating that potentially the role of packaging to communicate and influence product choice at point-of-purchase is heightened (Underwood, 1998). Obviously, packaging can be described as a key driver of impulse buying behaviour (Butkeviciene *et al.*, 2008), and in some category of purchases, unplanned buying is estimated to be about 85 percent of sales (Wallace, 2001). Hence, firms' attention on packaging as an in-store communication and brand-building tool has been increasing rapidly (Deliya & Parmar, 2012; Rettie & Brewer, 2000). This has largely replaced much of the sales force in the store (Garber *et al.*, 2000a) and also reduced the cost of advertisement and branding (Gonzalez *et al.*, 2007).

Essentially, packaging is seen as a promotional tool as it performs a similar role as the other marketing communications elements (Silayoi & Speece, 2007). Young (2008) also pointed out that packaging design is an important cue that influences product perceptions and brand image, improves functionality and post-consumption satisfaction.

Clearly, the contribution of packaging to sales and hence, the overall profit margins of a business organization cannot be overlooked as the self-service ethos becomes popular and the trend of lifestyle changes. Past research reveals that the customer perception of herbal medicines is positively influenced by packaging (Kumah *et al.*, 2015). Indeed, at the point-of-purchase, packaging obviously provides opportunity to a firm by influencing customer perceptions (Kotler *et al.*, 2002). Packaging is also an important product attribute that customers infer from in the store when the brand is less familiar or shopping for products in an unfamiliar category (Underwood, Klein, & Burke, 2001). Moreover, in the shop, where the customer might not have thought deeply about the brand before entering the store, the intention to buy a brand may depend upon what is communicated at the selling point (Silayoi & Speece, 2007).

Lofgren (2005) noted that, packaging must therefore transfer a message to the customer at the point-of-sale, while reinforcing the customer's intention to buy by conveying valuable information and user-friendly benefits. The purpose of this message has been to stimulate interest in the market offering (Gardner, 1981) and ultimately, sell the offering (Griffin, Sacharow, & Brody, 1985). Packaging has been customers' initial point-of-contact with the

product in the store shelves, and it affects customers' first and later impressions (Kotler & Keller, 2009) about the company and its products.

It has been highlighted that packaging is important at the first moment-of-truth by attracting attention and transmitting the product benefits to the customer (Lofgren, 2005). Underwood and Ozanne (1998) suggested that with products which are bought in their raw state like food stuffs, the buyer often depends on the packaging to form an impression about the final product. The product appearance communicates the product's uniqueness and originality to the customer which plays a crucial role in brand preference (Silayoi & Speece, 2007).

Ghoshal, Boatwright, and Cagan (2009) noted that packaging can be considered as special form of advertising tool because it can be used as a tangible medium of communication to transfer vital messages about the actual product. Thus, packaging continues to influence and strengthen customer brand preference long after the buying decision is made.

Packaging also appears to be the only advertising tool that communicates to customers at every stage of the buying-decision process in the store. A study indicates that packaging influences customers' decision-making before, during and after purchases (Butkeviciene *et al.*, 2008). Moore (2012) stated that, the only means of communication between the manufacturer and the customer when the product leaves the pharmacy is via packaging. Packaging therefore reinforces the instructions given by the OTC medicine seller, and ultimately improves the compliance of the drug therapy (Keerthi, Prasanna, Sharuna, & Rao, 2014). For a large majority of customer goods, packaging offers a cost and sales-effective medium of communication at the selling point (Wallace, 2001). It has also been established that, packaging is the biggest vehicle of communication because of its extensive reach to many prospective buyers, its presence at the point-of-purchase and at high involvement level when customers actively search for package information to make purchase decisions (Peter, 1994 cited by Brassington & Petitt, 2003).

It has been emphasised that the traditional form of advertisement usually lasts for a few seconds while the average length of OTC commercial is around 21.7 seconds and are mostly transmitted in the mid-afternoon (2–4 pm) and early evening (6– 8 pm) in a day (DeLorme *et al.*, 2010). Although verifiable data are not available, this situation is not different from the advertisement of OTC herbal medicines in Ghana. Indeed, a product package is recognised as a more

permanent and pervasive medium of brand communications platform than any other promotional tools (Wallace, 2001). In addition, a brand that receives low advertising support and loyalty, packaging becomes the only essential tool of communication to the target market (Bundh, 2005). Empirical evidence reveals that well over 73 percent of customers rely on packaging to support their purchasing decisions at the selling points (Well *et al.*, 2007).

Creusen and Schoormans (1998) also argued that packaging performs six different roles: communication of aesthetics, symbolic and functional value, grab attention, categorization and ergonomic. In a way, packaging transmits aesthetic and symbolic value, functional features and offers quality impressions as well as facilitate ease of use. Enhanced attention can increase sales by ensuring that the brand enters the customer`s consideration set (Underwood & Klein, 2002).

Consequently, packaging performs an invaluable role in the marketing strategy along with other marketing variables. From the perspective of the customer, packaging conveys value, messages, simplifies choice and entertains (Kotler & Rath, 1983). It has been emphasised that customers` perception and consumption of attractively designed product form can enhance sensory pleasure and stimulation (Bloch, 1995). A packaging may add value to the product by transmitting product features, aesthetic and positive information as well as preserving the product quality (Gonzalez *et al.*, 2007).

Packaging also represents the company and its brands which may enhance customers` confidence in the company`s image as well as its brands (Kotler & Keller, 2009). A high quality packaging design can create an opportunity for companies to charge premium price, and increase and sustain market share for their brands. Due to rises in income levels, affluent buyers may be willing to pay more for dependability, prestige, convenience and aesthetics offered by innovative packaging design (Kotler, 2003).

Kotler and Rath (1983) suggested that, a well-managed packaging design can re-invigorate customer interest for a matured product to increase its share in the market and create a personality for a new product to distinguish it from competitors. For example, toothpaste pump dispensers increased market share by 12 percent because they offered greater convenience and were mess-free (Kotler, 2003). Moreover, warranties and guarantees which are important part of the product strategy frequently appear on the packaging (Kotler & Keller, 2009).

2.5.4 Environmental Functions

The need to protect the environment has become increasingly crucial in many countries of the world in the last few years. Rapid deterioration of environment mainly caused by waste disposal has attracted greater attention by governments and civil society groups in many parts of the world. It has also been established that packaging materials form the largest component of solid waste (Min & Galle, 1997).

However, pharmaceutical packaging constitutes a small proportion of the waste, but its disposal can negatively affect the environment (WHO, 2002a). Consequently, several laws and regulations have been introduced in many countries that prohibit the use of harmful materials, while stringent measures have been taken for packaging materials to be reduced, recycled or re-used (Mutsikiwa & Marumba, 2013).

Faced with this challenge, companies and pharmacists have introduced new directives and policies aimed at reducing, salvaging and recycling packaging as well as eliminating and incinerating, especially, contaminated packaging (WHO, 2002a). Mutsikiwa and Marumba (2013) noted that, the most influential laws that influence packaging design is associated with labelling, which frowns on falsification of information on the label. The authors are also of the view that, the purpose of this legislative requirement is to make sure that the product conforms to the quality standards and also aids customer decision-making process.

Evidence from marketing literature suggests that many companies have experienced a remarkable fall in brand equity due to deceptive packaging practices (Underwood & Ozanne, 1998). The authors suggested that marketers can enhance brand equity by designing packages that convey information which is sincere, truthful, comprehensible and legitimate. Rundh (2013) noted that the environmental role of packaging relates to reduction in packaging materials, recycling, ecological awareness and re-utilization.

This is done not only to meet legislative requirements but also in recognition of the marketing environment and competition. It is also argued that packaging design needs to be compatible with the environment by facilitating recycling activities, and reducing waste, harmful materials, material used and the risk of environmental damage as well as enhancing energy-saving in the production processes (Vernuccio *et al.*, 2010).

Bundh (2005) noted that customers and individuals also desire packaging that is eco-friendly and packaging materials that can be re-used and recycled. Moreover, issues relating to the environment and ethics on buyer purchase decisions are increasing (Rokka & Uusitalo, 2008) and as a result, a growing number of firms have developed holistic environmental programs and sustainable products in order to build a competitive edge to secure market success (Min & Galle, 1997; Magnier & Crie, 2015).

Rundh (2005) emphasized that eco-friendly and ergonomic related issues of packaging are of greater importance to ensure competitiveness in the international market. An empirical research also shows that environmentally-friendly or ethical product aspects have a positive influence on customer product choice (Rokka & Uusitalo, 2008). Magnier and Crie (2015) also noted that customers have a favourable perception for brands that incorporate substantial environmental and ethical values.

Another important aspect that relates to environmental packaging has been eco-labelling when customers are scanning for environmentally-friendly products (Bundh, 2005). Past research shows that products with positive environmental information are perceived to be of higher quality and value and are more likely to be bought than analogous products that disclose negative ecological messages (Borin, Douglas, & Krishnan, 2011). Research conducted by Rokka and Uusitalo (2008) confirms that the biggest customer segment considers environmentally-labelled packaging as the most essential product cue when choosing among functional drink products.

2.5.5 Packaging and Marketing Mix

Kotler (2003) is of the view that effective packaging design requires harmonizing the elements with each other and along with pricing, advertising and other aspects of the marketing mix. Jahre and Hattland (2004) highlighted that appealing packaging plays an immeasurable role in marketing mix by attracting and retaining existing customers. Effective packaging design provides a platform for increasing sales of the product (Brassington & Pettit, 2003).

Moreover, packaging serves a distinctive tool for marketing communications by directly transferring the implied meaning of the product and its characteristics, usage and benefits to customers at the exact point of purchase (Dobson & Yadav, 2012). The authors also pointed

out that packaging provides a complementary and permanent medium of transmitting messages to customers.

Packaging also provides a platform for distributing coupons, samples and gifts, advertising related commodities, launching and/or developing new products, and presenting on-pack offers (Brassington & Pettit, 2003). A product appearance is the face of the product, and may be designed to assist identification to enhance the image of the product and also to differentiate it from similar products in the market (Marsh & Bugusu, 2007; Dobson & Yadav, 2012).

An appealing packaging has wider coverage than the traditional advertising, and has the potential to distinctively position a product in the market and in the customers` memory (Agariya *et al.*, 2012). For brands that receive less or no support from media advertising, packaging provides the last opportunity to convey the brand message to the target market (Rundh, 2005; Underwood *et al.*, 2001).

Packaging of different sizes is an important factor for price variations (Yan, Sengupta, & Wyer, 2014), end-user segmentation (Brassington & Pettit, 2003), and can extend a product into a new target market (Agariya *et al.*, 2012). Past study also established that price perceptions affects customers` quality judgement, and that a smaller product package is indicative of higher price and hence, of higher quality compared to an analogous product in a bigger container despite the latter commanding a higher overall price (Yan *et al.*, 2014).

Convenient packaging features such as ease of use, handling and disposal, product visibility, being re-sealable, and traceability, add value and competitive advantage to products (Marsh & Bugusu, 2007). Bundh (2005) concluded that, packaging has a major influence on the controllable marketing elements by improving customer value or reducing marketing cost as a whole. This may arise from ensuring product safety, improving convenience, reducing cost of transportation and handling, and the possibility of price differentiation, aiding marketing communications activities, contributing to product innovations and strengthening the packed product concepts.

2.6 Components of Packaging Design

Many researchers have attempted to identify and classify packaging elements in different ways. Kotler (2003: 436) identified six elements for effective package design comprising text, shape, size, colour, brand mark and material. Kotler and Keller (2009) noted that the packaging characteristics could be classified into functional and aesthetic. The aesthetic elements include the package's shape, size, colour, material, graphics and text, whilst the functional attributes entail the structural designs, like package innovations which facilitate convenience, and tamper-proof and re-sealable products.

Moreover, Rundh (2013) is of the view that packaging design elements that can be combined to become a visible sales device to a customer when purchasing and consuming a market offering include package shape, materials, colours, structure, text and images. Consistent with Kotler and Keller (2009), the author further classified the design attributes of packaging into functional and aesthetic.

In addition, Obeesi (2010) identified topography, colour, size, shape, photography, texture and layout as components of packaging when investigating the role of packaging in promoting Made-in-Ghana products in Ghana.

Smith and Taylor (2002) also identified six variables for designing packaging of a product: shape, size, colour, graphics, materials and smell. Underwood (2003) also suggested that the attributes of packaging design are brand logo, colour, font, packaging material, pictorial, shape, and product information. The author further classified these elements into structural (shape, size, material) and visual (logo, colour, font, pictorial, product information). It has also been established that the elements for effective packaging design of non-prescription medicines include: package material, shape, graphics, colour, font size, text, photography, flavour, statutory information, and packaging technology (European Medicines Agency, 2011). Likewise, Kauppinen-Raisanen (2010) also proposed packaging colour, shape and material, and letter font as the components of packaging design of OTC medicines.

Kumah *et al.* (2015) also proposed packaging colour, innovations, wrapper and material as elements of effective packaging design that influence consumer buying behaviour of herbal medicines in the store in Ghana.

Ampuero and Vila (2006) also classified the packaging characteristics into graphics and structural elements. The graphic features include: typography, package colour, graphical

images and shapes used, whilst structural design elements consist of size and the form of the container.

Deliya and Parmar (2012) pointed out that the design of wrapper, colour, font size, background image, material, printed information and innovation as the elements of packaging design. Kuvykaite *et al.* (2009) also identified and distinguished packaging elements into visual and verbal elements. This position concurs with similar research conducted by Rettie and Brewer (2000).

Butkeviciene *et al.* (2008) also suggested the following components of packaging: smell, form, colour, images, size, graphics, materials, producer country, product information, name of product, brand, instruction for usage and special offers. These elements are dichotomized into non-verbal (form, colour, materials, imageries, smell, size and graphics), and verbal components (brand, name, producer/country, special offers, instructions of usage and product information). It has also been proposed that the visual attributes of packaging design include colour, graphics, size, material and form, whilst the verbal elements consist of country-of-origin, producer`s name, product information and brand (Kuvykaite *et al.*, 2009).

Agariya *et al.* (2012) also noted that graphics, size, form, and material are visual elements, whilst verbal component relates to the producer, country-of-origin, product information and brand. This is in contrast with the viewpoint of Keller (2013) who concluded that packaging is an element of a brand in addition to personality, brand name, graphic, symbol, slogan and logo.

Silayoi and Speece (2004; 2007) grouped packaging attributes into visual (size, shape, colour and graphics), and informational (technology innovations and product information). In addition, Kuvykaite *et al.* (2009) suggested that the type of information that is communicated to customers depends upon the nature of the packaging elements. It has been pointed out that, while visual attributes convey messages that affect the customers` emotions, verbal elements transmit information that influence customers` cognitive orientations (Silayoi & Speece, 2004). In their view, the various components of packaging effectively communicate to customers at different buying situations. Visual elements (graphics, size, shapes) are suggested to significantly influence customers` purchase decision-making process in a low involvement retail environment whereas informational attributes play a crucial role in high involvement. Moreover, time pressure also determines how a customer evaluates products at the selling points, partly, by reducing the attention to informational elements.

Table 2.2 below presents the attributes of packaging design proposed by authors in the marketing literature.

Table 2. 2: Summary of Packaging Design Elements

Author (s) and Year	Research Context	Packaging Design Elements
Kotler (2003)	General	Size, Shape, Material, Colour, Text, Brand mark
Smith and Taylor (2002)	General	Shape, Size, Colour, Graphics, Materials, Smell
Underwood (2003)	Groceries	Brand logo, Colour, Font, Packaging Material, Pictorial, Shape, Product information
European Medicines Agency (2011)	Pharmaceutical products	Package material, Shape, Graphics, Colour, Font size, Text, Photography, Flavour, Statutory information, Packaging technology
Ampuero and Vila (2006)	General	Typography, Colour, Graphical images, Shapes
Deliya and Parmar (2012)	Milk, Washing powder	Design of wrapper, Colour, Font size, Material, Background image, Printed information, Innovation,
Kotler and Keller (2009)	General	Package`s shape, Size, Colour, Material, Graphics, Text, Packaging innovations
Keller (2013)	General	Graphic, Logo, Brand name, Personality, Symbol, Slogan
Silayoi and Speece (2004: 2007)	Packaged food products	Size, Shape, Graphics, Colour, Product information, Technology innovations
Agariya <i>et al.</i> (2012)	Customer goods	Graphic, Size, Form, Material, Producer, Country-of-origin, Brand, Product information
Kuvykaite <i>et al.</i> (2009)	Milk, Washing powder packages	Colour, Graphics, Size, Material, Form, Country-of-origin, Name of producer, Brand, Product information
Kumah <i>et al.</i> (2015)	Herbal medicines	Colour, Innovations, Wrapper, Material
Rundh (2013)	Food and beverage industry	Colours, Material, Text, Image, Structures, Shape

Butkeviciene <i>et al.</i> (2008)	Milk, Shampoo, Chewing gum	Size, Form, Colour, Graphics, Images, Materials, Name of product, Smell, Brand, Product information, Country, Special offers, Instruction for usage,
Kauppinen-Raisanen (2010)	Non-prescription drugs (Pain-killers)	Colour, Shape, Material, Letter font
Obeesi (2010)	Made-in- Ghana Products	Topography, Colour, Size, Shape, Photography, Texture, Layout

Source: Compiled by the Researcher

2.6.1 Visual Elements

The visual attributes of packaging discussed in this study include; colour, shape or size, photography and typography. These elements can create a positive or negative image about the brand (Silayoi & Speece, 2004).

2.6.1.1 Packaging Colour

Colour is an important factor when customers are shopping for products. A package's colour is recognised to stimulate moods and emotions which impact on customers' perceptions and behaviour and consequently assist firms to position or differentiate themselves from competition (Aslam, 2006).

Colour is regarded as a key attribute of a product's package because it is vivid, memorable and emotionally-loaded. It is also recognized as a dominant visual cue that attracts attention and communicates positive brand image (Garber *et al.*, 2000a). Research conducted by Kauppinen-Raisanen and Luomala (2010) demonstrates that the colour on the product's package draws attention, communicates and conveys an aesthetic experience about a product or a brand. The authors further suggested that customers deliberately use colours for brand search, recognition and recall. Indeed, a product's package colours enhance brand recognition and visual distinctiveness, and also build associations and emotions that improve symbolism and/or a brand's benefits (Underwood, 2003).

It has been emphasized that pharmaceutical packaging colour influences customers' perceptions and evokes expectations about some drugs. For example, previous research affirms

that red, brown and grey packages are perceived to represent serious ailments compared to green or yellow packaging. Moreover, brown, red and orange packages indicate a high degree of precaution of use as opposed to blue, green and yellow (Rouillet & Droulers, 2005). In the OTC drug market, effective use of colours on packaging assists in identification of medicines in similar containers which can cause medication errors. It also allows for appropriate selection and safe use of drugs, especially, in situations where there is no pharmacist intervention (European Medicine Agency, 2011).

Colour is also considered as a search attribute which aids customers to determine the product's quality prior to making the purchase decision (Dimara & Skuras, 2005; Kauppinen-Raisanen & Luomala, 2010). Kerfoot, Davies, and Ward (2003) pointed out that colour influences a customer's perceptions of price and quality as well as the image of a brand. A past study shows that packaging colour is recognized as an extrinsic attribute that signals quality (Goncalves, 2008).

A package's colour is therefore a vital marketing tool that potentially influences customer product choice decisions because it can stimulate desire and subsequently enhance the buying power of the product (Funk & Ndubisi, 2006). A study conducted by Akcay (2013) shows that German customers think that colour is an essential attribute that influences their product buying decisions. Overall, 68 percent of the customers are of the view that colour is a major influencer when deciding to purchase a product.

Akcay, Sable, and Dalgin (2012) also stated that colour is a powerful weapon that can be used to build brand image, influence buying decision process and ultimately, change customers' moods. The authors concluded that colour is more essential for young adults than the aged, and more importantly, to young girls than boys with regard to colour preference. In addition, for young adult customers colour choice seems to be critical for value-expressive products as opposed to utilitarian products.

Furthermore, Grossman and Wisenblit (1999) argued that buyers study colour associations which impacts on their preference for certain colours of products in some product categories. Past research suggests that customers' colour preference, attitudes towards colour, attractiveness of the colour and normative colour positively influence product choice. The results of the research further indicate that customers desire to buy products designed with the

colour of their preference, consider attractive and acceptable to those who have influence on their behaviour, and ultimately develop a positive attitude towards them (Funk & Ndubisi, 2006). It has also been emphasized that using colour as a cue on the package can reinforce favourable association when it is uniquely linked to a particular brand (Grossman & Wisenblit, 1999).

In addition, it has been highlighted that colour influences customer's perceptions of food taste (Koch & Koch, 2003) and flavour (Garber, Hyatt, & Starr, 2000b). Colours can also create a positive image and transmit information about the product which can produce a unique selling proposition (Mutsikiwa & Marumbwa, 2013).

Grossman and Wisenblit (1999) also stated that people in different cultures associate different meanings to colours and form colour preference pertaining to the culture which they belong to. However, Madden, Hewett, and Roth (2000) are of the view that across the world, customers demonstrate some degree of similarities in colour preference and associations. For example, colours such as blue, green and white have a similar meaning and are preferred in many cultures in several countries in the world.

2.6.1.2 Packaging Photography

Visual imagery is another vital element of packaging as it alters customers' attitudes towards the product (Underwood & Klein, 2002). It has been noted that a picture on the package plays a strategic role in product differentiation and has impact on customers' consciousness (Silayoi & Speece, 2007). This is because it is a more vivid than words and can induce instant recall and recognition (Underwood & Klein, 2002). The author further stated that a product's picture on the package performs informational functions and also reflects the intrinsic quality of the product and ultimately, influence customer's beliefs about the product. Past research also demonstrates that packaging illustration showing a product picture was positioned as upper class and safe and guaranteed products. On the other hand, packaging showing a photograph of people was used to indicate accessible products for customers who were more price sensitive (Ampuero & Villa, 2006).

Underwood *et al.* (2001) also pointed out that a picture on a package transmits useful message to customers in certain buying situations. First, this may occur in product categories where a customer's knowledge in terms of similarities in price and brand quality is low. In this case,

the picture on the package may be used as an informational element that can help customers to compare and distinguish among similar brands. Secondly, for those products whose perceived benefits or attributes can be positively transmitted by a picture, a well-executed product picture can evoke recall and favourable associations with the brand. It has been suggested that customers can better recall pictorial elements found on the left part of the product container (Rettie & Brewer, 2000).

Underwood and Klein (2002) are also of the view that a picture on the package can grab attention and convey product benefits and expose the customer to an enjoyable aesthetic experience and ultimately create a positive image of the product.

It has been highlighted that customers can instantly identify the taste, smell and sound of a product while looking at the picture on the packaging (Underwood *et al.*, 2001). Previous research reports that a package's picture significantly influences customers' beliefs about the taste of the product. Thus, customers perceive that the product will taste better when a package contains a picture of the product than when the package has no pictorial elements. The results of the study further reveal that packages designed with pictures were perceived to be of high quality and well-preferred (Underwood & Klein, 2002).

A research conducted by Wells, Fairley, and Armstrong (2007) also shows that 43 percent of customers claimed to use package photography to judge the quality of the product. The results further indicate that customers who made unplanned purchases relied heavily on the extrinsic elements of packaging, particularly the package photograph, to aid their purchases.

Furthermore, a picture on the medicinal product's package depicting a part of a body that the medicine can cure or how the drug can be administered conveys vital information to customers on what the medicine stands for and where it works (European Medicine Agency, 2011). Thus, the visual packaging image can provide information to customers about the content of the core product (Silayoi & Speece, 2007). Empirical evidence suggests that product image on the package can create instant recognition of new brands and also transfer experiential value to customers. This indicates that such brands can be considered in the consideration set (Underwood *et al.*, 2001).

2.6.1.3 Packaging Shape and Size

Size and shape also emerges as another dimension of packaging. Though product labels usually convey volume information to customers (Folkes & Matta, 2004), it appears that customers use shape and size of the package as a simplifying visual heuristic to make volume decisions (Raghubir & Krishna, 1999).

Packages are made up of different sizes and shapes and these complicate the ability of end-users to determine the actual quantity of the product in the package (Folkes & Matta, 2004). Nevertheless, customers consider long containers to be bigger, even when they are exposed to and familiar with these containers (Silayoi & Speece, 2007). Past research indicates that container shape has a positive influence on volume judgements, actual consumption and brand choice (Raghubir & Krishna, 1999). Thus, customers prefer elongated packages because they are perceived to be larger and actual consumption is likely to be greater than shorter containers. In similar research, the results indicate that container shapes have an influence on the volume judgement over and above height, and that tall bodies contribute more to overall volume appearance than shorter packages (Garber, Hyatt, & Boya, 2009). However, a study conducted by Folkes and Matta (2004) shows that shoppers perceived shorter packages to contain greater volume suggesting that wider containers are perceived to be larger. Furthermore, the study revealed that product packages with shapes that are perceived to grab more attention are also considered to contain larger amount of a product compared to same-sized containers that grab less attention.

Garber *et al.* (2009) suggested that package shape can be utilized for marketing mix purposes to gain attention, transfer a unique identity and communicate positive brand-specific meaning. Ambrose and Harris (2011) pointed out that developing a unique package shape offers a platform for distinguishing the product from similar products, aiding brand recall and ultimately increasing sales.

Warlop, Ratneshwar, and Osselaer (2005) also confirmed that distinctive packaging shapes and size serves as a cue which customers can accurately base their quality decisions and also retrieve past quality experiences from their memory. This is particularly true when a customer lacks adequate product knowledge, or when a person's product experience is ambiguous. The authors further emphasized that, packaging size and shape assists customers to learn and recall

differences in the quality of similar brands, which provides a platform for creating the brand equity of superior brands.

Natarajan *et al.* (2015) pointed out that unique shapes enhance memorability and recall of packages. The authors are also of the view that psychologists have made several discoveries about shapes and forms which have an effect on package design. For example, the desire for geometric forms is higher than irregular shapes which have the tendency to strain the eye. A rectangular shape is more attractive relative to square which tends to be rather solid and lacks dynamism. A study also shows that geometrically simple shapes seem to be larger than geometrically complex shapes (Garber *et al.*, 2009). Underwood (2003) emphasized that cosmetic products like perfumes and cologne with unique container shapes transmit experiential and/or symbolic benefit to customers. Some enduring brands like Coca-Cola are described as iconic brands and have built brand equity through their distinctive packaging shape design.

2.6.1.4 Packaging Typography

Typography is one of the key elements of packaging since it provides a platform through which the brand name and product information are communicated (Hill, 2012). The ease and clarity with which the text communicates, determine the ability of the packaging to connect to the end-user. Generally, poor typography creates confusion and customers may switch to another product or brand. Besides, the type size can attract customer's attention to the brand name, highlighting the premium quality of the product and as a result creates visual differentiation (Ambrose & Harris, 2011).

A previous study indicates that roughly 72 percent of customers felt that packaging typography influences the legibility of the instructions on the package, whilst 42 percent were of the view that font size grabs attention to the brand (Vysas, 2015). It is argued that the breadth, depth and flexibility of typography suggests its importance in building a brand identity and also highlights its critical role in determining the ability of packaging to successfully communicate. Additionally, typography is recognized as a vital element for positioning a brand in the market (Ambrose & Harris, 2011). Past research also confirms that typography is a useful tool for positioning orange juice as affordable and an upper-class product (Ampuero & Vila, 2006).

Moreover, a study indicates that easy-to-reach products of an average price were linked with sans serif typefaces and in contrast, elegant products were associated with large, bold, upper case and roman fonts with bigger characteristics. Typography also transmits information on product attributes and benefits to buyers (Hill, 2012). It is suggested that different typefaces and typestyles express brand personality. For example, some typefaces appear to be stern and conservative, while others are more relaxed and jovial. Therefore, typefaces can be used to create the desired attributes and features of the brand as a means to strengthen the brand message. The use of typeface personality is an essential means to establish the perceived attributes of the brand personality (Ambrose & Harris, 2011).

2.6.2 Informational Elements

The informational cues of packaging considered in this research are packaging material and product information.

2.6.2.1 Product Information

Product information plays a key role in dispensing pharmaceutical products in healthcare delivery. End-users of herbal medicines sold at the over-the-counter require readily accessible and reliable information to ensure rational and safe use of the drugs (Raynor *et al.*, 2015). It is recommended that the information provided on the package must be legible and easily assimilated to avert any risks of confusion and medical errors (European Medicine Agency, 2011). Product information aids patients and other users to understand the content of the drug. The label, together with the package leaflet or insert, is the key source of information for patients relating to the correct use of the medicinal product, potential drug adverse reactions and interactions, storage conditions as well as the expiry date. With regard to non-prescription drugs, the printed information may constitute the only pharmaceutical instructions that the patient receives (WHO, 2002a).

Empirical evidence demonstrates that customers depend largely on printed information on the package when deciding on OTC drug purchases rather than prescription medicines (Kim & King, 2009). Additionally, a study indicates that 40.2% of customers relied on printed information when making a decision to purchase OTC medicines whilst 30.5%, 9.4%, 7%, 4.7%, 2.3% and 5.9% depended on family and friends, pharmacists, medical doctors, radio/TV advertisements, journals and books and the others respectively (Sansgiry *et al.*, 2001).

It is also emphasized that written information on the package facilitates the easy recognition of the medicinal product (Lalor, 2011). Dransfield, Zamora, and Bayle (1998) pointed out that product information has a critical influence on perceptions of quality and preference. Past research also reveals that product information is used to infer the quality of the product (Silayoi & Speece, 2007). Indeed, printed information on the package has the potential to reduce risks inherent in purchases, signals quality and directly aids customers in making buying decisions. This becomes possible as written information on the package conveys search, experience and credence attributes of the product (Dimara & Skuras, 2005).

It is argued that when customers are faced with array of product choices (Wright, 1997), customers search for a message that can reassure them that their purchases will meet their expectations (Dimara & Skuras, 2005). Written information on the package provides such assurance to customers by supporting the advertising claims (Wright, 1997), establish the brand's identity and enhance name recognition (Mahajan, Vaisha, Gupta, & Dholle, 2013). Product information is of great importance in constructing an image that customers may recall when making brand choice (Dimara & Skuras, 2005).

Silayoi and Speece (2007) are of the view that the package layout is essential for presenting information. In their view, the label can be a source of confusion by conveying large volumes of information or inaccurate and misleading messages. In most cases, in order to maximize the message on the product package, designers use too small text sizes which impair readability. This can adversely affect the quality of the decision-making process and customers' rights to safety and information. Underwood and Ozanne (1998) pointed out that when the written information on the package does not communicate well, customers' frustration increases, and most of them do brand switching and discontinue the use of the brand.

2.6.2.2 Packaging Material

Packaging materials must adequately provide stability and shelf-life to drugs to preserve the product's identity, strength, quality and prevent contamination (Saha, 2011). Smith and Taylor (2002) argued that packaging materials influence perceptions of product quality. Silayoi and Speece (2007) also pointed out that the technology image appears to be a peculiar element compared to the other informational attributes because it communicates messages that are

usually linked to a customer`s lifestyle. Thus, current trends in packaging technology have resulted from changes in customer lifestyle and an increase in product innovations.

Furthermore, it has been recommended that the information conveyed through the technology of package development must fully satisfy the customer criteria, and more importantly, must be presented visually as one of the marketing communications cues. Many functional package features, such as the lightweight plastic bottles, aseptic packaging, child-proof seals and no drip sprouts, and zip-lock bags have improved the functional and symbolic utility of packaging. The symbolism relates to role associations and convenience provided by the product packaging (Underwood, 2003). The functional utility, on the other hand, is associated with superior performance, ease of disposal, protection and enhanced security. For many non-durable customer goods, the added functionality through innovations in packaging can improve the brand`s identity and provides a critical source of differentiation in a particular product category. For example, blister packaging conveys user functionality with respect to convenience, and child and tamper resistance. Moreover, it has the potential to provide quality protection to the environment in addition to aesthetic presentation, information, and identification (Pilchik, 2000; Chirag *et al.*, 2012).

Silayoi and Speece (2007) highlighted that innovations in packaging have become increasingly important because customers who are busy and convenience-oriented pay more attention to the convenience features conveyed by the packaging technology. An empirical evidence also suggests that packaging innovations can increase a customer`s likelihood of buying a product (*ibid*). In similar research, the participants felt that packaging innovation has an effect on convenience and the actual product (Silayoi & Speece, 2004).

2.7 Brands and Products

Designing and producing a product to meet the desires of customers is the heart of marketing. A product itself is regarded as an essential aspect of brand equity. This is because it creates an impression about the brand and is what the firm conveys to customers with regard to the brand in its marketing communications (Keller, 2013).

In a broader perspective, products relate to physical goods, services, ideas, persons and places that offer both intangible and tangible benefits desired by individuals and organizations for

which something valuable is exchanged for them (Brassington & Pettit, 2003). Alternatively, Kotler *et al.* (2002) describe a product as anything brought to the marketplace for acquisition, attention, consumption or use that satisfies a need. According to the authors, customers tend to perceive products as a set of complex bundles of benefits that meet their wants or needs.

In contrast, the word *brand* was obtained from *Old Norse* language “brandr”, meaning “to burn” which provided a means of identifying domestic animals (Keller, 2013). Kotler and Keller (2009) defined brand as anything that is used to identify and distinguish products of a firm or group of firms from those of competitors (Kotler & Keller, 2009). It has been suggested that the meaning of a brand extends beyond a product as it possesses other attributes that distinguish it from a product. These attributes could be tangible and rational which may relate to the product functionality or more symbolic, emotional, and intangible which represent the meaning associated with the brand (Keller, 2013). In addition, Kotler and Keller (2009) noted that many practitioners are of the view that a brand conveys meaning over and above just designing a logo, symbol and generating a name for a new product. A brand therefore represents something that has substantially gained some degree of awareness, prominence and reputation in the market place.

In addition, de Chernatony, McDonald, and Wallace (2011:18) pointed out that the major distinction between a brand and product is the “added values” which indicate the intangible or extra attributes perceived by customers which are embodied in the product. In their view, a brand consists of emotional and functional benefits which give companies power to assure customers about the peculiar and delightful exposure they will receive from the brand. A brand therefore transmits a bundle of benefits to customers that satisfy their rational and emotional needs.

2.7.1 Branding in the Drug Industry

The concept of branding has lasted for many years as a tool to differentiate a firm’s offering from competing products by creating an image that can easily be recognized and remembered (Smith, 2007). Over the years, firms that produced traditional customer goods have sustained themselves in the market by branding their products (Ladha, 2007). It has been suggested that, one of the possible ways for companies to survive and continuously grow in the marketplace

is to create and carefully manage the value of their products and services. Firms can create this value through their product brands (Dlačić & Kezman, 2007).

However, traditionally, the sources of value creation in the drug industry as whole have been continuous research and development and aggressive sales efforts (Blackett & Harrison, 2001). The drug industry has been typically dominated by science and its success has been largely dependent on the invention of superior products beneficial to mankind (Blackett & Robins, 2001a). Hence, the industry had focused on products rather than brands. They serve as a major source of competitive strength and huge investments were made to create them (Moss, 2001; Sanyal, Datta, & Banerjee, 2013).

Since a firm`s products can easily be reproduced, products are therefore not unique and they earn a rate of returns on investment that is commensurate with those of competitors. Dickov and Igić (2013) suggested that brand equity was virtually non-existent in the pharmaceutical industry since the value of a product was indicated by its therapeutic value and the duration of the patent expiration.

Coupled with this, the development of the discipline of branding in the drug industry has been slow and has not gained the strategic attention relative to their counterparts in the traditional customer goods industry (Shuiling & Moss, 2003). The authors further argued that the critical success factors in the industry until recently, used to be aggressive research and development, strong patent protection and strong sales agents. Thus, the industry has been well-noted for being product, research and development driven but not market-oriented.

However, Moss and Shuiling (2004) emphasise that the industry is not growing as it used to in the past, partly, because the traditional success factors are less effective in today`s competitive marketing environment. Moreover, differences in product performance are getting closer and generic competition is intensifying and this constitutes a major threat to the industry.

Firms in the industry are now searching for new ways to consolidate themselves in the market. Over the years, several mergers and acquisition were undertaken with the view to optimising productivity from research and development to gain economies of scale within the industry (Dickov & Igić, 2013).

Ladha (2007) is of the view that due to the harsh competitive nature of the industry, the idea of branding would be more significant and of strategic importance to the industry. However, there are several factors that constrain branding and marketing practices in the pharmaceutical industry compared to the traditional customer packaged goods industry. Blackett and Robins (2001a) emphasized that brands thrive in a marketplace where direct and open relationships exist, as well as where availability of a product and choice is unrestricted. Few of these factors, however, really exist within the ethical drug industry. In the ethical drug industry, the relationship between the buyer and the seller is heavily mediated, while regulatory bodies impose sanctions and restrict the availability of a product and direct communication about a product's attributes to customers (Blackett & Robins, 2001a).

According to Moss and Schuiling (2004), the drug market is a highly regulated market globally and, unlike other customer products, the brand name is not transferable to a new product when the patent expires. In view of this, it has been concluded that it is not worth investing in pharmaceutical brands due to their short life cycle. Another major problem lies in the constant cycle of product innovations which gives rise to the rapid launching of new brands at the cost of older brands. In spite of this, the authors further emphasized that drug companies have not worked proactively to determine and communicate the brand identity of their products to customers in order to make their brands distinct from competitors. Moreover, it is argued that there is lack of brand focus in the ethical drug industry (Shuiling & Moss, 2003).

Nonetheless, the industry possesses some well-established and strong brands of which a large number enjoy little or no patent protection (Blackett & Robins, 2001b). Furthermore, the OTC market which operates in a similar fashion as the traditional customer goods industry has embraced brand logic and its practices as prevailing in the customer packaged goods industry (Dickov & Igić, 2013; Blackett & Harrison, 2001). Most functional and alternative medicines are also managed like traditional FMCGs as they are accessible, and the power of choice largely depends on the customer (Blackett & Robins, 2001a).

Dickov and Igić (2013) asserts that many successful OTC brands, such as Aspirin and Strepsils are recognized as international brands and are comparable to iconic brands like Coca Cola in the customer retail markets. Recognizing the critical role of branding in the OTC market, many ethical pharmaceutical companies are now producing and investing in non-prescription drugs

with a view to creating strong brands as they represent new a source of business value (Blackett & Robins, 2001a).

2.7.2 Branding Strategies in the Drug Industry

Branding is recognized as an important aspect in the product strategy that requires huge long term investment. Keller (2003) highlighted that branding is concerned with building mental structures to enable buyers to organize their product knowledge in a manner that is consistent with their buying decisions to enable firms gain financial value.

Shuiling and Moss (2003) highlighted that competition in the pharmaceutical market has been very keen, coupled with the fact that, after patent expiration, the health care practitioners may opt for generics which may speed up the decline of the sale of branded products. In their view, pharmaceutical companies can manage themselves differently in the market by building strong brands as they create new competitive advantage. Branding could also assist to optimize return on investment for new products whilst insulating the brands against the irresistible increase in generics, by building brand loyalty (Ladha, 2007; Shuiling & Moss, 2003). It has been noted that the basic concepts and procedures for branding pharmaceuticals are just similar to any customer goods. However, the way in which pharmaceuticals are regulated in terms of marketing and sale poses a challenge to drug companies to recognize branding strategies and practices crucial to the health care industry (Ladha, 2007).

Although some drug companies have been investing to create brands in recent years, brands in the pharmaceutical industry are not well described, built and managed (Shuiling & Moss, 2003). According to the authors, a brand consists of intangible and tangible set of benefits stored in customers` minds. The choice of these benefits requires the complete analysis of customers, market, other environmental factors and competition. This will help to determine the right target group to create a distinctive brand identity that will distinguish the brand so as to gain competitive advantage in the market (*ibid*).

Blackett and Harrison (2001) highlighted that brand positioning is also a vital strategy for effective branding. Positioning involves an analytical process that defines the competitive space that the brand can occupy, and subsequently determining how branding activities can

help fill this space. Thus, the brand must have defining features considered to be relevant, unique and attractive to customers. This requires customer insight, combined with product benefits as well as resources to make the brand position distinctive and generally recognized. More importantly, the perception created by the brand must be demonstrated in the product's actual characteristics (Ladha, 2005). Indeed, the most powerful brands occupy positions in the customer's memory that are defensible and unique (Blackett & Harrison, 2001).

Furthermore, pharmaceutical companies can build strong brands by combining the brand attributes, such as packaging, symbols, characters, slogans, logos and names, to identify and differentiate the products from others (Keller, 2013; Ladha, 2005). Keller (2013) is of the view that the companies must opt for elements that are transferable, meaningful, memorable, likable, protectable and adaptable in order to build and maintain brand equity.

Another important aspect of branding for pharmaceutical companies is the choice of brand name for the medicinal product (Ladha, 2005). The brand name must be easy to pronounce, short, memorable, unique and difficult to imitate. It can also be linked to the corporate brand name as an umbrella or full name to prolong the brand's lifespan which is usually short. It is suggested that the corporate brand names must be clear and also have positive meaning in the minds of customers. This is often more effective than product brand name especially for ethical drugs (Shuiling & Moss, 2003; Ladha, 2005).

Kotler (2003) is, however, of the view that building a branded product does not merely involve creating a name, logo, colours, symbol or tagline. Essentially, it involves a marketer making a promise to consistently transmit tangible benefits, services and features to a customer. Branding becomes successful only when companies deliver their promises made to their customers to encourage them to respond favourably to the brand (De Chernatony *et al.*, 2011). According to Kotler (2003), brand bonding occurs only when buyers experience the organization as meeting the benefits promised to the customers. The author further suggested that advertising also has the potential to create a brand name recognition, some degree of mental knowledge about the brand and, in effect, to elicit brand preference.

According to Ladha (2005), a key aspect of branding that is usually ignored by health care companies is emotional branding. This involves building strong emotional brand attachment with customers and matching the brand's personality with that of the customers' self-images

(Malar, Krohmer, Hoyer, & Nyffenegger, 2011). A brand has some personality traits and these can be aligned with the aspirations of the target group. The feelings elicited by a brand can provide a platform for positioning the brand in the market (Blackett & Harrison, 2001).

Moss and Schuiling (2004) also suggested that drug companies can develop brands by first identifying the brand identity through in-depth research, communicating this in a coherent manner to target audience and consistently monitoring and managing the brand's image. Other pertinent elements for branding relates to communicating the product's differentiation from its competing products, pricing it competitively and highlighting its performance to end-users (Ladha, 2005).

2.8 Definition of Brand Equity

In a competitive business environment, practitioners and researchers have recognized that the most enduring and invaluable assets of a firm are the names of brands linked to its market offerings due to their strategic role in the success of the business. Fundamentally, the essence of branding is to endow products with strong brand equity. Nevertheless, brands convey different levels of value and power to products in the market place (Keller, 2013).

It has been highlighted that positive brand equity conveys numerous advantages to a company, such as, greater loyalty, resilience to competitive attacks and marketing crises, higher margins and licensing opportunities which generate sustainable cash flow (Farquhar, 1989; Keller, 2013). Furthermore, it is argued that competitors can reproduce the production process and layout of a factory but it is not simple to copy brands because they are a deeply held set of intangible and tangible benefits in customers' minds (Keller, 2013; Shuiling & Moss, 2003). Obviously, the most invaluable property a company possess is the brand it has built over time (Keller, 2013).

However, since the theory of brand equity was put forward, it has been conceptualized and operationalised for various purposes in different ways. This has led to different methods for conceptualizing and measuring the construct in the marketing literature (Christodoulides & de Chernatony, 2010). The authors further suggested that, though there is large amount of literature on brand equity, it is substantially inconclusive and fragmented.

It has been highlighted that brand equity relates to extra value conferred to a product by branding (Farquhar, 1989). In the author's view, the additional value a physical product gains from a branding extends beyond the product's performance. Though there is no generally agreed conceptualization of brand equity, a review of the literature indicates that many authors, at least, agree to the definition proposed by Farquhar (1989). For example, Keller (2013) defined brand equity as marketing effects exclusively attributed to the name of the brand. The author further suggested that brand equity occurs due to differences in outcomes emanating from selling branded product compared to analogous generic version. The existence of differences in outcomes is as result of the value accrued to a product arising from the previous brand's marketing activities.

Alternatively, Aaker (1991) proposed that brand equity consists of assets and liabilities that are connected to the name of a brand which enhance or diminish the value of a marketing offering to a company and its clients. Here, the firm is not the only recipient of the brand value but also its customers. For Aaker, brand equity can add or subtract value from the product. Brands can therefore create positive or negative impressions about a product due to customers' exposure to the branded product over time (Kapferer, 2012). Hence, a brand's equity attached to a brand, its symbol and/or name can either be positive or negative. Negative brand equity indicates that the brand has negligible effect on the product compared with unbranded and private label brands (Trott & Sople, 2016). Thus, brand equity can increase or reduce the gains provided by branding to a firm and its customers (Campbell, 2002).

2.8.1 Perspectives of Brand Equity

Traditionally, the concept of brand equity has been conceptualized and measured in two major different perspectives in the marketing literature. Christodoulides and de Chernatony (2010) noted that some researchers have conceptualized and evaluated the value of a brand based on a financial perspective (Simon & Sullivan, 1993; Farquhar, 1989) whilst others have approached brand equity on basis of customer perspective (Keller, 1993; Keller & Lehmann, 2004; Aaker, 1996; Pitta & Katsanis, 1995). The financial approach to brand equity describes the value that a brand brings to the company and is commonly referred to as firm-based brand equity (FBBE).

In contrast, customer-based approach to brand equity discusses the relationship customers have with the brand and relies on customer perceptions (Kapferer, 2008; Christodoulides & de Chernatony, 2010). However, the worth of a brand is engendered by customers' response to a brand name. Essentially, the outcome of customer perceptions of brand equity is the financial value contributed by a brand to a firm because it enhances profitability and market share (Lassar, Mittal, & Sharma, 1995; Christodoulides & de Chernatony 2010). Basically, brand equity results from immense confidence that customers have on a particular brand compared to its competing brands (Lassar *et al.*, 1995).

Kapferer (2008) attempted to relate the dimensions of CBBE to brand value via brand strength (CBBE outcomes like premium price and market leadership). The author defined brand value as net present value of a firm's future cash flows due to branding after meeting the interest on capital used for production, cost of running the business and marketing. Thus, the value of a brand is a measure of earnings that the brand assets can generate through the mediating role of brand strength. To the author, it is important for a brand to deliver cash value if it really has positive equity.

However, a third approach to brand equity which combines customer perceptions and FBBE has also been documented in the brand literature (Motameni & Shahrokhi, 1998; Kim, Kim, & An, 2003). Consequently, brand equity has been conceptualised and evaluated in three different ways in the marketing literature, that is, financial-based, customer-based and hybrid-based measures as exhibited in the Figure 2.2 below.

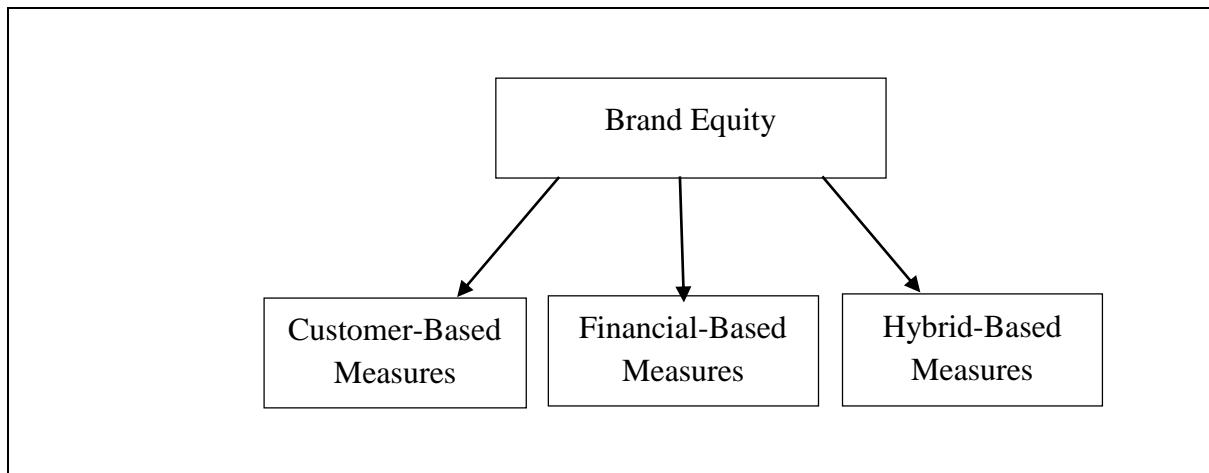


Figure 2. 2: Approaches of Brand Equity Measures

Source: Developed from Extant Literature

2.8.2 Customer – Based Brand Equity

Customer-mind set measures of brand equity include everything that relates to the brand which resides in the customers` memory (e.g. perceptions, images, experiences, feelings, thoughts, attitudes and beliefs (Keller & Lehmann, 2003). Keller (2013) suggested that customer mind set measures can be summarized into five important elements which include; brand awareness, associations, attachments, attitudes, and activity. These measures of customer- based brand equity have led to much of academic research (Keller, 1993; Yoo *et al.*, 2000; Aaker, 1996; Pappu *et al.*, 2005; Asif *et al.*, 2016; Buil *et al.*, 2013) and industry studies (Young and Rubicam Asset Valuator, Research International`s Equity Engine, Millward Brown Brandz) (Ailawadi, Lehmann, & Neslin, 2003).

The conceptualization of CBBE is built on cognitive psychology and focuses on buyers` memory-based brand associations (Keller, 1993; Aaker, 1991). For example, Keller (1993:2) discusses CBBE based on customer cognitive psychology and described it as “the differential effect of brand knowledge on customer response to the marketing of the brand”. The focus of this definition is on the individual buyer and the customer responses to the marketing activity of the product. Alternatively, Aaker (1991; 1996) identified four elements of brand equity that reflect customer perception and reaction to the brand; brand loyalty, brand association, perceived quality and brand awareness.

Cobb-Walgren *et al.* (1995) highlighted that researchers have operationalized CBBE on customer-buying behaviour (Kamakura & Russell, 1993) or customer perceptions (Pappu *et al.*, 2005; Keller, 1993) or both (Aaker, 1991; 1996; Yoo *et al.*, 2000; Yoo & Donthu, 2002). Similarly, Lassar *et al.* (1995:12) defined CBBE as “the enhancement in the perceived utility and desirability a brand name confers on a product”. In their view, brand equity is the customers` judgement of the superiority or excellence of a market offering due to the brand name compared to similar unbranded product. The authors suggested that social image, performance, trustworthiness, attachment/identification and value/price as the customer-mind set measures of brand equity.

Yoo *et al.* (2000:196) also proposed that brand equity is the difference in customer choice between a branded and an identical generic version. In their view, customer- based brand equity is seen as an extra value conveyed by the brand name of a product compared with an identical product without a brand name. Customer-based brand equity was operationalized as the differences in customer choice with respect to preference for or intention to buy a branded product in comparison with its generic version. The authors employed brand loyalty, perceived quality, brand awareness with strong associations of the dimensionality of Aaker`s (1996) model to measure brand equity. The authors further extended Aaker`s (1991; 1996) model by including another construct, known as overall brand equity. The overall brand equity measures how the individual dimensions of brand equity influence or contribute to enhance brand equity. The authors concluded that the value of a brand can be developed, managed and increased by fortifying the brand equity elements. Consequently, high brand equity suggests that customers have strong associations, perceived the brand to be of high quality and are loyal to the brand.

Dlaćić and Kezman (2014) also proposed perceptions of quality, brand awareness and trust as the brand equity dimensions when investigating how customer loyalty is affected by the brand equity of OTC orthodox pain killer drugs in the pharmaceutical market. Furthermore, Kapferer (2008) discusses CBBE along these elements: brand consumption, evoked set and brand awareness.

However, Erdem and Swait (1998) studied CBBE from a different viewpoint relying on signalling theory from information economics, explicitly focusing on the imperfect and asymmetrical information structure of the market. In this perspective, CBBE is defined as “the

value of a brand signal to the customers” (p.132). The authors suggested that clarity, content and credibility of a brand are the determinants of CBBE and emphasized that credibility is the most key dimension of CBBE. These dimensions of brand equity as a signal of a product’s position can enhance perceptions of quality, reduce information costs and customer’s perceptions of risk. These effects, in turn, can enhance CBBE.

Although, the dominant research approach to CBBE is grounded in cognitive psychology, the two perspectives are considered to be complementary (Christodoulides & de Chernatony, 2010; Erdem & Swait, 1998). Hence, Christodoulides and de Chernatony (2010:9) defined CBBE that encompasses the basic premises of both viewpoints, thus, “a set of perceptions, attitudes, knowledge, and behaviours on the part of customers that results in increased utility and allows a brand to earn greater volume or greater margins than it could without the brand name.”

Ailawadi *et al.* (2003) are of the view that perceptual measures of brand equity are significant in the sense that they offer numerous sources of brand equity, have good diagnostic power, and can serve as a tool to forecast the health of the brand. Customer-based brand equity also provides useful information to establish and also to evaluate the effectiveness of strategic marketing decisions as well as the tactical decisions of the company (Ailawadi *et al.*, 2003; Keller, 1993). However, it is argued that this technique is typically based on customer surveys of preferences, attitudes, and intentions to buy. As result, the major drawback of CBBE approach is that it does not provide for any objective measure for transforming customer perceptions into reliable estimates of financial value for a company (Ailawadi *et al.*, 2003; Simon & Sullivan, 1993).

2.8.3 Financial Perspective of Brand Equity

The financial valuation of brand equity focuses on revenue generated by a brand, and such a measure considers a brand as a financial asset (Ailawadi *et al.*, 2003; Simon & Sullivan, 1993). As a result, brands are viewed as assets like plant and equipment that can be sold and bought. From a company’s perspective, the value of a brand relates to the price that a brand can be traded in the financial market (Keller & Lehmann, 2006).

Keller (1993) emphasized that financial-based measures of brand equity has gained popularity due of its role in accounting, merger and acquisition or divestiture purposes. Aaker (1991) discusses the sources of financial-based brand equity and suggested brand loyalty, brand

quality, brand association, brand awareness and proprietary assets like patents and channel relationships. Simon and Sullivan (1993) present numerous techniques that were employed to estimate the financial-based brand and their relative weaknesses. The first method is related to price premium generated by a product and is used as a proxy of elasticity of demand and/or a measure of brand loyalty. The authors are of the view that this technique relies on a single element to evaluate the FBBE and may result in biased estimates.

An alternative method is brand replacement cost, that is, the expenditure incurred to launch a product under a new brand name. This technique has also been criticised on the grounds that it provides only one source of financial valuation of a brand.

However, the authors employed financial-market value measure to assess a company's perspective to brand equity. In their view, brand equity relates to net additional cash value that is generated by branded product above the unbranded identical version. By this methodology, the cash value of a firm's brand is obtained by subtracting the value of the brand from the company's other property. Here, the stock price is used as a measure of the value of a brand of the firm.

Ailawadi *et al.* (2003) pointed out the disadvantage of using stock market price to assess the future potential of a brand is that it is highly volatile and does not provide immediate importance to marketing because many factors other than marketing activities can affect it. Keller (1993) also suggested that the financial measure of brand equity is less important unless the underlying value of the brand can be built or practitioners has the expertise to harness the value by working out meaningful brand strategies.

2.8.4 Hybrid Approach to Brand Equity

Kim *et al.* (2003) highlighted that both customer perceptions and financial perspectives to brand equity are combined to allow for a comprehensive perspective to address the inefficiencies which may occur when just one of the two research streams is used. It has been highlighted that the financial-based measures of brand equity offer a broad approach only and do not permit managers to identify the sources of brand equity (Srinivasan *et al.*, 2005).

In addition, Marketing Science Institute (2002) cited by Srinivasan, Park, and Chang (2005) stated that CBBE is used to evaluate products or services rather than the financial value of these

utilities. This measure is considered less important to management given the increasing demand for better results and performance in marketing. Hence, Motameni and Shahrokhi (1998) proposed a global measure of brand equity valuation which consists of both financial and customer perspectives to brand equity. The authors are of the view that the combined approach offers a more accurate measurement of brand equity and its sources.

Furthermore, Srinivasan *et al.* (2005: 1446) combined customer survey and financial-based measures and defined brand equity as “the incremental contribution per year obtained by the brand in comparison with the underlying product (or service) with no brand-building efforts.” The authors further suggested non-attribute preference, attribute perception and brand awareness as the key dimensions of brand equity.

Motameni and Shahrokhi (1998) emphasized that the foundation of all the perspectives of brand equity lies on the dimensionality of Aaker’s brand equity framework. Similarly, Ailawadi *et al.* (2003) commented that neither of the two perspectives of brand equity possesses all the features that are ideal to measure brand equity that marketers` desire. In view of this, the authors proposed revenue premium that combines strong conceptual grounding, high external validity, ease of calculation and completeness.

Parallel to the academic research on brand equity measurement, an industry brand analyst known as Interbrand Group has developed a brand strength model along these factors: understanding, protection, commitment, clarity, responsiveness, relevance, authenticity, differentiation, presence and consistency. These factors are then combined with some in-depth financial model of the business to determine the brand`s present and future ability to create economic value for the shareholders (Rocha, 2014). However, Pitta and Katsanis (1995) highlighted that customer perceptions of brand equity are appropriate for marketers to study the concept of brand equity. Therefore, the current study relied on customers` perceptions to evaluate the potential role of packaging in supporting brand equity of herbal medicines in the OTC medicine market.

2.8.5 Empirical Measures of Brand Equity

According to Kamakura and Russell (1993), brand equity is seen as the value of the brand to the firm and its customers. In their view, brand equity has been conceptualized in many ways

and hence, there is a lack of consensus about how brand equity is measured. Table 2.3 provides some earlier authors' work on measures of brand equity and the context of their studies in the brand management literature. It could be observed from the Table 2.3 that the most frequently used brand equity dimensions are those proposed by Aaker (1991; 1996) and Keller (1993) and have also been used in many research contexts.

Table 2. 3: Empirical Studies on Brand Equity Measures

Author (s) and Year	Research Area	Dimensions
Atilgan, Aksoy, and Akinci (2005)	Beverage Industry	Brand loyalty, Perceived quality, Brand awareness, Brand associations
Mohan and Sequeira (2016)	Household care, Food & Beverages, Personal Care	Brand awareness, Brand loyalty, Perceived quality, Brand association
Chi, Yeh, and Yan (2009)	Cellular phone industry	Brand awareness, Perceived quality, Brand loyalty
Buil <i>et al.</i> (2013)	Sportswear, Customer Electronics	Perceived quality, Brand loyalty, Brand awareness, Brand association
Christodoulides, Cadogan, and Veloutsou (2015)	Goods, Services, Internet Brands	Brand awareness, Brand associations, Perceived quality, Brand loyalty
Cobb-Walgren <i>et al.</i> (1995)	Hotel (Services), Goods (Household cleansers)	Brand awareness, Brand associations, Perceived quality
Dlačić and Kezman (2014)	Pharmaceutical market Self-medication Products	Customer loyalty, Brand awareness, Perceived quality, Trust
Gordon, Calantone, and di Benedetto (1993).	Electrical products, Components market (Industrial market)	Brand awareness, Brand associations, Brand loyalty, Perceived quality
Hyun and Kim (2011)	Chain Restaurants Industry	Brand awareness, Brand image, Perceived quality, Brand loyalty
Kim and Kim (2004)	Food Services Industry	Brand awareness, Brand image, Brand loyalty, Perceived quality
Kim, Jin-Sun, and Kim (2008).	Hospitality industry	Brand loyalty, Brand awareness/association, Perceived quality,
Lassar <i>et al.</i> (1995)	Television monitors, Watches	Performance, Social image, Value, Trustworthiness, Attachment
Panchal <i>et al.</i> (2012)	Pharmaceutical Products	Brand awareness, Brand loyalty, Perceived quality

Pappu <i>et al.</i> (2005)	Cars, Television	Brand awareness, Brand loyalty, Perceived quality, Brand association
Pike, Bianchi, Kerr, and Patti (2010)	Tourism destination	Brand salience, Brand image, Brand loyalty, Perceived quality
Jalilvand, Samiei, and Mahdavinia (2011)	Automobile industry	Brand awareness, Brand association, Perceived quality, Brand loyalty
Gil <i>et al.</i> (2007)	Milk, Toothpaste, Olive oil	Perceived quality, Brand awareness, Brand loyalty, Brand association
Tong and Hawley (2009)	Sportswear Industry	Brand awareness, Brand associations, Perceived quality, Brand loyalty
Krishnan and Hartline (2001)	Services (Movie theatres, Hair salons, Pest control, Television)	Brand loyalty, Name awareness, Perceived quality, Brand associations
Washburn and Plank (2002)	Six pairs of products	Perceived quality, brand loyalty, Brand associations, Brand awareness
Yoo <i>et al.</i> 2000	Athletics shoes, Camera films, Colour television sets	Perceived quality, Brand loyalty, Brand awareness/ Brand associations
Netemeyer <i>et al.</i> 2004	10 different products	Perceived value for cost, Perceived quality, Brand uniqueness, Willingness to pay premium price
Ailawadi <i>et al.</i> (2003)	Packaged goods categories	Revenue premium measures
Erdem and Swait (1998)	Jeans, Juice	Clarity, Credibility, Content
Kamakura and Russell (1993)	Powered laundry detergent category	Brand dominance ratio, Intangible value, Perceived value

Source: Compiled by the Researcher

2.8.5 Brand Resonance Model

Building powerful brands has become top priority of many firms as it conveys greater financial value to the firm. Keller (2001; 2013) presented a customer-based brand building model called the Brand Resonance Model, otherwise known as the CBBE framework to aid practitioners to develop healthy brands. The fundamental principle underlying this framework is that the health of a brand resides in the minds of customers. The Brand Resonance Model serves as a useful

guide for assessing a firm`s brand-building efforts, marketing research initiative as well as interpretation, planning and implementing brand strategies.

According to the framework, building a strong brand consists of four logical processes: creating proper brand identity, brand meaning, brand responses, and forging brand relationships with customers. Essentially, building a healthy brand requires: establishing the breadth and depth of brand awareness; creating strong, favourable and unique brand associations; eliciting positive, accessible brand responses; and forging intense, active loyalty. To successfully accomplish all the four logical stages, in turn, demands creating six brand-building blocks: brand salience, brand performance, brand imagery, brand judgements, brand feelings and brand resonance.

To reach the final level involves addressing specific objectives at each stage for both existing and potential customers. The six brand-building blocks are represented by a pyramid, indicating that developing positive brand equity entails getting the brand to the top of the pyramid. The brand-building process is shown in the Figure 2.3 below.

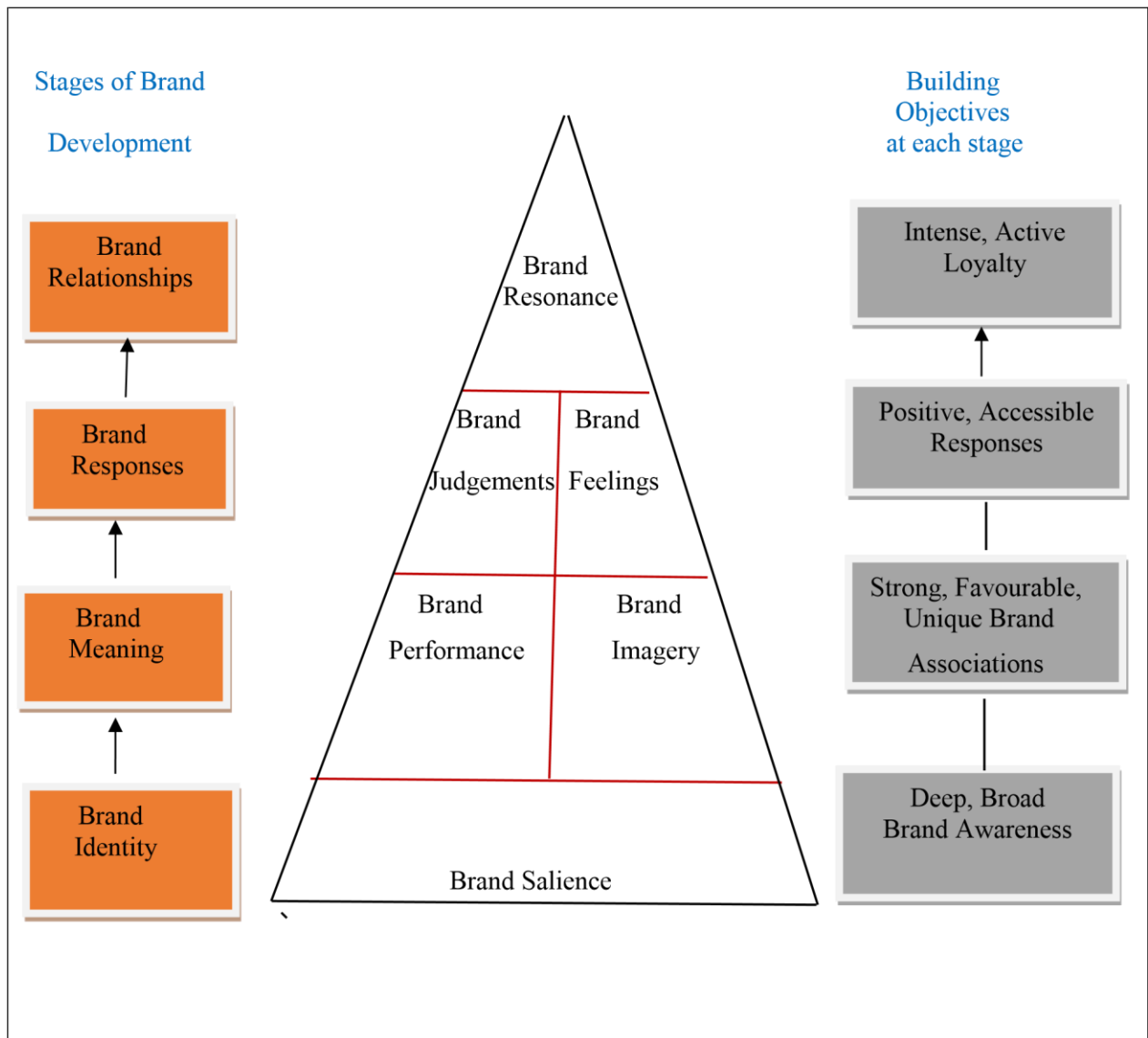


Figure 2. 3: Brand Resonance Pyramid

Source: Keller (2001:7; 2013:108)

2.8.2.1 Brand-Building Blocks

According to Keller (2013) most strong brands are built by reaching the top of both sides of the pyramid. The author suggested four stages of developing strong brands with positive equity. These include;

- **Brand Identity**

According to the model, the initial stage for creating a vibrant brand is to develop appropriate brand identity. This relates to establishing brand salience in the marketplace. Brand salience describes customers' awareness of the brand (Keller, 2001). Brand awareness involves connecting the symbol, brand name and logo to some associations in the mind. Establishing

the breadth and depth of awareness is important for a healthy brand with the view to influencing customers to consider the brand in a different buying setting. Depth of awareness indicates how well customers can recognize or recall the brand whilst the breadth of awareness describes the ability to retrieve the brand from memory in different buying and usage settings.

- **Brand Meaning**

According to the author, brand salience is the foundation of building brand equity, but it does not create substantial value for a brand. For most customers, the image of the brand is paramount when faced with some buying situations. Building brand meaning requires creating a positive brand image which relates to perceptions customers have with the brand. Brand meaning is made up of brand imagery and brand performance. Brand performance is related to the intrinsic brand attributes which transfer functional utility to customers. In contrast, brand imagery describes the extrinsic features of the product and represents the intangible characteristics of a brand which satisfy the psychological and social needs of customers. Successful outcomes of these dimensions elicit favourable brand response which produces intense and active loyalty.

- **Brand Responses**

Successful brand response depends on brand meaning and relates to the thoughts and feelings of buyers towards the brand. Brand response is composed of brand feelings and brand judgement. Brand judgement describes customers' overall impression and assessment of the brand and is formed through the combination of various aspects of meanings linked to the brand. On the contrary, brand feelings indicate a customer's emotional response and reaction to the brand as well as a sense of belongingness evoked by the brand. Customers' feelings and judgement about a brand can positively influence their buying behaviour if they respond favourably when exposed to the brand.

- **Brand Relationships**

Brand relationships is the last stage of brand-building efforts and indicates the degree of attachment to the brand. Brand resonance describes the kind of attachments that exists between the buyers and the brand, including the way customers accept that they are "in sync" with the brand. This can be seen by the intensity or the depth of the psychological bond that customers have with the brand as well as the nature of behaviour elicited by brand loyalty. Brand

relationships are broadly composed of two major elements: intensity and activity. Intensity of brand relationships is the strength of the attitudinal attachment and sense of belongingness the customer has with the brand. The activity of brand relationships, on the other hand, refers to the frequency at which the brand is bought and consumed in addition to repeated participation of activities independent of purchases and consumption of the brand. Brand resonance is the uttermost objective of the model and can be a focus of marketing actions and means of interpreting brand-related marketing activities.

2.9 Chapter Summary

The chapter presents an overview of traditional herbal medicine and over-the-counter medications and their renewed global interest, including their potential adverse events. The chapter also explains packaging together with its functions and components in the over-the-counter drug market. Furthermore, the dichotomy between brands and products is explained as well as the branding and brand strategies in the drug industry are well discussed. The concept of brand equity, its dimensions and perspectives as well as the model designed to guide brand building efforts of firms are also explained in this chapter. This has helped to identify gaps which justify the research, and ultimately, the invaluable nature of the study. The ensuing chapter focuses on the theoretical and conceptual models that guide the study.

CHAPTER THREE

THEORETICAL AND CONCEPTUAL FRAMEWORK

3.1 Introduction

The previous chapter presented the relevant literature underling the research to provide the theoretical basis of the study and also to justify the research problem which the research seeks to address. The current chapter provides the theoretical and conceptual framework of the thesis. First, the key theories of customer-based brand equity (CBBE) and packaging will be examined after which a conceptual model of the study will be developed. This will be guided by the relevant literature reviewed in the previous chapter. Though several theories have been proposed over the years to investigate CBBE, a review of marketing literature in the previous chapter reveals that the basic underlying theories of CBBE are those propounded by Keller (1993) and Aaker (1991; 1996). Buil *et al.* (2013) also confirmed that the foundation of all models of CBBE developed later by other authors originated from Aaker (1991; 1996) and Keller (1993). Hence, the theoretical models of CBBE proposed by Aaker (1991; 1996) and Keller (1993) will be discussed in this chapter.

3.2 Keller`s Brand Equity Theory

Keller (1993) approached CBBE from the view point of an existing or a prospective individual customer or organization. The fundamental principle of this theory is that the health of a brand depends on what resides in customers` memory as result of their past exposures to the brand (Keller, 2001). Customers` experiences with the brand relates to what they have heard, seen, felt, and learned about the brand. Keller (1993:2) defined CBBE as “the differential effect of brand knowledge on customer response to the marketing of the brand”. The author also emphasized that a brand has high value if customers` responses to the market offering and its marketing activities are favourable compared to identical but unbranded product.

Generally, favourable customer response and strong brand equity can engender lower costs, higher revenue and ultimately greater profits. Here, the differential effect is defined in terms of differences in how customers react to the marketing of a brand name compared with an unbranded version of the product. Secondly, customers` reactions to the marketing of a brand

is shown by preferences, behaviour and perceptions resulting from all aspects of the firm's marketing actions.

According to the author the key antecedent of CBBE is brand knowledge and comprises brand image and brand awareness as shown in the Figure 3.1 below. Thus, Keller (2013) noted that customer-based brand equity is developed when the buyer demonstrates strong awareness and familiarity with the brand and has some strong, favourable and unique mental associations with the brand. The author relied on an associative network memory model and defined brand knowledge as the brand's information stored in memory which reflects a variety of associations.

Brand awareness relates to the strength of the brand node or trace in memory (Rossiter & Percy, 1987 cited by Keller, 1993). Brand awareness is distinguished into brand recognition and brand recall performance. Brand recognition reflects the customer's ability to confirm previous experiences with the brand when given as a cue. In contrast, brand recall is related to the ability of customers to generate the brand from their mind. Once a sufficient level of brand awareness has been created, marketers can concentrate on building brand image.

Brand image relates to perceptions about the brand and can be seen as customers' mental associations with the brand. Brand association is described as "the other informational nodes linked to the brand node in memory and contain the meaning of the brand for customers" (Keller, 1993:3). Brand associations can take different forms but usually consist of features of the product or aspects that are distinct from the product. Essentially, brand associations are composed of attributes, benefits and attitudes in an increasing scope.

Brand attributes are characteristics that describe market offerings and are categorized into intrinsic and extrinsic attributes depending upon how directly they relate to the product performance. Intrinsic features relate to the physical composition or requirements of the product that are essential for the products' performance sought by buyers. In contrast, non-product-related attributes describe extrinsic characteristics of a market offering that are linked to its purchase or consumption. Extrinsic attributes consist of packaging, usage imagery, price and user imagery (*ibid*).

Brand benefits are also concerned with the meaning and value which buyers associate with the product features. Brand benefits could be symbolic, experiential and functional depending upon

the underlying motivations to which they relate. Brand attitudes, on the other hand, are seen as customers' perceptions of the quality of the brand (Zeithaml, 1988 cited by Keller, 1993). All these brand associations vary according to their favourability, uniqueness and strength.

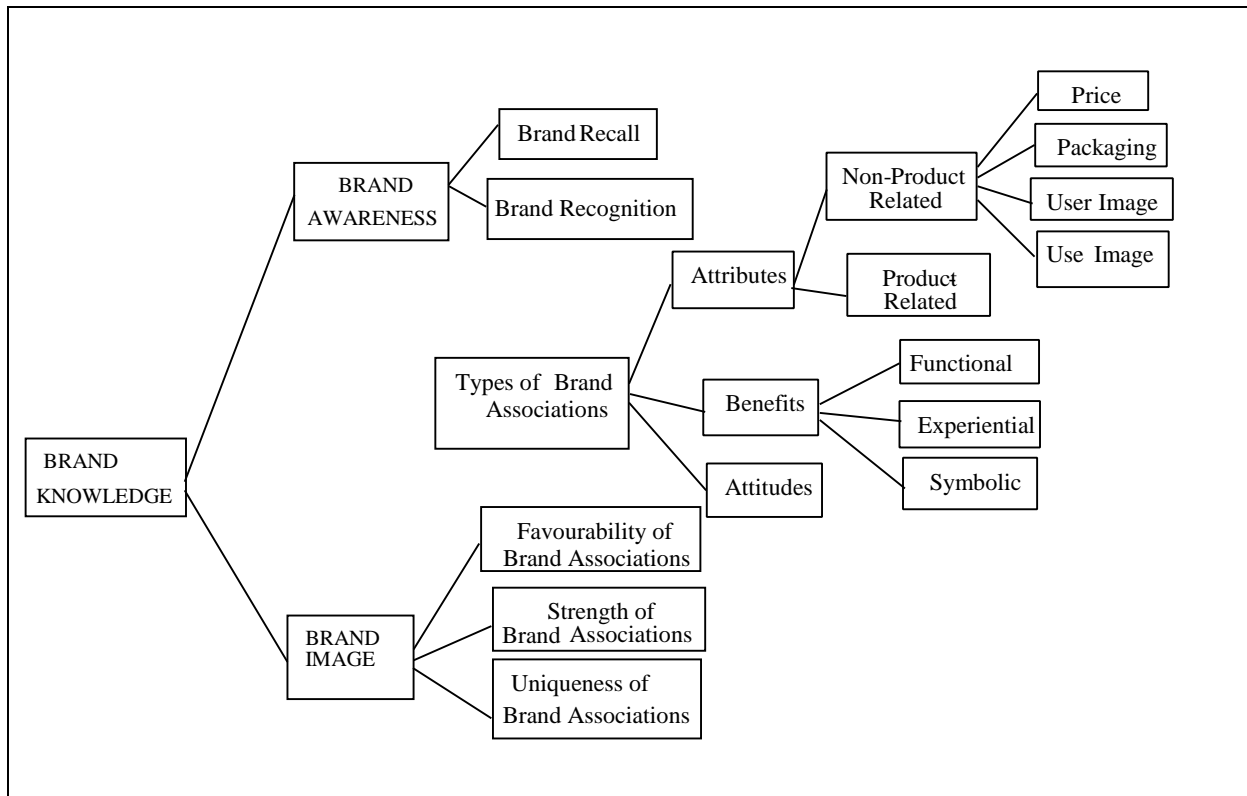


Figure 3. 1: Keller`s Customer-Based Brand Equity Model

Source: Keller (1993: 7)

3.3 Aaker`s Brand Equity Theory

Aaker (1991:15) defined brand equity as a “set of brand assets or liabilities linked to a brand, its name and symbol that add to or subtract from the value provided by a product or service to a firm and/or to the firm`s customers.” For brand equity to occur, brand assets or the liabilities must influence the symbol and /or name of the brand.

The assets that provide value to brand include: perceptions of brand quality, brand awareness, brand loyalty, brand association and other proprietary brand elements such as, channel relationship, trademarks, and patents. This is shown in the Figure 3.2 below. The author is of

the view that the individual dimensions of brand equity generate value for the firm and its customers.

For example, perceived quality provides the basis for reason-to-buy, price premium, brand extension, channel members` interest in the brand, and positioning and differentiation which ultimately improves the brand`s performance in the market. However, brand equity can add or subtract value from customers. More essentially, brand equity adds value to customers by assisting them to interpret, process and store product information as well as providing assurance while making purchasing decisions and user satisfaction.

Similarly, brand equity generates value for companies by improving the efficiency and effectiveness of marketing programs, brand extensions, prices, loyalty, trade leverage and competitive distinctiveness. However, Aaker (1996) confirmed that brand awareness, brand associations, brand loyalty and perceived quality represent perceptual dimensions of brand equity as shown in Figure 3.2 below, while the other brand assets are derived not directly from customers but rather from market-based information.

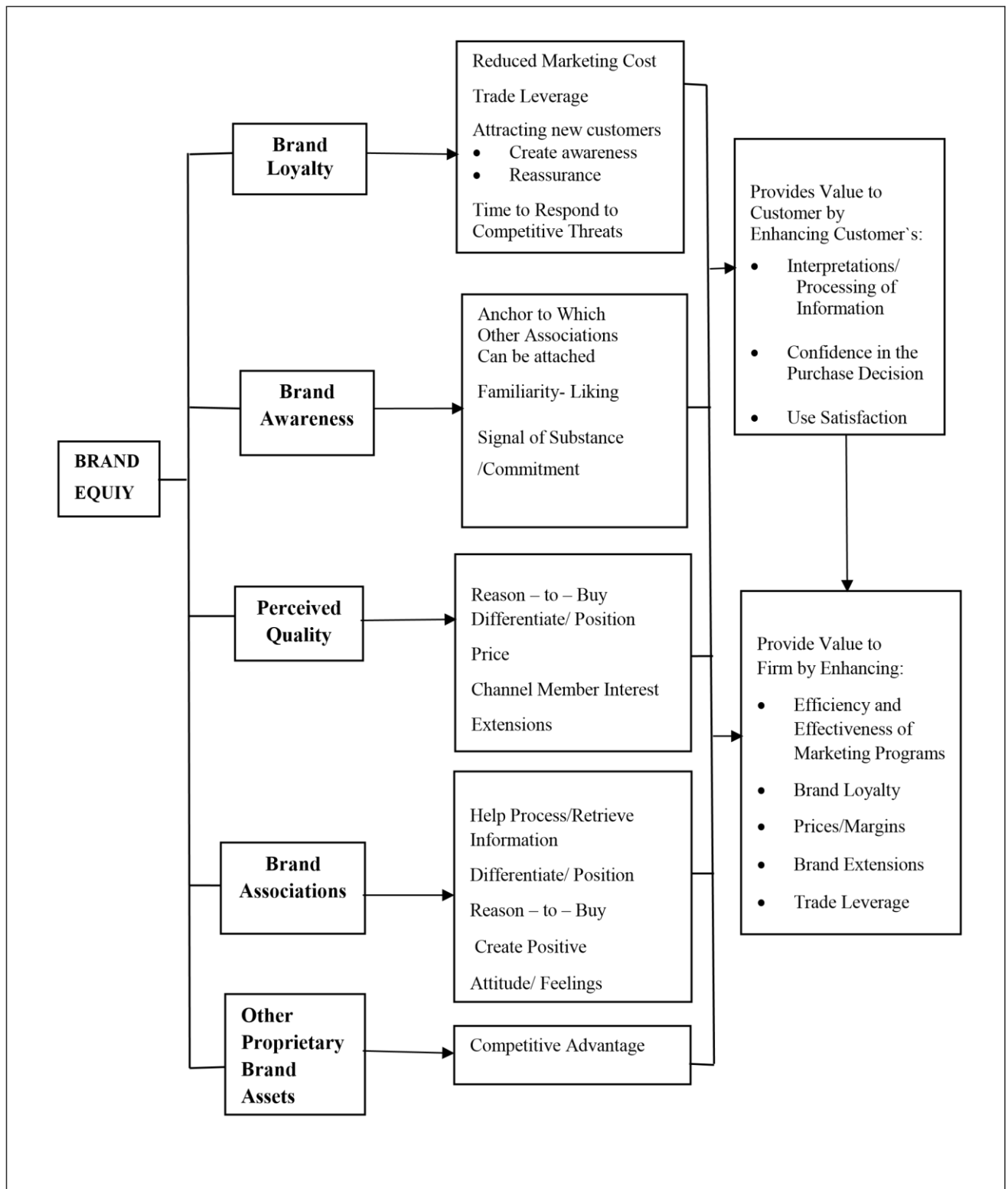


Figure 3. 2: Aaker`s Brand Equity Model

Source: Aaker (1991: 270)

3.3.1 Adopted Customer-Based Brand Equity Theory

Though the two aforementioned models are fundamental theories of CBBE in the marketing literature, this thesis is closely guided by Aaker's CBBE model. Cobb-Walgren, Ruble, and Donthu (1995) stated that CBBE has been operationalized into customer perceptions (brand awareness, perceived quality, brand associations) and behaviour (willingness to pay a high price, loyalty). The authors further argued that "there are advantages of combining both customer perceptions and actions into a single marketing measure of brand equity" (p. 27). It has also been highlighted that attitude alone is fundamentally a poor predictor of marketplace behaviour. Alternatively, customers' perceptions are obviously a precursor of behavioural indications of a brand equity.

Aaker and Biel (1993:71) also confirmed that "a successful brand depends upon customer behaviour, which is, a root, driven by perceptions of a brand". In their view, behavioural dimensions indicate that brand equity exists, yet they are unable to demonstrate what resides in the minds and hearts of customers that really influence equity. However, while Keller's (1993) framework is based solely on customer perceptions, Aaker's (1996) model incorporates both perceptual and behavioural measures of CBBE. Moreover, a review of the literature in Chapter Two indicates that Aaker's (1996) CBBE model is most popular and has been extensively used by many researchers to study customer-based brand equity. This position is also supported by Christodoulides *et al.* (2015) who pointed out that the dimensionality of Aaker's (1996) brand equity model has been used in several empirical studies and contexts. Further, the importance of Aaker's (1996) model has been documented in the pharmaceutical marketing theory (Moss, 2007; Sanyal & Datta, 2011; Panchal *et al.*, 2012; Dlačić & Kezman, 2014).

For example, Moss (2007) stated that developing brand name awareness is a key strategic objective in the pharmaceutical market. Sanyal and Datta (2011) also concluded that, though the significance of perceived quality and the roles of quality attributes in influencing perceived quality has been analysed in many contexts, it can also be extended to pharmaceutical products in general. In addition, Moss (2007) confirmed that most of the advantages of brand loyalty in the customer market have some level of validity in the pharmaceutical market, especially in the OTC market.

3.4 Research Hypotheses

The purpose of the current research was to investigate the influence of packaging and brand equity of herbal medicines sold at the OTC market in Kumasi. The research further sought to explore the influence of brand equity dimensions on overall brand equity. On the basis of the reviewed literature, the hypotheses posited in the study are discussed below.

3.4.1 Relationship between Brand Equity and its Dimensions

Aaker (1996) concluded that the key brand elements that provide value to a brand are perceived quality, brand association, brand loyalty and brand awareness.

Brand awareness

Creating brand awareness is recognized as one of the core objectives for designing a marketing communications strategy for a firm because customers cannot buy a product unless they are aware of it (Peter & Olson, 2008). Brand awareness relates to the salience of the brand in buyers' memory (Aaker, 1996). Thus, brand name awareness is the ability of a prospective buyer to recognize and recall the brand as a member of a specific product category (Aaker, 1991). It is highlighted that brand awareness does not only indicate that the brand has been seen in the past and/or is known but has also been registered in the memory (Hoeffler & Keller, 2002). Brand awareness is regarded as the basic first step in the process of building brand equity because a prospective buyer must first notice and recall the brand while at the market place (Buil *et al.*, 2013; Keller, 2013; Hoeffler & Keller, 2002).

Although brand awareness is an essential asset for brand-building efforts, it is usually not elevated as one of the elements of brand equity which is capable of creating substantial value for a brand (Hoeffler & Keller, 2002; Chen, 2001). For example, Buil *et al.* (2013) pointed out that brand awareness can be positive, but may not have a direct impact on brand equity.

Keller (2013) suggested that brand awareness can be decomposed into brand recognition and brand recall. Brand recognition indicates the ability of the customers to generate their past experiences with the brand, whilst brand recall relates to spontaneous retrieval of the brand from the mind (Hoeffler & Keller, 2002; Keller, 1993). Aaker (1996), however, operationalized

brand awareness as brand recognition, brand recall and top-of-awareness. Keller (2013) emphasized that brand familiarity is an important ingredient of brand awareness.

Alba and Hutchinson (1987) defined brand familiarity as the total number of customers' exposures with the brand. The author further pointed out that previous exposures the customer has had with the brand might not enhance brand recognition, but it is usually the most recent experiences that significantly influences brand awareness.

Though the importance of brand awareness in supporting brand equity is sometimes undervalued (Hoeffler & Keller, 2002; Chen, 2001), it can positively influence customers' purchase intentions and loyalty (Aaker, 1996). Keller (1993) is also of the view that high brand awareness indicates that the brand will be considered among handful of brands the customer wishes to buy. Secondly, strong brand awareness can affect customers' buying decisions in the consideration set.

Furthermore, it has been emphasized that brand awareness supports the favourability of brand associations and brand quality (Keller, 1993; Keller & Lehmann, 2003). Aaker (1991) also pointed out that customers usually buy well-known brands as these brands are often considered to be of good quality, reliable and in business to stay. An empirical research suggests that brand awareness influences overall brand equity (Asif *et al.*, 2015).

Hence, the following hypothesis is proposed:

H1b: Brand awareness positively and significantly influence overall brand equity

Brand association

After creating brand awareness, a manager's task is to create a set of strong, desirable and distinctive brand associations in the minds of customers. Brand association is also regarded as another core element of CBBE (Aaker, 1991; 1996; Keller, 1993). Brand association relates to anything that the buyer links to the brand, and it connects the customer to the brand which includes use situations, user imagery, symbols, organizational characteristics, product features and brand personality (Campbell, 2012; Aaker, 1991).

Aaker (1996) suggested that brand association is made up of brand personality, organizational associations and perceived value. Perceived value relates to the basic functional benefits that a

brand conveys to customers. Zeithaml (1988) also suggested that perceived value is the subjective assessment of utility of a product in terms of what is received and given out.

Brand personality can be defined as human traits that are linked to a brand (Aaker, 1997), and it tends to reflect the emotions and feelings evoked by the brand (Keller, 1993). Aaker (1997) suggested five elements of brand personality: sophistication, excitement, sincerity, ruggedness and competence. For some brands, brand personality provides symbolic and self-expressive benefits which, in turn, support differentiation and customer-brand relationships (Aaker, 1996). While product-related attributes tend to serve a utilitarian function, extrinsic product features provide personality for the brand (Keller, 1993; Aaker, 1997).

Finally, the organizational association relates to the organizational elements (values, programs and people) that are connected to the brand. Organizational associations have the potential to drive choice and differentiation. Organizational characteristics that are usually associated with brands include concern for customers, innovativeness, quality, corporate social responsibility, success and a global orientation (Aaker, 1996).

Chen (2001), however, categorized brand associations into product associations and organizational associations. Product association is further divided into functional attribute association (functional benefit, perceived quality and product attribute) and non-functional attribute association (price/value, emotional associations, use/usage situation, and symbolic associations). The non-functional attribute association seems to coincide with the non-product related attributes proposed by Keller (1993). Organizational association is also grouped into corporate social responsibility associations and corporate ability associations.

Low and Lamb (2000) also identified perceptions of quality, brand attributes and brand image as antecedents of brand associations. This contrasts sharply with the position of Keller (1993: 3) who viewed brand image as “a set of associations linked to the brand”. Hence, according to the author’s position brand image is not a dimension of brand association.

Aaker (1991) pointed out that brand associations can be used to position, differentiate and extend brands as well as evoke positive feelings toward the brand, and provide the reason for buying the brand. Nor is this all, customers depend on brand associations to retrieve, organize and process information stored in the memory to assist in making buying decisions. Chen

(2001) is of the view that strong and unique brand association would increase brand equity and ultimately creates a strong competitive edge for a firm. Yoo *et al.* (2000) also suggested that brand association can serve as an indicator of quality which may influence the buyer to consider the brand in the store, and ultimately build a positive attitude towards the brand. Hence, strong brand equity suggests that buyers have positive perceptions of the brand (Atilgan *et al.*, 2005). An empirical study also reveals that brand association significantly enhances brand equity (Yoo *et al.*, 2000).

Hence, the following hypothesis is postulated:

H2b: Brand association positively and significantly influence overall brand equity

Perceived quality

Another component of brand equity is customer perceptions of the quality of the brand (Aaker, 1996). Perceptions of quality are concerned with subjective assessment of the overall excellence of a good (Zeithaml, 1988). The author further stated that perceived quality contrasts sharply with objective quality. Actual product quality, however, relates to the extent to which the product provides excellent performance. A further distinction is made between manufacturing-based quality and product-based quality. Gavin (1987) stated that product-based quality relates to the nature and amount of particular attributes that make up the product, whilst manufacturing-based quality refers to conformity to production or service requirements. It has been emphasized that customers' perceptions of superiority of a product can be enhanced if the actual quality of the product is improved (Gil *et al.*, 2007). In addition, the company needs to convey the superiority of the brand via its marketing activities to customers.

According to Aaker (1992), perceived quality creates value for a brand by being the basis for differentiation, reason to buy, line extensions, channel member interest and price premium, and overall contributing to the profitability of the firm. As a result, perceived quality is regarded as a strategic competitive weapon and therefore many companies have now turned to customer-driven quality to create value to delight their customers. Customers' perceptions of product quality has been recognized as an element of perceived value (Zeithaml, 1988), and ultimately, superiority of a brand can drive a buyer to choose the brand in place of alternative brands (Yoo *et al.*, 2000).

Although perceived quality is recognized as a distinct dimension of brand equity (Aaker, 1996), some authors consider it as one of the elements of brand association (Campbell, 2002; Keller, 1993; Chen, 2001). However, Aaker (1996) is of the view that, though perceived quality is usually considered as an aspect of brand association, it has been elevated as a distinctive dimension of brand equity due to the following reasons:

- amidst brand associations, perception of quality is the only dimension that contributes significantly to enhance financial strength of a firm
- perceived quality is usually of great importance for a company
- perceived quality in most cases influences the other elements of brand equity and has relationship with them.

Gavin (1987) suggested that customers perceive the quality of a product along the dimensions of product features, performance, conformance, reliability, durability, image, aesthetics and serviceability. Alternatively, Aaker (1991) proposed performance, reliability, durability, serviceability, fit and finish, product features and conformance to specification as the dimensions of quality of a product. It has however been suggested that safety, efficacy/efficiency, convenience, affordability, availability, side effects, package design and advertising are recognized as quality dimensions in the drug industry (Dickov & Igić, 2013; Osemene, Elujoba, & Ilori, 2011).

Moss (2007) pointed out that the way quality is perceived in the pharmaceutical industry is different from that of traditional customer goods industry. The quality of prescription drugs is not determined by users but by a third-party group prior to their commercial viability. In theory, quality itself is not an important factor that drives the purchase of drugs, but in practice, health care providers and patients recognize quality as an essential cue in usage.

Zeithmal (1988) stated that “perceived quality” model is based on customers` judgment of product quality but not a manager`s or an expert`s point-of-view. Thus, the viewpoint expressed in this research is related to a user-based perspective which is different from product-based and manufacturing-based approaches suggested by Moss (2007).

Moss (2007) argued that the pharmaceutical industry does not discuss quality issues in detail and also integrates it in the promotion strategy, yet it is relevant for stakeholders in the industry to consider aspects of quality when selecting pharmaceutical brands. Awareness of quality is a growing concern in recent years due to the threat of counterfeit medicines globally. Studies also confirm that perceived quality has a significant effect on brand equity (Yoo *et al.*, 2000; Buil *et al.*, 2013).

As a result, the following hypothesis is posited:

H3b: Perceived quality positively and significantly influence overall brand equity

Brand loyalty

Brand loyalty is regarded as a strategic element of a brand`s equity and measures the attachment of customers to a particular brand (Aaker, 1991). However, brand loyalty is often recognized as the outcome of brand equity and it is really affected by the other elements of brand equity (Campbell, 2012; Aaker, 1991). Aaker (1991) pointed out that brand loyalty is an antecedent of brand equity and is also influenced by brand equity. The author further stated that brand loyalty is substantially influenced by other constructs of brand equity and for that matter, it is one of the many sources that brand equity creates value for a company.

Many authors have also concluded that brand loyalty is the behavioural effect of brand equity rather than a brand equity dimension (Lassar *et al.*, 1995; Kim *et al.*, 2003; Cobb-Walgren *et al.*, 1995; Erdem & Swait, 1998). Aaker (1991) is of the view that brand loyalty qualitatively differs from the other antecedents of brand equity in the sense that it occurs prior to purchases and use experience. On the other hand, brand awareness, associations and perceived quality are features of several brands which have not been used before by potential buyers.

Oliver (1999: 34) defined loyalty as “a deeply held commitment to rebuy or re-patronize a preferred product/service consistently in the future, thereby causing repetitive same-brand or same-brand-set purchasing, despite situational influences and marketing efforts having the potential to cause switching behaviour”. In the author`s view, customers develop loyalty to a brand through a logical process of cognitive-affective-conative and action stages.

Ferrel and Hartline (2008: 198) are also of the view that brand loyalty is a “positive attitude toward a brand that causes customers to have a consistent preference for the brand over all other competing brands in product category”. The authors distinguished three stages of brand loyalty: brand recognition, brand preference and brand insistence. Brand recognition relates to the minimum degree of brand loyalty and exists when target customers demonstrate awareness of the brand, and include the brand among alternatives when making buying decisions. In contrast, brand preference is a stronger degree of brand loyalty, and occurs when a customer considers a brand as a first choice in relation to analogous brands. Brand insistence is, however, the highest level of brand loyalty, and it occurs when the customer chooses a particular brand even if alternatives are available (Trott & Sople, 2016). However, Keller (2001) examined brand loyalty under brand resonance.

Chaudhuri and Holbrook (2001) categorized brand loyalty into behavioural and attitudinal loyalty. Behavioural loyalty indicates customers` re-patronage of a brand, whilst attitudinal loyalty describes a customer`s commitment to a brand. Empirically, behavioural and attitudinal brand loyalty influence brand equity (Chaudhuri & Holbrook, 2001). Customer satisfaction is also a key indicator of loyalty for a particular product category where purchase and consumption represent repeated behaviour (Aaker, 1996). A loyal customer base has been demonstrated to have significant influence on market share, price premium, a barrier to competitor entry, and the overall profitability of the brand (Chaudhuri & Holbrook, 2001; Aaker, 1996).

Aaker (1991) highlighted that brand loyalty relatively reduces the marketing cost involved in retaining customers to winning new ones, improves trade leverage and insulates against competitor attacks. However, Moss (2007) pointed out that trade leverage is much less important in the prescription drug market than in the OTC market, as distribution channels of the ethical drugs offer a delivery service rather than playing a gate-keeper role. Empirical studies suggest that brand equity is substantially influenced by brand loyalty (Atilgan *et al.*, 2005; Yoo *et al.*, 2000).

In this regard, the following hypothesis is proposed:

H4b: Brand loyalty positively and significantly influence overall brand equity

3.4.2 Relationship between Packaging and Brand Equity Dimensions

In today`s market place, firms design marketing programs for their market offerings in a number of ways to build strong brands with positive equity. Brand equity, one of the strategic objectives of marketing, is significantly influenced by packaging, and is the single most influential marketing communications tool for conveying a brand`s core identity for most customer products (Hanzaee, 2009; Wallace, 2001). Nowadays, packaging also plays an important role in brand management as the distinctive design of packaging does not only identify and distinguish brands but also enhance the meaning, likeness and memory of the brand (Keller, 2013; Kotler & Keller, 2009). Garber *et al.* (2000) emphasized that packaging can either strengthen or harm a brand`s equity by enhancing or stifling brand identification and the retrieval of valuable brand associations.

A well-designed packaging serves as platform for building brand equity (Keller, 1993) by enhancing brand recognition and recall (Underwood, 2003). Peter and Olsons (2008) suggested that a distinctive package design can potentially create brand awareness by attracting and sustaining customer`s attention to the brand while in the store. Keller (2013) is of the view that brand awareness occurs when customers have greater familiarity with the brand via repeated experiences with the brand.

Essentially, any marketing activity that exposes the brand to customers can enhance familiarity and awareness. While in the store, packaging serves as a “visible billboard” that generates immediate recognition of the brand (Kotler & Keller, 2009; Keller, 2013). It is also argued that an attractive packaging design appears to be the primary medium of communication between the customer and product at the point-of-purchase. Hence, it is regarded as a “silent salesman” which has the potential to create brand differentiation and identification (Gonzalez *et al.*, 2007).

More importantly, the role of packaging as a medium of advertising does not only occur in the store, but also at moment-of-consumption, thus, playing a leading role in advertising (Keller, 2013). Packaging is also considered as the only form of the marketing communications tool which a customer takes home after purchase (Dodson & Yadav, 2012), implying that it continues to advertise the brand after the product is bought (Keller, 2013).

It has been emphasized that packaging colour is a vital element that creates brand awareness (Kotler, 2013) because it is more vivid, memorable, and evokes customers` emotions about the brand (Garber *et al.*, 2000a). Past research also confirms that a distinctive and appealing packaging contributes significantly to brand awareness (Pieterse, 2001).

In this regard, the following hypotheses are posited:

H1a: Packaging positively and significantly influence brand awareness

According to Farhana (2012) packaging significantly strengthens associations customers linked to the brand. Underwood (2003) highlighted that the structural and visual features of packaging such as colours, fonts, brand logo, packaging materials, shapes, product description and other elements convey brand personality which provides rich brand associations. A customer`s mental associations with a brand is due to idiosyncratic personal exposures and previous marketing activities of the firm and its competitors.

Visual, verbal and tactile elements of packaging communicate implicitly by evoking images of product performance features, product quality, usage situations, and past experiences into customer`s memory (Garber *et al.*, 2000a). Gardner (1981) noted that a product`s package is a symbol of communication that penetrates the mind and evokes meanings that actually affects a customer`s sensory response to the product.

Keller (1993) proposed that brand knowledge is the key dimension that underlies brand equity, and ultimately the power of brand resides in customers` memory. Packaging therefore serves as a powerful source of the brand associations because it conveys the potential meaning of the brand (Underwood, 2003). For many non-durable customer goods, packaging contributes significantly by transmitting symbolism and image of the brand, thus, effectively distinguishing the brand from its competitors (Underwood & Ozanne, 1998). A study suggests that product image on the package can attract attention to brands that are less familiar and transfer experiential benefits (Underwood *et al.*, 2001) and thus reinforcing valuable brand associations (Pieterse, 2001).

Hence, the following hypotheses are formulated:

H2a: Packaging positively and significantly influence brand associations

Pitta and Katsanis (1995) highlighted that quality products are wrapped in quality packages. Hence, well-designed packaging is perceived to contain a quality product, whilst an inferior packaging signals a poor quality product (Silayoi & Speece, 2004). It has also been emphasized that, customer perceptions of quality of pharmaceutical product depends largely on the quality of the package (WHO, 2002a).

Visual elements of packaging design such as graphics, typeface, colours, size and logos are important inputs of customer quality judgment of food products and brands. The results of an empirical study also indicate that visual packaging attributes significantly contribute to enhance brand preference and perceived quality of food products (Edward, 2013).

Products are made up of an array of intrinsic and extrinsic elements (Miyazaki, Grewal, & Goodstein, 2005), and customer perception of product quality lie in these attributes (Zeithaml, 1988; Na, Marshall, & Keller, 1999). It has been highlighted that intrinsic quality cues play a key role in the ethical drug market, and in contrast, extrinsic product features are more important in the OTC market (Sanyal & Datta, 2011; Kuappinen-Raisanen, 2010).

Miyazaki *et al.* (2005) are of the view that customers often used extrinsic attributes as a risk reduction cue during product evaluation and choice. Packaging is recognized as an element which is indirectly related to the physical product (Keller, 1993), but forms the basis for a customer's perception of product quality (Pitta & Katsanis, 1995).

However, packaging is viewed as both intrinsic and extrinsic features of a product that signals quality (Zeithaml, 1988; Underwood, 2003). Zeithaml (1988) emphasized that customers however rely greatly on extrinsic attributes to infer quality of a product when they have no or little experience or insufficient time and difficulty to evaluate intrinsic attributes. Hence, at the selling points, extrinsic elements are often used as quality indicators because customers usually do not have ample time to consider the intrinsic characteristics of the product. Past research indicates that packaging designs that contain pictures signal high perceived quality (Underwood & Klein, 2002).

In this regard, the following hypotheses are proposed:

H3b: Packaging positively and significantly influence perceived quality

Underwood (2003) is of the view that packaging is a key element that potentially conveys functional, experiential and symbolism brand benefits which often establish a relationship between the customer and brand. In order to establish this relationship, manufacturers must create a balance between the need for packages to grab attention and persuade as well as the need to transmit truthful, sincere, comprehensible and legitimate product information. Designing packages that conveys authentic information can strengthen brand loyalty and brand relationships (Underwood & Ozanne, 1998).

Smith and Taylor (2002) also noted that the packaging can create competitive strength by adding value to the product, building stronger shelf presence, positioning the brand and strengthening the loyalty to the brand. A distinctive packaging is described as “a visual magnet” that attracts the buyer to purchase the brand and ultimately become loyal to the brand (*ibid*). It has also been emphasized that packaging provides a platform for building and enhancing customer product satisfaction which underlies enduring brand loyalty and profitability (Hess, Singh, Danes, & Metcalf, 2014).

Raghubir and Krishna (1999) commented that the container shape influences the preference and post-consumption satisfaction of customers. Past research also indicates that brand loyalty is significant and positively influenced by packaging (Dhurup, Mafini, & Dumasi, 2014; Khan, 2012). Brand loyalty, in turn, contributes to strengthen overall brand equity (Aaker, 1996). Previous studies also demonstrate that brand equity is strongly influenced by brand loyalty (Atilgan *et al.*, 2005; Tong & Hawley, 2009; Yoo *et al.*, 2000).

As a result, the following hypotheses are postulated:

H4a: Packaging positively and significantly influence brand loyalty

3.4.3 Study Conceptual Model

According to Miles and Huberman (1994), the focus of a conceptual framework is to explain graphically or narratively the main factors, concepts and variables in a study, and the presumed relationships among them. The main variables that are discussed in this study include brand awareness, brand loyalty, brand quality, brand association, packaging and overall brand equity. This framework relied on Yoo *et al.* (2000) extension of Aaker's (1996) brand equity model to include overall brand equity construct in order to determine how the individual dimensions of brand equity are related to brand equity. The authors are of the view that brand equity is the value of a brand name which can be low or high and therefore, specifying a separate brand equity construct will help to determine the relationship between the dimensions of brand equity and brand equity. Overall brand equity is defined as the difference in customer choice between a branded and an identical generic version (*ibid*).

Figure 3.3 below depicts the conceptual framework of this study. In the model below, packaging is recognised as an independent variable, whilst the dimensions of CBBE are mediating variables and overall brand equity is considered as a dependent variable. It can be observed in Figure 3.3 that overall brand equity is influenced by packaging through the mediating impact of brand loyalty, brand awareness, perceived quality and brand association. Thus, a well-design packaging creates instant identification and recall of the brand from the mind which ultimately enhance awareness of the brand. This is a necessary first step for establishing associations with a brand.

Furthermore, distinctive packaging design provides a cue for customers to evaluate the quality of the product, particularly where it is difficult to infer quality from the intrinsic features of the product. Packaging is also well-acknowledged in the literature as both intrinsic and extrinsic product attributes that signal the customers' perception of quality of the brand. Finally, an innovative packaging design is a platform for creating and strengthening loyalty of customers to the brand. In turn, brand awareness, brand association, brand quality and brand loyalty significantly influence overall brand equity. Thus, high brand name awareness, positive brand image, enhanced perceptions of quality and loyalty can increase the overall brand equity of herbal medicines.

Packaging is also seen as the container for a product, including the physical appearance of the container (Arens, 1996 cited by Deliya & Parmar, 2012). Brand awareness is defined as customers` ability to identify and retrieve the brand under different circumstances, and it is determined by brand recognition and brand recall (Keller, 2001; Keller, 2013). Brand association relates to customers` mental associations linked to the brand which conveys meaning to customers. Perceived value, organizational associations and brand personality are considered as dimensions of brand association (Aaker, 1996). Perceived quality also indicates customers` perception of a product`s overall excellence or superiority relative to the alternatives and its intended purposes (Keller, 2013).

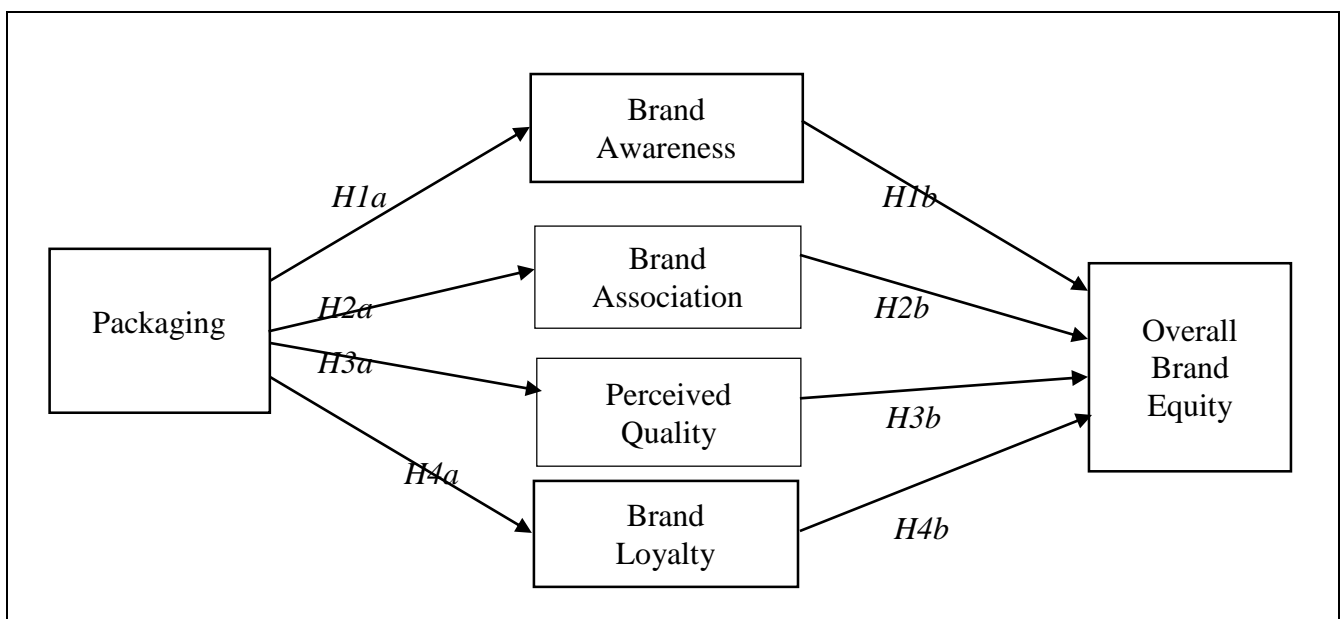


Figure 3. 3: Study Conceptual Framework

Source: Developed from Extant Literature

3.5 Chapter Summary

The present chapter employed Aaker`s (1991; 1996) customer-based brand equity model to develop the conceptual framework of the study. As a result, the chapter explains the theories relating to CBBE and their dimensions. More specifically, Keller`s (1993) and Aaker`s (1991; 1996) CBBE models were discussed. While Keller (1993) relied on brand knowledge, which is made up of brand image and brand awareness as dimensions of brand equity, Aaker (1996) proposed brand awareness, brand association, brand quality and brand loyalty. Aaker`s CBBE model was used to develop the conceptual framework of this study. The current research model

demonstrates that packaging enhances overall brand equity through the mediating impact of brand loyalty, brand association, perceived quality and brand awareness. Packaging is considered as an independent construct, brand equity dimensions are regarded as mediating factors, whilst the brand equity is the dependent variable in the study`s conceptual framework. The next chapter will discuss the methodology to be used to carry out the research.

CHAPTER FOUR

RESEARCH METHODOLOGY

4.1 Introduction

The previous chapter presented the theoretical and conceptual models to provide the basis for the study. The chapter also offered an explanation of the proposed hypotheses drawn from the study's conceptual framework that will be later tested to achieve the objectives of the research. The current chapter discusses the methodology suitable for testing the hypotheses to meet the objectives of the research. This comprises the research philosophy, approach and design, sampling strategy, data sources and collection procedures, data analysis and procedures, and data quality controls.

4.2 Research Problem

The following is the problem statement in this study:

The introduction of packaging in the strategic brand practices may result in improved performance of brands of herbal medicines sold at OTC drug market in Kumasi.

4.2.1 Purpose of the Study

The purpose of the research was to examine the influence of packaging and customer-based brand equity in the OTC medicine market. As a result, the following specific objectives have been carved to achieve the purpose of the research.

4.2.2 Specific Objectives

The specific objectives of the research were:

- ❖ To examine customers' perceptions of packaging of herbal medicine in the OTC market in Kumasi
- ❖ To examine the brand equity of herbal medicines in the OTC drug market in Kumasi.
- ❖ To examine the influence of packaging on brand awareness in the OTC drug market in Kumasi.
- ❖ To examine the influence of packaging on brand associations in the OTC drug market in Kumasi.

- ❖ To examine the influence of packaging on perceived quality in the OTC drug market in Kumasi.
- ❖ To examine the influence of packaging on brand loyalty in the OTC drug market in Kumasi.

4.2.3 Research Questions

Based on the research objectives, the research questions that guided the study were:

- ❖ What is the customers' perceptions of packaging of herbal drugs in the OTC market in Kumasi?
- ❖ What influence does a brand of herbal medicine have on overall brand equity in the OTC drug market in Kumasi?
- ❖ To what extent does packaging influence brand awareness in the OTC pharmaceutical market in Kumasi?
- ❖ How does packaging influence brand associations in the OTC medicine market in Kumasi?
- ❖ To what extent does packaging influence perceived quality in the OTC drug market in Kumasi?
- ❖ How does packaging influence brand loyalty in the OTC pharmaceutical market in Kumasi?

4.2.4 Research Hypotheses

On the basis of the research objectives, the following hypothesized relations were proposed:

- H1a: Packaging positively and significantly influence brand awareness
- H2a: Packaging is positively and significantly influence perceived quality
- H3a: Packaging positively and significantly influence brand associations
- H4a: Packaging positively and significantly influence brand loyalty
- H1b: Brand awareness positively and significantly influence overall brand equity
- H2b: Perceived quality positively and significantly influence overall brand equity
- H3b: Brand association positively and significantly influence overall brand equity
- H4b: Brand loyalty positively and significantly influence overall brand equity

4.3 Research Philosophy

The research philosophy is concerned with the important assumptions about the world view which determines the selection of the research design and specific methods to transform the approach into reality. Thus, the choice of research methods reflects the paradigm that guides the study, more particularly the belief about the nature of reality and humanity, the body of knowledge that informs the research, and how that theory of knowledge may be translated into practice (Tuli, 2010). Additionally, the type of belief system held by an individual researcher becomes the basis for using either quantitative, qualitative or mixed method research (Mertens, 2015).

Guba and Lincoln (1994:105) described the research paradigm as “the belief system or world view that guides the investigator, not only in choice of method, but in ontologically and epistemologically fundamental ways”. Creswell (2014) highlighted four world views that are widely discussed in the literature: post-positivism/positivism, constructivism, pragmatism and transformative paradigms. The philosophical assumptions that guide this research is the positivist/post-positivist paradigm. The aim of the current research is to test the theory of CBBE and packaging through a priori hypotheses with empirical data to either confirm or refute the relationship between packaging and brand equity.

It has been emphasised that the aim of inquiry of the positivist/post-positivist paradigm is to test theories by specifying a priori hypotheses to determine the functional relationships in order to predict and control social phenomena (Guba & Lincoln, 1994; Creswell, 2014). The authors also highlighted that the research questions and/or hypotheses are stated as quantitative propositions and are subjected to empirical test to verify or falsify them.

4.3.1 Positivist Paradigm

The positivism paradigm is often known as the “scientific method” or “science research” that reflects a rationalistic, empiricist world view and was authored by Aristotle, Francis Bacon, John Locke, Auguste Comte and Emmanuel Kante (Mertens, 2015; Creswell, 2014).

The positivist stance is that the social world can be studied in a similar manner as the natural environment and therefore the approach for studying the social world is based on objective realism (Mertens, 2015). The author is also of the view that cause-effect relationships can also

be explained in the social environment as it is done in the natural world. Creswell (2014) suggested that the knowledge that is developed by the positivist approach is through accurate investigation and the value-free assessment of reality in the natural environment.

Positivists hold the view that the scientific method of inquiry permits the use of experiments and analysis of what is observed, with the view to making general laws to determine the relationships among variables. Moreover, positivists argue that there are laws or theories that govern the social world, and these laws or theories can be tested or verified and if necessary, refined by applying natural science methods. The positivist philosophical stance is deterministic in nature and, thus, causes perhaps determine outcomes, and also reductionist in the sense that the intent is to reduce the ideas into measurable variables that are stated in the form of hypotheses as well as research questions.

Although, positivist claims that scientific information is highly cogent, objective, accurate and reliable (Crotty, 1998 cited by Mertens, 2015), and that the focus on objective and empirical knowledge has some level of application, it is limited to the study of human behaviour (Mertens, 2015). It is argued that much of the human experience that is observed is ignored but is still significant.

Consequently, post-positivism emerged and rejected the narrow claim of positivists that what could be studied is independent of what could be observed, and also questions the logic of establishing generalizable laws applicable to human behaviour. However, post-positivists still maintain the significance of value-free inquiry and generalizability but propose that investigators need to reshape their claim on understanding the “truth” based on probability rather than on certainty (*ibid*).

It is also argued that it is impossible to completely avoid the inclusion of the value system of the researcher from the research. This is because the researcher`s decision to adopt positivist stance, the issues to study, the research objectives to pursue and data collection suggest the existence of certain value positions (Saunders, Lewis, & Thornhill, 2007).

Positivist and post-positivism researchers are mostly aligned with quantitative methods of data collection and analysis (Mackenzie & Knipe, 2006). Guba and Lincoln (2005) referenced by Mertens (2010) identified four basic ingredients of belief system that define positivist and post positivism paradigm, which are axiology, ontology, epistemology and methodology.

- **Axiological Assumptions**

Axiology indicates the assumptions about the ethics that guides the researcher. According to the positivist's point of view ethics is inseparable from methodology simply because the investigator is ethically obliged to maintain intellectual honesty, unbiasedness, accuracy and the careful presentation of data and the sincere acknowledgement of the limits of the research (Mertens, 2015). However, Guba and Lincoln (1994) suggested that, although ethical considerations are important to the positivist and post-positivist researcher, it is extrinsic to the research process itself. As a result, ethical behaviour is most often enforced by external mechanism such as a professional code of conduct and a human subjects committee.

- **Ontological Assumptions**

The ontological stance interrogates what the nature of reality is and how the researcher makes meaning of this reality (Mertens, 2010). The basic ontological position of the positivist is that reality is assumed to exist which is governed by unchangeable laws and theories (Guba & Lincoln, 1994) and the knowledge of social reality lies on testing these laws and theories to apprehend the reality (Creswell, 2014). Mertens (2015) noted that post-positivists support the view that reality does exist, but it cannot be perfectly understood due to intellectual constraints. Hence, the nature of reality can be comprehended within some degree of possibility, and the researcher cannot "prove" the theory, but at least, present a strong case to nullify the alternative proposition.

- **Epistemological Assumptions**

The epistemology indicates the nature of knowledge and the relationship that exists between the researcher and participant in the study (Mertens, 2010). The early positivist perceives that the researcher and participant in the study are independent entities, and that the researcher is assumed to be capable of investigating the object of the study by neither influencing it nor being affected by it (Guba & Lincoln, 1994).

However, post-positivists abandoned this view of dualism (Guba & Lincoln, 1994) as the researcher can strongly influence what is observed (Mertens, 2015). Notwithstanding, objectivity still remains the critical tradition of this paradigm in that investigators do not allow personal values and biases to influence the outcomes so long as the researchers strive to remain

neutral by following prescribed procedures more rigorously (Guba & Lincoln, 1994; Mertens, 2015).

- **Methodological Assumptions**

The methodological assumptions deal with the appropriate methods that the inquirer should follow to obtain the desired knowledge and understanding. The methodological stance of the positivist is true experimental designs commonly used by the natural scientist but this stance has been modified by the post-positivists and has then highlighted less rigorous experiments known as quasi-experimental methods that could be applicable to people (Creswell, 2014; Mertens, 2015). It is argued that, although qualitative methods can also be utilized within this paradigm, the quantitative research method tends to dominate in post-positivist research (Creswell, 2014; Mackenzie & Knipe, 2006; Mertens, 2015).

4.4 Research Approaches

Research approaches are “plans and the procedures for research that span the steps from broad assumptions to detailed methods of data collection, analysis and interpretation” (Creswell, 2014: 31). According to the author, research approaches that could be used by researchers include mixed method, qualitative and quantitative research as illustrated in Figure 4.1 below.

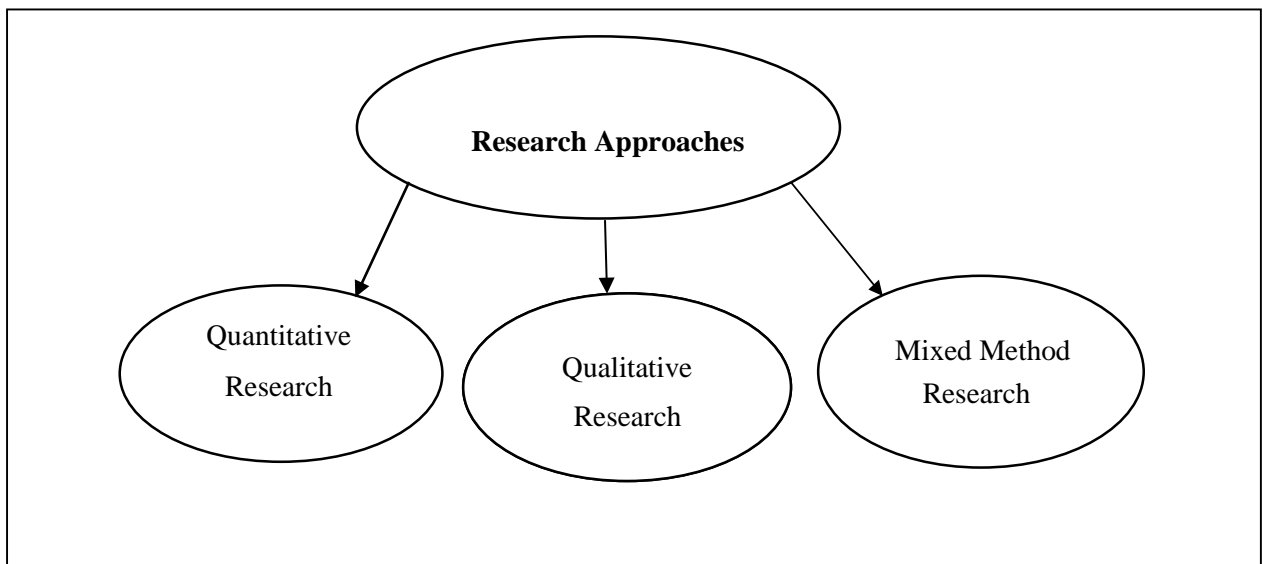


Figure 4. 1: Research Approaches

Source: Creswell (2014: 33)

It has been highlighted that the choice of a research approach depends on the nature of the research problem, personal experiences of the researcher, and the participants in the research. In this research, a quantitative research method is used because it is aligned with the positivist philosophy which underlies this research (Mertens, 2015; Guba & Lincoln, 1994; Creswell, 2014; Mackenzie & Knipe, 2006). Furthermore, the primary aim of the research is to examine the impact of packaging on brand equity of herbal medicines sold at the OTC drug market. Hence, a quantitative research methodology is suitable in order to generate data that can be presented numerically and apply statistical procedures to test the hypotheses formulated to achieve the purpose of the research.

4.4.1 Quantitative Research Method

The quantitative research method relates to the approach that involves the collection, analysis and presentation of information that is numeric (Teddlie & Tashakkori, 2009). The basic aim of quantitative research is to test objective theory by formulating hypotheses to either refute or confirm the hypotheses (Creswell, 2014: 48). Teddlie and Tashakkori (2009) also highlighted that quantitative researchers typically employ a hypothetico-deductive model. This involves the a priori deduction of hypotheses from a conceptual framework or a theory and testing the propositions by using numerical data and statistical analysis with the goal to generalize and replicate the findings (Creswell, 2014; Teddlie & Tashakkori, 2009).

This contrasts sharply with the qualitative research where information is usually presented in words or narrative form rather than numbers by using open-ended questions rather than closed ended questions (Creswell, 2014). Johnson and Onwuegbuzie (2004:18) also highlighted that quantitative researchers “focus on deduction, confirmation, theory/hypothesis testing, explanation, prediction, standardized data collection, and statistical analysis”.

It has also been emphasised that the quantitative approach is associated with different research designs which include experimental, survey, quasi-experimental and correlational designs (Creswell, 2014; Teddlie & Tashakkori, 2009). Johnson and Onwuegbuzie (2004) stated that the potential strengths of the quantitative research approach are that it is suitable for studying larger populations and that the research findings are objective and can also be generalised when it is replicated with many different populations. However, in their view, knowledge generated

through quantitative research may be abstract and general for direct application to particular contexts, situations and individuals.

4.5 Research Design

Research design is a blueprint which is used as a guide in gathering and analysing the data (Churchill, 1996). It also details procedures suitable for implementing the research approach (Malhotra & Birks, 2007). Easterby-Smith, Thorpe, and Jackson (2012) described research design as an organization of research activity, including data-gathering, in a way to achieve the aim of the research. It explains and justifies what, how and where the data will be collected, as well as how the data will be analysed to address the research questions. In this study, a survey research design has been used.

4.5.1 Survey Research Strategy

There is a wide variety of research strategies that are available to a researcher to aid data collection in a study. Saunders *et al.* (2007) suggested that the choice of a specific strategy is guided by the research questions and objectives, the degree of existing knowledge, time and other resources available, and the philosophical underpinnings of the study.

In the present research, a survey method is employed as it is aligned with the positivist approach to research and for that matter quantitative methodology which underlies this research (Saunders *et al.*, 2007; Bryman, 1984; Creswell, 2014). Furthermore, survey research will allow for the gathering of quantitative data from a sample of the target population (Fowler, 2014). The responses obtained can also be analysed quantitatively through descriptive and inferential statistics (Saunders *et al.*, 2007) with the view to generalizing from the sample to a population (Fowler, 2008 cited by Creswell, 2014).

The survey research strategy relates to “the use of standardized questionnaires or interviews to collect data about people and their preferences, thoughts, and behaviour in systematic manner” (Bhattacharjee, 2012: 73). This means that survey research is associated with open-ended and closed-ended questionnaires as tools of data collection. The author is of the view that survey research method is suitable for studies that have individual participants as a unit of analysis.

It has also been emphasized that the survey research method has several advantages over the other research methods. First, survey research is best suited for gathering data from population that is too large to observe directly (*bid*).

Saunders *et al.* (2007) also highlighted that the survey strategy provides an excellent means of collecting a large quantity of data from a sizeable population at a relatively low cost. Not only this, data collected can be used to suggest the possible reasons underlying a particular relationship between variables in order to produce models from the relationships. However, it is argued that the researcher lacks control over non-systematic variations in the variable of interest. Thus, lack of control over the key variables can lead to interesting, but scientifically inconclusive results (Bhattacharjee, 2012).

Survey research strategy is categorized into two methods: cross-sectional and longitudinal (Creswell, 2014). Longitudinal methods relate to the gathering of data at two or more points in time from the sampled population with the view of assessing change or development over time. On the other hand, cross-sectional surveys are used when the researcher desires data from the sample of the population at one point in time. Neuman (2007) is of the view that the inherent strength of cross-sectional survey is that it is a simple and less costly alternative.

Mann (2003) suggested that cross-sectional survey is cheap because only one group is used. Data is gathered only once and multiple results can be studied. Thus, it does not require follow up, and less resources are needed to conduct the study. The author further highlighted that the cross-sectional method is best suited for examining prevalence as well as identifying relationships that can be studied rigorously. However, it does not capture change or social process. As a result of the aforementioned advantages, coupled with the time and resources available as well as the purpose of the research, the cross-sectional survey method is used in this research.

4.6 Kumasi Metropolis in Ghana

Kumasi Metropolis is a cosmopolitan city and is characterized by cultural diversity. According to Ghana Statistical Service (2014), Kumasi is found in the transitional forest zone and lies about 270 kilometres north of Accra, the nation's capital. It is situated between latitude 6.35⁰

N and 6.40° S and longitude 1.35° W and 1.35° E with an elevation ranging from 250 to 300 metres above sea level (*ibid*).

It has a total land area of 254 square kilometres and a population density of 9 434 persons per square kilometre. Kumasi Metropolis is one of the thirty administrative districts in the Ashanti region and accommodates about 36.2 percent of the population in the region.

The metropolis has a population of 2 034 064 million with an annual growth rate of 4.8 percent. Roughly, 52.7 percent are below 15 years of age while the remaining 47.3 percent are above the age of 15 years. The majority of the population are female who constitute approximately 52.22 percent of the population while 47.78 percent are male. Ghanaians by birth comprise 95.4 percent of the population whilst 0.6 percent are naturalized, and 2.1 percent are non-Ghanaians (KMA, 2014).

The metropolis consists of different ethnic groups, with the largest ethnic group being the Akans (80.7%), followed by Mole Dagbon (8.7%) and Ewe (3.6%). Essentially, almost all the other ethnic groups in Ghana reside in the metropolis. The city has 919 pre-schools, 967 primary schools, 597 junior high schools, 52 senior high schools and 10 tertiary institutions. The percentage of literate population at the age of 11 years and older is about 89.5 percent whilst roughly 10 percent cannot read and write.

According to Kumasi Metropolitan Assembly (2014), the metropolis has a number of health care institutions in both public and private sectors. Moreover, the city has six major public hospitals including a teaching hospital, four quasi-health institutions, and six mission hospitals, thirteen industrial clinics, 180 private health institutions, 54 trained Traditional Birth Attendants (TBAs), nine maternal and child health centres and 168 outreach sites. The metropolis is not entirely urban but it is estimated that 48%, 46%, and 6% of the population are urban, peri-urban, and rural respectively.

The economic activities that sustain the population in the metropolis are services, industry and agriculture. The services sector is the lifeblood of the people, employing approximately 72 percent of the economically-active population. The various activities carried out in this sector include wholesale and retail and this has made the city the commercial hub of the country.

There are also scattered pockets of industries in the metropolis ranging from agglomerated small-scale food processing, mechanical garages, construction firms and wood processing companies. The sector employs about 23 percent of the population in the city. Finally, less than 10 percent of the population in the metropolis are engaged in agriculture.

Kumasi Metropolis was selected as a study site because it is the second largest commercial city in Ghana and is endowed with a wide variety of medicinal plants (GSS, 2014), which have engendered the establishment of a large number of plant-medicine companies in the metropolis.

4.7 Study Population

The population of a study comprises a full set of elements that possess the needed information, whilst the sampling frame is a complete list of all the elements in the population from which a sample can be drawn (Malhotra & Birks, 2007; Saunders *et al.*, 2007). The population of the study consists of herbal shops, herbal medicines and customers of herbal medicines.

The sampling frame comprises 80 licensed herbal shops, of which twenty (20) offer wholesale activities whilst 60 provide mainly retail services (Records of Traditional Medicine Practice Council, Kumasi, 2017). Three thousand, seven hundred and ten (3 710) customers (patients) who buy herbal medicines from the herbal shops on a daily basis (Records of 80 herbal shops, 2017) in the metropolis. The herbal medicines are mainly made up of ointments, mixtures (liquids) and capsules.

The licensed herbal shops are limited by law to sell only herbal medicines (Traditional Medicine Practice Council Act, 2000; ACT, 575). Although OTC chemical shops can retail both herbal medicinal products and orthodox medicines (Pharmacy Act, 1994; ACT 489), identification of customers who buy herbal medicines would have been difficult, and hence herbal shops were chosen

4.8 Sampling Strategy

Malhotra and Birks (2007) noted that a sample is a sub-group of the targeted population to be included in a study. Saunders *et al.* (2007) highlighted that researchers frequently use sampling

when they have tight timelines and also when it is impracticable and costly to collect data from the entire population.

Sampling techniques that are available to a researcher include non-probability and probability sampling. Probability sampling procedure indicates that the chance of each case in the population to be chosen can be determined and is equal for all the elements in the population. Conversely, non-probability sampling suggests that the opportunity for each case in the population to be picked is not known, and the researcher has to rely on personal judgment to select sample elements. In addition, it cannot be used to answer research questions and achieve objectives by making statistical inferences about the characteristics of the population. Nonprobability sampling techniques include quota sampling, purposive sampling and convenience sampling.

In this study, probability sampling was employed with the aim of achieving a statistically representative sample and also to test the hypotheses framed in the study (Ritchie & Lewis, 2003). Again, probability sampling was employed so that the results could be generalized to the population in the study (Malhotra & Birks, 2007) which the present study sought to achieve.

4.8.1 Sample Size Determination

This research relied on the framework proposed by Krejcie and Morgan (1970) on sample size determination to choose the number of participants of the research as well as the herbal shops to be included in the study.

- **Herbal Medicine Customers**

The total number of customers who usually buy herbal medicines on a daily basis from the 80 herbal shops in Kumasi stands at 3 710 (Records of 80 OTC herbal shops, 2017). Following the guidelines of Krejcie and Morgan's (1970) model with 95 % confidence level and 5% margin-of-error and the National Education Association (1960) cited by Krejcie and Morgan (1970) formula for determining sample size, a sample of 348 respondents was obtained. The 95 percent confidence level of certainty indicates that if the sample is selected hundred times, at least 95 percent of these samples would be certain to represent the characteristics of the population. The margin-of-error represents the precision of the estimates of the population (Saunders *et al.*, 2007).

Thus, the required sample size of the study;

$$n = \frac{X^2 N P (1 - P)}{d^2 (N - 1) + X^2 P (1 - P)},$$

Where;

X^2 = the table value of Chi-Square for 1 degree of freedom at the desired confidence level

$$X^2 = 3.841(1.96 \times 1.96)$$

N = the population size

P = the population proportion (assumed to be 0.50 since this would provide the maximum sample size) d = the degree accuracy expressed as proportion (0.05)

Given, the population size of the study = 3710

$$\text{Sample size} = \frac{X^2 N P (1 - P)}{d^2 (N - 1) + X^2 P (1 - P)},$$

$$\text{Sample size} = \frac{3.841 \times 3710 \times 0.50 (1 - 0.50)}{0.05^2 (3710 - 1) + 3.841 \times 0.50 (1 - 0.50)}$$

$$\text{Sample size} = \frac{3562.5272}{10.23275}$$

Sample Size = 348

- **Herbal Shops**

The total number of herbal shops in Kumasi Metropolis providing OTC services were 80, out of which 20 were offering both wholesale and retail services at the same time while 60 were engaging in only retailing. Considering the Krejcie and Morgan (1970) framework, by using 95 percent confidence level and 5 percent margin-of-error, a sample size of 19 was obtained from 20 wholesale herbal shops while 52 were also derived from 60 retail herbal shops. Consequently, a total sample size of 71 herbal shops was selected in this study.

Table 4. 1: Selected Wholesale Herbal Shops

<i>No.</i>	<i>Herbal Shops</i>	<i>Location</i>	<i>No.</i>	<i>Herbal Shops</i>	<i>Location</i>
1	Dannie Herbal Shop	Mbrom	11	Gilgal Herbal Shop	Ashanti New Town
2	Angelus Herbal	Ashanti New Town	12	Dannie Herbal Shop	Ashanti New Town
3	Blessed Requah	Ashanti New Town	13	Taabea Herbal Shop	Ashanti New Town
4	Fredimens Herbal	Adehyeman	14	Appi-Dank Herbal	Ashanti New Town
5	K & G Herbal Shop	Ashanti New Town	15	Collinak Herbal	Ashanti New Town
6	Ikof Herbal Centre	Ashanti New Town	16	Tops-High Herbal	Atonsus Monaco
7	Misty Herbal Shop	Ashanti New Town	17	Star Herbal Shop	Ashanti New Town
8	Sam & Co. Herbal	Kejetia	18	Top-Amazing Herbal	Tafo
9	Kyevic Herbal Shop	Ashanti New Town	19	Gidisas Herbal	Tafo
10	Collinak Herbal	Mbrom			

Table 4. 2: Selected Retail Herbal Shops

<i>No.</i>	<i>Herbal Shops</i>	<i>Location</i>	<i>No.</i>	<i>Herbal Shops</i>	<i>Location</i>
1	St. Michael Herbal	Old Tafo	27	McGee Herbal Shop	Santasi
2	Okai Herbal Ventures	Mpatasie	28	Nana Yaw Herbal	Amakom
3	Quality Health Care	Asawasi	29	Nananom Herbal	Tafo
4	Ofori Basoa Herbal	Central Market	30	Navel Osei Herbal	Pankrono
5	Savanna Health Shop	Aboabo	31	Star Markus Herbal	Tafo
6	St. Valentine Herbal	Bantema	32	Ponak Herbal Shop	Buokrom
7	Nananom Herbal	Tafo	33	Obrepomah Herbal	Kronom
8	Baseman Herbal Shop	Atonsus	34	My Queen Healing	Kronom Market
9	Fawus Herbal Shop	Nkontwima	35	Mojisto de Herbal	Ayigya
10	Costa Herbal Shop	Kejetia	36	Mr Boamah Herbal	Kejetia Market
11	Fosua Herbal Shop	Asafo	37	Vintex Herbal	Tafo
12	Dynasty Herbal Shop	Tafo Nhyiaso	38	B.T Royal Herbal	Dr Mensah
13	Favour of God Herbal	Kronom	39	Akyiaa & Asiedu Herbal	Tafo Market
14	Adutwumwaa Herbal	Asawasi	40	Eno Wireko Herbal	Amakom
15	Healing Herbal Shop	Atonsus Monaco	41	M. P Herbal Centre	Adehyeman
16	King Edward Herbal	Afrancho Market	42	Angel Herbal Shop	Ashanti New Town
17	Elshadai Herbal Shop	Breman U.G.C	43	Fawohobo Awurade	Amakom

18	Bemakosa Herbal	Buokrom Estate	44	Samkwof Herbal Shop	Tafo
19	K - Boat Herbal Shop	Atonsu Monaco	45	Mercifos Herbal Centre	Nkwatwimma
20	PBI Herbal Shops	Suame	46	Menaj Herbal Shop	Aboabo
21	Universal Care Herbal	Bantema	47	Action Herbal Shop	Asafo
22	A & C Herbal Shop	Ayigya	48	Angel Herbal Shop	Ashanti New Town
23	Caesar Herbal Shop	Kwadaso	49	K & G Herbal Shop	Atonsu Monaco
24	Young & Old Herbal	Dichemso	50	O & A Herbal Shop	Kentikrono
25	Wiselyn Herbal Shop	Buokrom Estate	51	Lukanji Herbal Shop	Atonsu Monaco
26	Solak Herbal Centre	Ayigya	52	Samkwof Herbal	Tafo

Source: 2017 Records of Traditional Medicine Practice Council (TMPC), Kumasi

4.8.2 Sampling Techniques

In the present study, the probability sampling techniques used consisted of systematic sampling and stratified random sampling.

4.8.2.1 Sampling I: Herbal Medicine Customers

Systematic sampling technique was employed to choose a sample of customers of herbal medicines to be included in the study. Systematic sampling involves choosing a sample at successive intervals from the sampling frame that are arranged in some respect. Thus, the sample is picked by choosing a random starting point and then subsequent elements are selected systematically by using the sampling fraction to determine the frequency of the selection. The sample fraction is determined by dividing the total population by the actual sample size (Saunders *et al.*, 2007; Malhotra & Birks, 2007). In the current study, the sample interval was determined by dividing the total population of 3 710 by the sample size of 348 ($3\ 710 \div 348 = 10.66$). Here, the first respondent was randomly selected and subsequently, one of every eleven cases entering the herbal shop was contacted until a sample size of 348 respondents was obtained.

Systematic sampling technique was chosen because it is less costly and saves time, more reliable and representative when the size of the population is large. More importantly, it can be used “without the knowledge of the elements in the sample frame” (Malhotra & Birks, 2007). The use of this sampling procedure in the current research is consistent with past research

(Pappu, Quester, & Cooksey, 2006), where systematic sampling was used to select participants of the study in a busy shopping mall in an Australian State Capital City.

4.8.2.2 Sampling II: Herbal Shops

Stratified random sampling was employed to pick the number of herbal shops to be included in the study. Here, stratified random sampling was used to obtain a sample size of 71 herbal shops in Kumasi Metropolis. Stratified random sampling involves dividing the population into relevant strata based upon specific characteristics of the elements of the population. A simple random sampling is taking from each stratum in a number proportional to the size of the stratum relative to the population. In this study, the strata were 20 wholesale and 60 retail herbal shops. The number of cases in the retail and wholesale shops was selected at random to obtain a sample size of 19 and 52 respectively. Stratified random sampling was chosen to ensure that each stratum is well-represented in the sample to increase the precision of the sample at lower cost (Malhotra & Birks, 2007).

Table 4.3 below provides the summary of the study population, sample frame, sample size and sampling strategies used in this research.

Table 4. 3: Summary of Sample Size and Method

Target Population	Sampling Frame	Confidence Interval	Margin-of – Error	Sample Size	Sampling Techniques
Herbal medicine customers	3 710	95%	5%	348	Systematic Sampling
Wholesale Herbal shops	20	95%	5 %	19	Stratified Sampling
Retail Herbal shops	60	95%	5%	52	

Source: Developed by the Researcher

4.9 Data Sources

Secondary data were gathered from industry records, books, journals and the internet, and were used to obtain relevant literature for the study to refine the research questions and objectives as well as interpret the findings from the data analysis. Primary data were gathered from the

selected customers of herbal medicines in the herbal shops to address the research questions to achieve the objectives.

4.9.1 Data Collection Instruments

It has been argued that the choice of appropriate research data gathering, and analysis methods depend on the paradigm and research questions employed in a study. The present study is designed to use the quantitative data collection method as it is aligned with the positivist/post positivist research paradigm (Mackenzie & Knipe, 2006). In this regard, data were gathered through questionnaires to ascertain the effect of packaging and the dimensions of brand equity on overall brand equity of herbal medicines sold at the OTC pharmaceutical market.

According to Malhotra and Birks (2007) a questionnaire is a structured procedure of data collection comprising a series of questions either in writing or verbal that a respondent answers. Questionnaires can be closed-ended, open-ended and a combination of closed-and open-ended questions. Open-ended questions permit participants to provide their own responses whilst closed-ended questions offer a number of alternative responses from which the participant is instructed to select (Clifford, French, & Valentine, 2010; Saunders *et al.*, 2007). Though, it is argued that open-ended questions provide in-depth and rich information, it is generally associated with qualitative research methodologies (Clifford *et al.*, 2010; Creswell, 2014).

Consequently, the present study relied on closed-ended questions because they are mostly associated with quantitative research methods (Creswell, 2014; Mertens, 2015). It has been highlighted that close-ended questions are a highly cost-effective data collection tool because they permit a sizable amount of data to be gathered from a larger population at a relatively lower cost. The data gathered also lends itself more to statistical analysis and interpretations (Fink, 2003 cited by Saunders *et al.*, 2007; Creswell, 2014; Mackenzie & Knipe, 2006). More importantly, the shoppers did not have time and therefore the pre-determined alternative answers made it easier and quicker for them to respond to the questions.

4.9.2 Questionnaire Design

The questionnaire was designed on the basis of the stated research questions with the view to achieving the stipulated research objectives. The initial section of the questionnaire captures the demographic characteristics of the participants which include age, sex, income, educational

and occupational background. The test instruments used to measure the income levels of the participants were taken from Fink, Weeks, and Hill (2012).

The second part of the questionnaire relied on a seven-point Likert scale ranging from extremely good (1) to extremely bad (7) to ascertain the respondents perceptions of packaging design of packaging in the OTC medicine market.

The next section of the questionnaire employed a five-point Likert scale anchored on strongly disagree (1) to strongly agree (5) to capture the perceptions of the research participants on packaging, perceived quality, overall brand equity, brand associations, brand loyalty and brand awareness. Six items were designed to measure customers` perceptions of packaging of herbal medicines. However, the test items for measuring overall brand equity and its constructs were obtained from previous test responses and modified. Table 4.4 below displays the test items of brand awareness, associations, loyalty, perceived quality and overall brand equity and their sources.

Five items employed to measure brand awareness were taken from Gil *et al.* (2007), Tong and Hawley (2009) and Yoo *et al.* (2000), while four test items of perceived quality were borrowed from Gil *et al.* (2007) and Yoo *et al.* (2000) and modified.

Moreover, five test items of brand associations were borrowed from Aaker (1996) and Tong and Hawley (2009), whilst six indicators of brand loyalty were designed by Tong and Hawley (2009) and Yoo *et al.* (2000) and modified. Finally, five test items of overall brand equity were obtained from Tong and Hawley (2009), Gil *et al.* (2007) and Yoo *et al.* (2000) and modified.

It has been emphasized that existing questionnaire with evidence of reliability and validity is cost-effective relative to developing new instrument (Kimberlin & Winterstein, 2008). All the questions were pre-coded including the response categories before the data collection in order to save time for coding after the data collection.

Table 4. 4: Test Items Development

	Latent Constructs	Sources	Adapted
Brand Awareness			
1	I can easily recognize X among other competing brands	Yoo <i>et al.</i> (2000)	√
2	Some characteristics of X come to my mind quickly	"	√
3	I am aware of X	"	√
4	When I think about this product, X is the first brand that comes to my mind	Gil <i>et al.</i> (2007)	√
5	I am familiar with X brand	Tong & Hawley (2009)	√
Perceived Quality			
1	The likelihood that X would functional is very high	Yoo <i>et al.</i> (2000)	√
2	The likelihood that X is reliable is very high	"	√
3	The quality of X is very high	Gil <i>et al.</i> (2007)	√
4	I can always trust on X if I want a product of high quality	"	√
Brand Associations			
1	The brand provides good value for the money	Aaker (1996)	√
2	I like the brand image of X	Tong & Hawley (2009)	√
3	X has very unique brand image, compared to competing brands	"	√
4	I like and trust the company, which makes X products	"	√
5	I respect and admire people who wear X	"	√
Brand Loyalty			
1	When buying athletic shoes, X would be my first choice	"	√
2	I would love to recommend X to my friends	"	√
3	I am still willing to buy X even if its price is a little higher than that of its competitors	"	√
4	I will keep on buying X as long as it provides me satisfied products	"	√
5	I consider myself to be loyal to X	Yoo <i>et al.</i> (2000)	√
Overall Brand Equity			
1	Even if another brand has same features as X, I would prefer to buy X.	"	√
2	If another brand is not different from X in any way, it seems smarter to purchase X	"	√
3	If there is another brand as good as X, I prefer to buy X	"	√

4	It makes sense to buy X instead of any other brand, even if they are the same in quality or price	Gil <i>et al.</i> (2007)	√
5	X is more than a product to me	Tong & Hawley (2009)	√

Source: Compiled by the Researcher

4.9.3 Questionnaire Pilot–Testing

In order to generate reliable and valid data, the questions were pilot-tested prior to its administration. Saunders *et al.* (2007) suggested that the number of pre-tests to be conducted and participants selected in the pilot studies depend on the research questions and objectives, time and financial resources available, the sample size and the quality of pilot questionnaires. Malhotra and Birks (2007) are of the view that the initial pilot-test sample size could be small ranging from 15 to 30 respondents. Fink (2003) cited by Saunders *et al.* (2007) also recommended that the least pilot sample size of 10 participants is adequate for most student questionnaire.

First, a pilot questionnaire was drafted and presented to the researcher`s University Peer Review Ethics Committee for preliminary assessment. This helped the researcher to establish the representativeness and suitability of the questionnaire in relation to the research questions. Subsequently, the questionnaire was distributed randomly to a pilot sample of 15 respondents in the field with the aim to identifying whether the responses to the questions corresponded to the intended purposes of the questions.

4.9.4 Questionnaire Administration

The questionnaires were administered face-to-face to the 348 respondents on the floor of 71 herbal shops in Kumasi. Here, the first customers entering the herbal shop was randomly selected and subsequently, one in every eleven customers entering the shop was intercepted until a sample size of 348 was obtained. The questions were also read to respondents who continued shopping while the responses provided were ticked.

4.9.5 Data Quality Control

It has been highlighted that the key determinants of quality of a data are reliability and validity of the data collection instruments (Kimberlin & Winterstein, 2008).

4.9.5.1 Test Instruments Reliability

Test instruments reliability relates to the ability of the instruments to yield stable and consistent outcomes when repeated measurements are made (Malhotra & Birks, 2007). Test reliability is also seen as the extent to which the test items of a construct is consistent or dependable (Bhattacharjee, 2012).

Kimberlin and Winterstein (2008) outline three approaches to evaluate reliability; test re-test, internal consistency and inter-rater reliability. Internal consistency is concerned with “the extent to which all the items in a test measure the same concept or construct and hence it is connected to the inter-relatedness of the items within the test” (Tavakol & Dennick, 2011: 53). Bhattacharjee (2012) also highlighted that internal consistency reliability is a measure of consistency between different test items of the same construct.

Nunnally (1975:10) stated that “reliability estimates based on internal consistency ignores changes over relatively short periods of time, but such estimates proved to be surprisingly accurate in most situations.” Consequently, the present study relied on internal consistency reliability to provide an objective measure of reliability of the data collection instruments. It is also argued that the most frequently used coefficient alpha for estimating the degree of internal consistency is Cronbach`s alpha coefficient (Saunders *et al.*, 2007; Nunnally, 1975; Kimberlin & Winterstein, 2008; Tavakol & Dennick, 2011). Hence, the Cronbach`s alpha was employed to estimate internal consistency reliability in this study.

Nunnally (1975) suggested an acceptable cut-off Cronbach`s alpha coefficient of 0.70 as a measure of internal consistency reliability of test instruments. However, it has been highlighted that a higher coefficient indicates a high level of internal consistency reliability of the instrument. Tavakol and Dennick (2011) concluded that the acceptable reliability values lie between 0.70 and 0.90, while values less than 0.70 indicate poor internal consistency reliability. On the contrary, Kline (2005) is of the view that reliability values close to 0.90 can

be considered as excellent, around 0.80 is very good while close to 0.70 is considered adequate.

Furthermore, the composite reliability was conducted to determine the construct reliability in the confirmatory factor analysis. Composite reliability is commonly used in conjunction with the structural equation model and it provides slightly superior scores of internal consistency reliability. It is computed as the sum of squared standardized regression weights for each latent variable and the sum of the error variance terms for a construct (Hair, Black, Babin, & Anderson, 2010). Likewise, the Cronbach alpha, the value of 0.70 or above indicates good construct reliability but scores between 0.6 and 0.70 are recognised as adequate (Bagozzi & Yi, 1988; Hair *et al.*, 2010).

4.9.5.2 Test Items Validity

Not only should test instruments be internally consistent but they should also demonstrate their ability to measure what they are purported to measure (Kimberlin & Winterstein, 2008; Saunders *et al.*, 2007).

In the current study, content validity and construct validity were employed to investigate the test instruments' validity. First, content validity was established by indicating that each item in the instrument adequately covers the domain of the constructs used in this research. The main constructs examined in this research include brand loyalty, brand awareness, perceived quality, brand association, packaging and brand equity. In order to ensure that the test items accurately cover these constructs, a careful definition of the test items through extensive examination of the relevant literature was undertaken.

Additionally, construct validity was undertaken to demonstrate the degree at which the test responses actually measure their respective constructs (Saunders *et al.*, 2007). Construct validity were established through exploratory and confirmatory factor analysis (Floyd & Widaman, 1995; Kline, 2005). Here, discriminant and convergent validity were established to provide evidence of construct validity.

Convergence validity indicates that multiple items that measure the same construct are strongly inter-related (Lehmann, 1988). Average Variance Extracted (AVE) was used to check the convergence validity of each of the constructs in the confirmatory factor analysis in this study.

Average variance extracted is calculated as the total of all the squared standardized factor loadings of the construct divided by the number of items. As a rule of thumb, the value of average variance extracted of 0.50 or higher suggests convergent validity (Fornell & Larcker, 1981; Hair *et al.*, 2010).

In contrast, discriminant validity relates to the degree at which a test items of theoretically distinct construct correlate less with items of other constructs from which it intends to differ (Malhotra & Birks, 2007). Discriminant validity was analysed by calculating the square root of the AVE and the squared correlation between a construct and any other constructs (Hair *et al.*, 2010). Discriminant validity is supported when the square root of the AVE is higher than the squared correlation estimates between a construct and any other constructs in the con model (*ibid*).

4.10 Exploratory Factor Analysis

Exploratory factor analysis (EFA) is commonly used procedure to develop and measure latent variables. Fabrigar and Wegener (2012) described factor analysis as set of statistical tools designed to identify the latent constructs underlying a battery of indicator items. The focus of the factor analysis is to determine the few latent variables that can replicate the original data (Gorsuch, 1997).

In this study, the questionnaire designed to answer the research questions to achieve the objectives were made up of multiple indicator items and unobserved variables. Hence, factor analysis was undertaken to identify the number of common factor underlying these multiple test items. It has also been emphasized that exploratory factor analysis can also guarantee reliable results of confirmatory factor analysis (Floyd & Widaman, 1995). As stated earlier, exploratory factor analysis was employed to establish test items` validity (Floyd & Widaman, 1995; Kline, 2005).

This is achieved by selecting those measured variables that are highly related to a specific construct (Gorsuch, 1997). Factor analysis procedure produces factor loadings which represent the correlations among the measured items and the constructs. It has been generally acknowledged that factor loadings exceeding 0.30 or 0.40 are considered significant in exploratory factory analysis (Floyd & Widaman, 1995). The authors further stated that, in

practice, coefficients at this level and above are often regarded as meaningful when the participants-to-variable ratio is between 5 and 10.

However, Hair, Black, Babin, and Anderson (2010) are of the view that loadings within the range of 0.30 or 0.40 are recognized as the lowest for the interpretation of the factor structure. The authors are of the view that loadings of 0.50 or above provide practical significance for factor analysis, while loadings exceeding 0.70 is regarded as a well-defined factor structure. However, in this study the factor loadings ranging between 0.30 and 0.40 or above were used due to a relatively large sample size and participants- to-indicator ratio (Hair *et al.*, 2010; Floyd & Widaman, 1995).

In order to keep the factor solution simple for easy interpretation, researchers have been using either orthogonal rotation methods which produce latent variables that are uncorrelated, or oblique rotation procedures which permit the constructs to correlate (Floyd & Widaman, 1995). In the present study, oblique rotation using oblimin and promax methods were considered suitable to achieve simple factor structure which is the core objective of factor rotation.

4.10.1 Confirmatory Factor Analysis

Confirmatory factor analysis (CFA) is a procedure for measuring the extent to which a proposed factor solution provides a good fit to the data and whether the model fits well, as parsimoniously as other models. In the current research, CFA was utilized to support a priori hypotheses generated from the findings of the exploratory factor analysis (Floyd & Widaman, 1995). As noted earlier, it was also used primarily to evaluate the construct validity measures in the study. Brown and Moore (2012) concluded that confirmatory factor analysis approaches to construct validity is preferable to conventional analytical methods, in that the resultant estimates of discriminant and convergence validity account for measurement errors.

Evidence of construct validity is indicated by the factor structure of the scale being consistent with the variables that the test items attempt to measure. The factor structure needs to be clearly hypothesised and then evaluated to determine its fit with the observed covariance structure of the measured variables.

Brown and Moore (2012) highlighted that CFA relates to the measurement model in the structural equation modelling, and it deals typically with the relationship between the indicator variables and the common factors. Floyd and Widaman (1995) also noted that the adequacy of confirmatory factor analysis can be evaluated through a number of goodness-of-fit indices.

Goodness-of-fit relates to how well the parameter estimates are able to replicate the relationships that are identified in the sample data (Brown & Moore, 2012). The overall model fit can be assessed through multiple absolute fit indices which underpin any factor model (Floyd & Widaman, 1995). However, Hooper, Coughlan, and Mullen (2008) highlighted that there is no consensus not only on the specific goodness-of-fit indices but also their cut-off criteria to adequately measure the plausibility of the model. In general, the common indices reported in the literature include chi-square statistic, goodness-of-fit index (GFI) and adjusted goodness-of-fit index (AGFI).

While, most recommended global goodness-of-fit indices are standardized root mean square residual (SRMR), root mean square error of approximation (RMSEA), Tucker-Lewis index (TLI), and comparative fit index (CFI) for one-time analysis (Floyd & Widaman, 1995; Schreiber, Stage, King, Nora, & Barlow, 2006).

4.11 Data Analysis Plan

After the data collection, all the questionnaires were edited to obtain clean and reliable data. The questionnaires were screened to identify and eliminate incomplete, poorly recorded and inconsistent or ambiguous responses to ensure completeness and accuracy. Since all the questions were pre-coded, the collation of responses for data analysis was made easier.

The data entry and final analysis were carried out by using IBM SPSS Amos (Analysis of Moment Structures) version 22. Covariance-based structural equation model, (in this case Amos) was adopted because it is recognized as an efficient method of analysing not only reflectively but also formatively-measured constructs (Diamantopoulos, 2011; Jarvis, Mackenzie & Podsakoff, 2003; MacCallum & Browne, 1993).

4.11.1 Data Analysis Procedure

Descriptive and inferential statistics were the main statistical tools used in this study.

4.11.2 Descriptive Statistics

It has been established that the purpose of descriptive statistics is not to make predictions but rather to describe and make comparison of the variables in a study. Data generated through the use of descriptive statistics are usually displayed by using graphs and tables, and computation of measures of central tendency and variability (Sheskin, 2004).

In the present study, descriptive statistics were utilized to explain and compare the demographic characteristics, perceptions of packaging and brands of plant medicines purchased by the participants through the use of frequency distribution tables. In addition, cross-tabulation was used to measure the interdependence between levels of participants` education, income and patronage of herbal medicines.

Chi-square test (X^2) was also employed to examine the likelihood that associations among education, income and frequency of patronage of herbal medicines could occur by chance factors. More importantly, it was used to test the statistical significance of the observed interdependence among participants` education, income and patronage of herbal medicines (Malhotra & Birks, 2007). According to Saunders *et al.* (2007), a probability value of 0.05 or less ($p < 0.05$) shows that the relationship that exists between the variables is significant. This implies that there is at least 95 percent certainty that the association between the two variables could not have occurred by chance alone.

4.11.3 Inferential Statistics

Sheskin (2004) emphasised that the employment of inferential statistics allows predictions or conclusions to be drawn from the larger population from which the sample was obtained. As a result, inferential statistics was employed through the use of factor analysis and structural equation modelling to test the significance of the hypotheses stated in the research.

4.11.3.1 Structural Equation Modelling

Structural equation modelling (SEM) has been increasingly used across many disciplines by researchers as a vital statistical technique and ingredient for testing theory as well as its building (Babin & Svensson, 2012). In their view, the structural equation modelling is a multivariate analytical tool used for specifying and assessing linear and /or “causal” relationships between multiple independent and dependent variables through a simultaneous multiple equation process. Byrne (2016) pointed out that SEM is a statistical tool that relies on a confirmatory procedure to measure structural theory relating to some phenomena. Hoyle (1995) described structural equation modelling as a statistical technique which offers a comprehensive approach of testing hypothesised relationships among indicators and latent factors.

Weston and Gore (2006) also highlighted that structural equation modelling is made up of two analytical procedures; the measurement model and structural model. The authors are of the view that, in the SEM procedure, the measurement model is the precursor of the structural model. Confirmatory factor analysis (CFA) is often used to analyse the measurement model. It defines the relationship between the indicator items and the respective latent factors that they are purported to measure. On the other hand, the structural model spells out the “causal” relations among the constructs as proposed in the theory. Essentially, the structural model defines the degree at which specific unobserved factors directly or indirectly influence changes in the estimates of other constructs in the model (Byrne, 2016).

The author further noted that the structural relations are indicated by a set of regression equations and are depicted pictorially to provide better conceptualization of the theory under the study. Thus, structural equation modelling is usually shown by a path diagram. The path diagram provides the summary of the hypothesized relationships among common factors and observed variables as well as the non-directional (correlational) and directional (regression) relationship among the unobserved factors (Bowen & Guo, 2012). In the path diagram, the indicator items are shown by rectangles while common factors are indicated by circles. In addition, the single-headed arrows illustrate the effect of one variable on another, whilst the double-headed arrows explain the correlations among the latent constructs.

Structural equation model analysis presents path coefficients to examine the statistical significance of individual structural paths which indicate the impact of a latent variable on another or a latent variable on an observed variable. The test of statistical significance of path

coefficient is determined by either t-statistic or z-statistic (Schreiber *et al.*, 2006). In this study, the test of statistical significance of the parameter estimates was determined at critical ratio greater than 1.96 at probability value of 0.05 or less, or at critical ratio greater than 2.58 at probability value of 0.001 or less (Timothy & Moore, 2012).

Furthermore, the maximum likelihood estimation method was used when conducting the structural equation modelling in the current study. Hu and Bentler (1999) highlighted that the maximum likelihood estimation procedure is widely used as it produces the best model-fit comparable to other estimation methods. It has also been emphasized that the maximum likelihood method has proven to offer reliable parameter estimates and is robust even under the violation of the assumption of normality (Hair *et al.*, 2010).

The present study relies on structural equation modelling to test the hypothesized relations posited in this research. It is most appropriate for the current research because the focus of the research is to analyse the relationship among multiple latent variables, each of which is represented by several indicators. These multiple constructs could be independent variable in one relationship and at the same time act as dependent in another relationship (Hair *et al.*, 2010). In the current research, packaging, brand equity and its dimensions are latent variables, each is represented by multiple indicator variables. The relationship between packaging and brand equity is mediated by the dimensions of brand equity.

In addition, structural equation modelling was employed because of the following advantages it has over the other conventional methods of analysing multivariate data. Long (1983) emphasized that structural equation modelling is a flexible technique that can deal with a variety of essential statistical applications. Byrne (2016) highlighted that while the conventional multivariate methodologies are unable to either assess or eliminate measurement errors, the SEM procedures offer clear estimates of these error variances in the parameters. Secondly, structural equation modelling permits the entire model to be tested statistically through a simultaneous analysis to examine the degree at which it is consistent with the data. The author further argued that the model is deemed plausible if the goodness-of-fit is adequate while the model is rejected if the goodness-of-fit indices are inadequate.

Besides, whereas traditional methods of analysing data is based on the measurement of indicator variables only, SEM models can combine both latent variables and indicator

variables. Moreover, Bowen and Guo (2012) established that SEM permits the simultaneous regression of equations in which the relationship between the exogenous variable and the endogenous variable is hypothesized to be partially or fully explained by mediating variables. The authors further stated that, unlike traditional regression models, SEM can estimate regression relationships among common factor and between indicator variables and unobserved factors simultaneously. Moreover, as a confirmatory method, SEM provides a comprehensive procedure to evaluate and modify theoretical models which has the potential to further theory development (Anderson & Gerbing, 1988).

4.12 Ethical Considerations

The consent of all the participants of the research was obtained by engaging them to complete informed consent forms to indicate their desire to participate in the research. The informed consent document specified the nature and purpose of the research, and also provided the address of the researcher as well as the institution where the researcher was studying, to the participants for any further queries. The purpose of the informed consent form was to ensure that the participants understood fully what they were participating in.

Furthermore, the researcher assured the participants that the data provided by them would not be used for any other purposes other than academic research, and that their names and identity would not be disclosed in the research without their full consent. The participants were also made to understand that they could withdraw anytime from participating in the study. This assurance served as catalyst for obtaining credible and honest data from the respondents. More importantly, in consonance with the rules of the university, ethical clearance certificate (Reference No: *HSS/1922/017D*) was obtained which served as a pre-condition for conducting the research within the confines of the university. Finally, authors whose publications were used in the research were acknowledged by referencing their work in the thesis.

4.13 Chapter Summary

This chapter explains the research methodology used for the study. The research paradigm, research design and approach as well as the data collection instrument used have been discussed. Not only this, the chapter also provided a detailed explanation of the procedure employed to select participants of the research for the purpose of gathering data from them,

while highlighting ethical issues considered during the research. In addition, statistical tools used during the data analysis were highlighted. Validity and reliability of the test responses were also examined in order to generate accurate and consistent results with different population samples. The ensuing chapter will present the analysis of the data gathered with the view to generating information useful to answer the research questions.

CHAPTER FIVE

DATA ANALYSIS AND PRESENTATION OF RESULTS

5.1 Introduction

The study investigated the influence of packaging and brand equity of herbal medicines in the OTC medicine market. In this regard, customers' perceptions of packaging of medicinal herbal products sold at the OTC pharmaceutical market were examined. The study further sought to determine the brand equity of herbal medicines in the OTC drug market. Based on the research's conceptual framework, hypotheses were formulated and later tested.

The current chapter provides the findings of the analysis of the data gathered through the survey questionnaire completed by 348 respondents in the OTC medicine market in Kumasi Metropolis, Ghana. Specifically, this chapter provides the results of the demographic characteristics of the respondents, perceptions of the participants on the packaging of plant medicines, examines and validates the test instruments and analyses the proposed hypotheses drawn from the study's conceptual model. This chapter provides the findings generated from descriptive and inferential statistics, specifically, exploratory factor analysis and structural equations modelling using IBM SPSS Amos 22, to provide the basis for discussions in Chapter Six. It is pertinent to add that this chapter does not draw any implications from the results nor does it discuss the results as these will be addressed in Chapter Six.

5.1.1 Research Objectives

The objectives of the research were:

- ❖ To examine customers' perceptions of packaging of herbal medicine in the OTC market in Kumasi
- ❖ To examine the brand equity of herbal medicines in the OTC drug market in Kumasi.
- ❖ To examine the influence of packaging on brand awareness in the OTC market in Kumasi.
- ❖ To examine the influence of packaging on brand associations in the OTC drug market in Kumasi.
- ❖ To examine the influence of packaging on perceived quality in the OTC drug market in Kumasi.

- ❖ To examine the influence of packaging on brand loyalty in the OTC drug market in Kumasi.

5.1.2 Research Questions

Based on the research objectives, the research questions that guided the study were:

- ❖ What is the customers' perceptions of packaging of herbal drugs in the OTC market in Kumasi?
- ❖ What influence does a brand of herbal medicine have on overall brand equity in the OTC drug market in Kumasi?
- ❖ To what extent does packaging influence brand awareness in the OTC pharmaceutical market in Kumasi?
- ❖ How does packaging influence brand associations in the OTC medicine market in Kumasi?
- ❖ To what extent does packaging influence perceived quality in the OTC drug market in Kumasi?
- ❖ How does packaging influence brand loyalty in the OTC pharmaceutical market in Kumasi?

5.1.3 Study Hypotheses

- H1a: Packaging positively and significantly influence brand awareness
- H2a: Packaging positively and significantly influence brand association
- H3a: Packaging positively and significantly influence perceived quality
- H4a: Packaging positively and significantly influence brand loyalty
- H1b: Brand awareness positively and significantly influence overall brand equity
- H2b: Brand association positively and significantly influence overall brand equity
- H3b: Perceived quality positively and significantly influence overall brand equity
- H4b: Brand loyalty positively and significantly influence overall brand equity

5.2 Response Rate

Out of a total number of 348 questionnaires that were administered to respondents in the OTC drug market in Kumasi Metropolis, a total of 316 were returned. A total of 307 were deemed usable for the analysis which represents 88 percent out of the total of 348. Table 5.1 illustrates

the summary of the responses of questionnaires administered to participants in the OTC medicine market.

Table 5. 1: Summary of the Response Rate

No. of Questionnaires	Total Number	Valid Percent
Total number of questionnaires distributed	348	100
Total number of questionnaires returned	316	90.8
Usable questionnaires	307	88.0

Source: Developed by Researcher

5.3 Data Quality Controls

In order to ensure that the data collection instruments achieve their intended purpose in a consistent manner, issues of data validity and reliability were undertaken.

5.3.1 Reliability of Test Instruments

Malhotra and Birks (2007) highlighted that the test instruments for measuring constructs in a study need to undergo a reliability test to determine whether the test responses yield stable and consistent outcomes when repeated measurements are made. As result, the internal consistency reliability of the test instruments for measuring the latent constructs in this study were analysed by Cronbach`s alpha and composite reliability statistics.

5.3.2 Reliability of Test Instruments of Packaging and Brand Equity

Table 5.2 below presents the results of the Cronbach`s alpha and composite reliability statistics of test instruments of packaging, brand awareness, brand association, brand quality, overall brand equity and brand loyalty. First, the internal consistency reliability of the test responses of overall brand equity, brand awareness, brand association, brand loyalty, perceived quality and packaging that were produced by the exploratory factor analysis were analysed through Cronbach`s alpha statistics. The Cronbach`s alpha value of brand awareness is 0.770, brand association is 0.724, perceived quality is 0.848, brand loyalty is 0.803, packaging is 0.845 and overall brand equity is 0.857. The results in this sample demonstrate that all the indicators of packaging, overall brand equity, brand association, brand awareness, perceived quality and

brand loyalty have Cronbach's alpha coefficient above 0.70, indicating that all the test items have good internal consistency reliability (Hair *et al.*, 2010; Kline, 2005).

Moreover, composite reliability statistics was employed to determine the construct reliability of the confirmatory factor analysis (Bagozzi & Yi, 1988; Hair *et al.*, 2010). It is recommended that a value of 0.70 or above indicates good reliability but values between 0.6 and 0.70 are regarded as adequate (Bagozzi & Yi, 1988; Hair *et al.*, 2010). The results from Table 5.2 show that the composite reliability coefficient of brand awareness is 0.770, brand association is 0.685, perceived quality is 0.851, brand loyalty is 0.807, packaging is 0.756 and overall brand equity is 0.823. These results show that all the constructs in the confirmatory factor analysis have satisfactory levels of construct reliability. This outcome is consistent with the results of an empirical study (Tong & Hawley, 2009) which indicated that coefficients ranging between 0.60 and 0.76 satisfied the criteria of composite reliability. This outcome suggests that the results of the path estimates are reliable.

Table 5. 2: Results of Reliability Test Items of Packaging and Brand Equity

Variables	No. of Initial Items	Cronbach`s Alpha Estimate	No. of Final Items	Composite Reliability Estimate
Brand awareness	3	0.770	3	0.770
Packaging	6	0.845	3	0.756
Brand association	3	0.724	2	0.685
Perceived quality	2	0.848	2	0.851
Brand equity	5	0.857	3	0.823
Brand loyalty	3	0.803	3	0.807

Source: Primary Data

5.3.4 Construct Validity of Packaging and Brand Equity Constructs

The test instruments are not only measured for internally consistency but also to show their ability to measure what they are theoretically designed to measure (Kimberlin & Winterstein, 2008; Saunders *et al.*, 2007). Accordingly, convergent and discriminant validity were measured to determine the construct validity of the model. The findings of the exploratory factor analysis provided a test of discriminant validity as all the indicator items loaded higher on their respective constructs than the remaining constructs in the factor solution (Hair, Ringle, &

Sarstedt, 2011). Furthermore, the findings of the CFA offer support for construct validity as all the indicators loaded on their specific common factors and their factor loadings were statistically significant (Anderson & Gerbing, 1988; Hair *et al.*, 2010; Kline 2005).

Furthermore, AVE was also used to further confirm the convergent validity of brand quality, brand awareness, brand associations, overall brand equity, brand loyalty and packaging. The summary of the AVE for the constructs are shown in Table 5.3 below. The results show that the AVE of brand association is 0.522, brand awareness is 0.528, perceived quality is 0.741, packaging is 0.514, brand loyalty is 0.584 and overall brand equity is 0.608. These results indicate that all the latent variables have AVE more than 0.50 which suggests satisfactory convergent validity (Fornell & Larcker, 1981; Hair *et al.*, 2010).

Table 5.3 also reveals the findings of discriminant validity of the constructs in the measurement model. The results indicate that the square root of the AVE were higher than the squared correlation estimates between a construct and any other constructs which demonstrate independence between the constructs (Hair *et al.*, 2010). These results show that brand awareness, association, perceived quality, loyalty and brand equity and packaging are valid constructs in the measurement model in this sample.

Table 5. 3: Results of Construct Validity of Packaging and Brand Equity

Constructs	Average Variance Extracted	Brand Awareness	Brand Association	Perceived Quality	Brand Loyalty	Brand Equity	Packaging
Brand Awareness	0.528	0.727**					
Brand Association	0.522	0.346	0.722**				
Perceived Quality	0.741	0.406	0.393	0.861**			
Brand Loyalty	0.584	0.442	0.472	0.527	0.764**		
Brand Equity	0.608	0.581	0.536	0.398	0.656	0.779**	
Packaging	0.514	0.472	0.254	0.243	0.308	0.364	0.717**

Notes: ** = Square Root of AVEs; Off-diagonal estimates represent the Squared Inter-Construct Correlations

5.4 Demographic Structure of Respondents

The demographic structure of the participants relates to the gender, age, education, occupation and income levels of the respondents of the research. This provides a clear understanding of the profile of the people who took part in the study.

5.4.1 Gender Characteristics

Table 5.4 reveals the results of the gender characteristics of the respondents. Out of the total number of 304 respondents, 68.4% (208) were male while 31.6% (96) were female. This indicates that majority of the respondents were male. However, three of the participants did not provided information about their gender characteristics.

Table 5. 4: Gender Characteristics of Respondents

Gender		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	208	67.8	68.4	68.4
	Female	96	31.3	31.6	100.0
	Total	304	99.0	100.0	
Missing	System	3	1.0		
Total		307	100.0		

Source: Primary Data

5.4.2 Age Structure of Respondents

Table 5.5 below indicates the age distribution of the respondents. The results show that out of the total of 305 respondents who were between the ages of 18 and 25 years were 40.7 % (124), between 26 and 35 were 37.7% (115), between 36 and 45 were 10.8% (33), between 46 and 60 were 5.9% (18) and those above 60 years were 4.9% (15). This reveals that the majority of the participants were between the ages of 18 and 25, followed by 26 to 35 and the least were those above 60 years.

Table 5. 5: Respondents` Age Distribution

Age (Years)		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18–25	124	40.4	40.7	40.7
	26–35	115	37.5	37.7	78.4
	36–45	33	10.7	10.8	89.2
	46–60	18	5.9	5.9	95.1
	More than 60	15	4.9	4.9	100.0
	Total	305	99.3	100.0	
Missing System		2	0.7		
Total		307	100.0		

Source: Primary Data**5.4.3 Educational Characteristics of Respondents**

Table 5.6 below illustrates the educational background of the participants of the study. The results show that 12.7% (39) of the respondents had basic education, 39.2% (120) had secondary education, 20.3% (62) had diploma education and 27.8% (85) had tertiary education. Overall, the results show that majority of the participants of the study had secondary education, followed by tertiary education and the lowest was basic education.

Table 5. 6: Educational Characteristics of Respondents

Educational Distribution		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Basic	39	12.7	12.7	12.7
	Secondary	120	39.1	39.2	52.0
	Diploma	62	20.2	20.3	72.2
	Tertiary	85	27.7	27.8	100.0
	Total	306	99.7	100.0	
Missing System		1	0.3		
Total		307	100.0		

Source: Primary Data

5.4.4 Occupational Distribution of Respondents

Table 5.7 indicates the occupational structure of the participants of the study. The results show that the number of respondents who were engaged in teaching were 16.0 (48), in trading were 36.7% (110), in artisanal work were 4.0% (12), in farming were 2.7% (8), in clerical work were 0.7% (2), in security services were 2.0% (6), in managerial work were 5.0% (15) and others were 33.0% (99). This demonstrates that majority of the respondents were traders, followed by those in other professions and the least were clerks.

Table 5. 7: Respondents` Occupational Distribution

Occupational Distribution		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Teaching	48	15.6	16.0	16.0
	Trading	110	35.8	36.7	52.7
	Artisan	12	3.9	4.0	56.7
	Farmer	8	2.6	2.7	59.3
	Clerk	2	.7	.7	60.0
	Security	6	2.0	2.0	62.0
	Manager	15	4.9	5.0	67.0
	Others	99	32.2	33.0	100.0
	Total	300	97.7	100.0	
Missing	System	7	2.3		
Total		307	100.0		

Source: Primary Data

5.4.5 Respondents` Expenditure per Day

Table 5.8 indicates the results of income spent on goods and services by the respondents on themselves on a daily basis. The results show that the respondents who spent less than US\$1 in a day were 8.1% (23), US\$1 to less than US\$2 were 26.7% (76), US\$2 to less than US\$4 were 20.7% (59) and greater than or equal to US\$4 were 44.6% (127). This reveals that the majority of the participants spent US\$4 and more, followed by those whose expenditures were US\$1 to less than US\$2 and the least were those who spent less than US\$1 in a day. The results indicate that 34.7% of the respondents who buy herbal medicines were extremely poor whereas

65.3% of the respondents were above the international poverty line of US\$1.90 (World Bank, 2016).

Table 5. 8: Income Spent by Respondents per Day

Income Spent per Day		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than US\$1	23	7.5	8.1	8.1
	US\$1 to less than US\$2	76	24.8	26.7	34.7
	US\$2 to less than US\$4	59	19.2	20.7	55.4
	Greater than or equal to US\$4	127	41.4	44.6	100.0
	Total	285	92.8	100.0	
Missing	System	22	7.2		
Total		307	100.0		

Source: Primary Data

5.5 Herbal Medicines Purchased from the OTC Medicine Market

This section presents the significant findings of herbal medicines purchased from the OTC medicine market in Kumasi Metropolis. The plant medicines were grouped into creams (ointments), capsules and mixtures (liquids) as presented below.

5.5.1 Capsules of Herbal Medicines

Table 5.9 below (as shown in Appendix 1A) indicates the amount of capsules of herbal medicines bought by participants from the OTC medicine market in the Kumasi Metropolis. The results show that 21.6% of Tinattet capsules was bought, 17.9 % of Givers capsules was bought whilst 7.1% of Kingdom, 7.1% of Samenk and 7.1 % Zipman capsules were bought, out of a total of 28 capsules of herbal medicines. The results further indicate that the leading brand was Tinattet followed by Givers and least were Kingdom, Samenk and Zipman capsules.

Table 5. 9: Capsules of Herbal Medicines

Herbal Medicine Capsules	Frequency	Valid Percent
Givers Capsules	5	17.9
Kingdom Capsules	2	7.1
Samenk Capsules	2	7.1
Tinatett Capsules	6	21.4
Zipman Capsules	2	7.1

Source: Primary Data**5.5.2 Creams / Ointment of Herbal Medicines**

Table 5.10 (as depicted in Appendix 1B) reveals quantities of herbal medicines in the form of ointment bought by respondents from the OTC medicine market in Kumasi. The results show that 28.6% of Angel herbal cream was purchased whilst 14.3% of Ebenezer herbal ointment, 14.3% of Laud herbal ointment and 14.3 % of Mercy herbal cream were bought out of the total of 14 creams/ointments. It can be observed that Angel herbal cream was the leading brand among the plant medicines made up of creams/ointment sold at the OTC medicine market.

Table 5. 10: Creams / Ointment of Herbal Drugs

Herbal Medicine Creams	Frequency	Valid Percent
Angel herbal cream	4	28.6
Ebenezer ointment	2	14.3
Laud herbal ointment	2	14.3
Mercy herbal cream	2	14.3

Source: Primary Data**5.5.3 Mixtures/ Liquids of Herbal Medicines**

Table 5.11 (as exhibited in Appendix 1C) shows the percentage of mixtures/liquids of herbal medicines bought by the participants from OTC market in Kumasi. The results indicate that 41.0% of Taabea herbal mixture, 16.8% of Time herbal mixture and 9.8% of Adutwumwaa herbal mixture were bought from the OTC medicine market. The rest were 4.1% of Adom herbal mixture, 3.7% of Solak herbal mixture, 2.0% of Givers herbal mixture, 1.6% of Sparnis herbal mixture and 1.2% of Rooter mixture which were purchased out of a total of 244 herbal

mixtures. The results further indicate that the brand that leads the market for herbal mixture was Taabea herbal mixture followed by Time herbal mixture.

Table 5. 11: Mixtures / Liquids of Herbal Medicines

Herbal Drug Mixtures	Frequency	Valid Percent
Adom herbal mixture	10	4.1
Adutwumwaa herbal mixture	24	9.8
Givers herbal mixture	5	2.0
Solak herbal mixture	9	3.7
Taabea herbal mixture	100	41.0
Time herbal mixture	41	16.8
Sparnis Garlic mixture	4	1.6
Rooter mixture	3	1.2

Source: Primary Data

5.6 Herbal Medicines Patronage

The results from Table 5.12 below show the frequency at which the respondents buy herbal medicines from the OTC market. The results indicate that 76.3% (219) of the participants often buy plant medicines while 23.7% (68) seldom buy these. This shows that the majority of the participants of the study exhibited repeated-buying of herbal medicines.

Table 5. 12: Do you frequently buy herbal drugs?

Responses		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	219	71.3	76.3	76.3
	No	68	22.1	23.7	100.0
	Total	287	93.5	100.0	
Missing System		20	6.5		
Total		307	100.0		

Source: Primary Data

5.6.1 Relationship between Expenditure per Day and Patronage of Herbal Medicines

Table 5.13 below shows the results of interdependence between the respondents' expenditure per day and their patronage of herbal medicines in the OTC market in Kumasi. The results indicate that 90.5% of the respondents who spent less than a US\$1 in a day often purchased plant medicines while 9.5% did not frequently buy. Moreover, 78.6% of participants who spent US\$1 to less than US\$2 frequently bought herbal medicines from the OTC market but 21.4% seldom bought. In addition, 71.9% of the respondents who spent US\$2 to less than US\$4 regularly patronized herbal medicines in the OTC market whereas 28.1% did not consistently buy herbal medicines from the OTC market. Finally, 77.1% of the participants of the study whose expenditures were greater than US\$4 in a day repeatedly purchased herbal medicines from the OTC market, whereas 22.9% seldom bought. Overall, 77.4% of the respondents across all levels of income frequently bought herbal medicines from the OTC drug market while 22.6% were not regular customers of plant medicine.

Table 5. 13: Cross-tabulation of Income Spend per Day and Patronage of Herbal Medicine

			Do you frequently buy herbal drugs?		Total	
			Yes	No		
Expenditure per Day	Less than US\$1	Count	19	2	21	
		% within	90.5%	9.5%	100.0%	
	US\$1 to less than US\$2	Count	55	15	70	
		% within	78.6%	21.4%	100.0%	
	US\$2 to less than US\$4	Count	41	16	57	
		% within	71.9%	28.1%	100.0%	
	Greater than or equal to US\$4	Count	91	27	118	
		% within	77.1%	22.9%	100.0%	
	Total		Count	206	60	266
			% within	77.4%	22.6%	100.0%

Source: Primary Data

5.6.2 Chi-Square Test of Income Spent per Day and Patronage of Herbal Medicine

Table 5.14 presents the results of Chi-square test to determine the association between respondents' expenditure per day and their patronage of herbal medicines occurring by chance factors alone. The Pearson chi-square test of 4.167 with degree of freedom of 4 and probability value of 0.384 demonstrates that the observed relationship between income spent per day and frequency of patronage of herbal medicines is not significant at $p < 0.05$ level (Saunders *et al.*, 2007). This shows that there is no relationship between the respondents' expenditure per day and frequency of purchases of herbal medicines. Thus, participants' repeated patronage of plant medicines in the OTC market does not depend on the level of their incomes.

Table 5. 14: Results of Chi-square Test of Income Spent per Day and Patronage of Herbal Medicine

	Value	df	Asymp. Sig. (2-Sided)
Pearson Chi-square	4.167	4	0.384
No. of valid cases	266		

Significant at $p < 0.05$

Source: Primary Data

5.6.3 Respondents' Education Level and Frequency of Patronage of Herbal Medicines

Table 5.15 shows the results of association between the respondent's educational background and their frequency of patronage of herbal medicines. The findings in Table 5.15 demonstrate that 91.7% of the participants who had basic education frequently bought herbal medicines from the OTC market while 8.3% did not. Moreover, 71.2% of the participants who hold secondary education regularly bought herbal medicines whereas 28.8% seldom bought. Furthermore, 75.9% of the respondents who had diploma education often bought herbal medicines whilst 24.1% did not. Finally, 77.8% of the participants of the research who hold tertiary education repeatedly bought herbal medicines from the OTC medicine market whilst 22.2 % seldom purchased. Overall, a greater majority of the respondents (76.6%) across all levels of education frequently patronized herbal medicines from the OTC market.

Table 5. 15: Cross-tabulation of Respondents` Education and Herbal Drugs Patronage

			Do you frequently buy herbal drugs?		Total
			Yes	No	
Educational Background	Basic Education	Count	33	3	36
		% within	91.7%	8.3%	100.0%
	Secondary Education	Count	79	32	111
		% within	71.2%	28.8%	100.0%
	Diploma Education	Count	44	14	58
		% within	75.9%	24.1%	100.0%
	Tertiary Education	Count	63	18	81
		% within	77.8%	22.2%	100.0%
Total		Count	219	67	286
		% within	76.6%	23.4%	100.0%

Source: Primary Data

5.6.4 Chi-square Statistic of Level of Education and Patronage of Herbal Medicines

Table 5.16 presents the results of chi-square test to determine whether the relationship between the level of education of the respondents and their frequency of patronage of herbal medicines is statistically significant. The Pearson chi-square test of 3.092 with a degree of freedom of 3 and probability of 0.378 show that the relationship between participants` level of education and frequency of patronage of herbal medicines is not statistically significant at $p < 0.05$ (Saunders *et al.*, 2007). Thus, the repeated-buying behaviour of the respondents of herbal medicines does not depend on their levels of education.

Table 5. 16: Results of Chi-square Test of Level of Education and Patronage of Herbal Medicine

	Value	df	Asymp. Sig. (2-Sided)
Pearson Chi-Square	3.092	3	0.378
No. of Valid Cases	266		

Significant at $p < 0.05$

5.7 Objective One: To Examine Customers` Perceptions of Packaging of Herbal

Medicines Sold at the OTC Market in Kumasi

This section provides the results of the participants` perceptions of overall packaging of herbal drugs and its elements in the OTC market in Kumasi.

5.7.1 Packaging Colour

Table 5.17 below depicts the results of the views of respondents on the quality of the packaging colour of herbal medicines in the OTC medicine market in Kumasi. The results indicate that out of a total of 291, 34.0% (99), 33.7% (98) and 22.3% (65) of the respondents perceive that packaging colour of herbal medicines is extremely good, very good and good respectively. However, 10.0% (29) of the participants are of the view that packaging colour is neither good nor bad. Generally, the impression of a large majority (90%) of the respondents is that the packaging colour of herbal medicines is of good quality.

Table 5. 17: Respondents` Perception of Packaging Colour

Responses		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Extremely good	99	32.2	34.0	34.0
	Very good	98	31.9	33.7	67.7
	Good	65	21.2	22.3	90.0
	Average	29	9.4	10.0	100.0
	Total	291	94.8	100.0	
Missing	System	16	5.2		
Total		307	100.0		

Source: Primary Data

5.7.2 Packaging Photography

Table 5.18 below indicates the participants` perceptions of the packaging photography of plant medicines in the OTC medicine market in Kumasi Metropolis. The results show that 17.2% (49), 41.1% (117) and 26.0% (74) of the respondents perceived the packaging photography as extremely good, very good and good respectively. However, 13.3% (38) of the participants consider the packaging photography as neither good nor bad, whereas 1.1% (3) and 1.4% (4)

perceive it as bad and very bad respectively. The findings further show that majority (84.3%) of the participants perceive packaging photography as good quality whilst 2.5% consider it as bad.

Table 5. 18: Respondents` Perception on Packaging Photography

Responses		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Extremely good	49	16.0	17.2	17.2
	Very good	117	38.1	41.1	58.2
	Good	74	24.1	26.0	84.2
	Average	38	12.4	13.3	97.5
	Bad	3	1.0	1.1	98.6
	Very bad	4	1.3	1.4	100.0
	Total	285	92.8	100.0	
Missing	System	22	7.2		
Total		307	100.0		

Source: Primary Data

5.7.3 Printed Information

Table 5.19 below shows the results of the respondents` perceptions of the printed information on the packaging of herbal medicines distributed at OTC market in Kumasi. The results indicate that 23.4% (68), 34.5% (100) and 26.2% (76) of the participants are of the opinion that printed information on the packaging of herbal medicines sold at the OTC pharmaceutical market is extremely good, very good and good respectively. However, 13.1% (38) of the respondents perceive the printed information on the packaging as neither good nor bad while 2.8% (8) consider it as bad. The results further demonstrate that greater majority (84.1%) of the respondents are of the opinion that printed information on the packaging of plant medicines sold at the OTC drug market is of good quality whereas 2.8% perceive it as bad.

Table 5. 19: Respondents` View on Printed information

Responses		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Extremely good	68	22.1	23.4	23.4
	Very good	100	32.6	34.5	57.9
	Good	76	24.8	26.2	84.1
	Average	38	12.4	13.1	97.2
	Bad	8	2.6	2.8	100.0
	Total	290	94.5	100.0	
Missing	System	17	5.5		
Total		307	100.0		

Source: Primary Data

5.7.4 Packaging Material

Table 5.20 below provides the results on the views of respondents on the durability of the packaging material of herbal medicines sold at the OTC medicine market in Kumasi. The results reveal that 17.2% (50), 38.6% (112), 30.3% (88) and 10.0% (29) of the respondents perceive the packaging material as extremely good, very good, good and neither good or bad respectively. However, 2.4% (7), 1.0% (3) and 0.3% (1) consider the packaging material of plant medicines as bad, very bad and extremely bad respectively. Generally, the perception of a large majority (86.2%) of the participants is that the materials used for packaging of herbal medicines are of good quality but 3.7% are of the opinion that they are bad.

Table 5. 20: Respondents` Perception of Packaging Material

Responses		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Extremely good	50	16.3	17.2	17.2
	Very good	112	36.5	38.6	55.9
	Good	88	28.7	30.3	86.2
	Average	29	9.4	10.0	96.2
	Bad	7	2.3	2.4	98.6
	Very bad	3	1.0	1.0	99.7
	Extremely bad	1	0.3	0.3	100.0
	Total	290	94.5	100.0	
Missing	System	17	5.5		
Total		307	100.0		

Source: Primary Data

5.7.5 Packaging Typography

Table 5.21 presents the perceptions of respondents on the packaging typography of herbal medicines sold at the OTC medicine market in Kumasi Metropolis. The results indicate that 17.7% (50), 35.0% (99) and 29.7% (84) of the participants are of the opinion that the packaging typography is extremely good, very good and good respectively. However, 13.4% of the participants are of view that packaging typography is neither good nor bad, while 3.5% (10) and 0.7% (2) consider it as bad and very bad respectively. Overall, the results demonstrate that a greater majority (82.3%) of the participants perceived the packaging typography as good quality, whilst 4.2% are of the view that it is bad.

Table 5. 21: Respondents` Perception of Packaging Typography

Responses		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Extremely good	50	16.3	17.7	17.7
	Very good	99	32.2	35.0	52.7
	Good	84	27.4	29.7	82.3
	Average	38	12.4	13.4	95.8
	Bad	10	3.3	3.5	99.3
	Very bad	2	.7	.7	100.0
	Total	283	92.2	100.0	
Missing	System	24	7.8		
Total		307	100.0		

Source: Primary Data

5.7.6 Packaging Shape and Size

Table 5.22 shows the results of participants` impression on packaging shape and size of plant medicines distributed at OTC medicine market in Kumasi. The results show that, out of a total of 288 respondents, 18.4% (53), 30.9% (89) and 24.3% (70) consider the packaging shape and size as extremely good, very good and good respectively. However, 22.9% (66) of the respondents are of the opinion that the packaging shape and size is neither good nor bad whereas 3.1% (9) and 0.3% (1) perceive it as bad and very bad respectively. Overall, a greater majority (73.6%) of the participants are of the view that the packaging shape and size of herbal medicines sold in the OTC pharmaceutical market in Kumasi is of good quality whilst 3.4% perceive it as bad.

Table 5. 22: Respondents` Perception of Packaging Shape and Size

Responses		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Extremely good	53	17.3	18.4	18.4
	Very good	89	29.0	30.9	49.3
	Good	70	22.8	24.3	73.6
	Average	66	21.5	22.9	96.5
	Bad	9	2.9	3.1	99.7
	Very bad	1	0.3	0.3	100.0
	Total	288	93.8	100.0	
Missing	System	19	6.2		
Total		307	100.0		

Source: Primary Data

5.7.7 Overall Packaging of Herbal Medicine

Table 5.23 below indicates the impressions of the participants on the overall packaging of herbal medicines in the OTC drug market in Kumasi. The results reveal that 25.5% (74), 37.6% (109), 25.9% (75) and 9.0% (26) of the respondents are of view that the packaging of plant medicines distributed at Kumasi are extremely good, very good, good and neither good nor bad respectively. However, 1.4% (4) and 0.7% (2) are of the opinion that packaging of herbal medicines is bad and very bad respectively. The results further demonstrate that majority (89.0%) of participants perceive the packaging of plant medicines as good quality whilst 2.1% are of the view that the packaging design of herbal medicines is bad in the OTC pharmaceutical market in Kumasi

Table 5. 23: Respondents` Perception of Overall Packaging of Herbal Medicines

Responses		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Extremely good	74	24.1	25.5	25.5
	Very good	109	35.5	37.6	63.1
	Good	75	24.4	25.9	89.0
	Average	26	8.5	9.0	97.9
	Bad	4	1.3	1.4	99.3
	Very bad	2	0.7	0.7	100.0
	Total	290	94.5	100.0	
Missing	System	17	5.5		
Total		307	100.0		

Source: Primary Data

5.8 Relationship between Packaging and Brand Equity

Here, the purpose is to investigate the relationship between packaging, brand equity dimensions and overall brand equity in the OTC pharmaceutical market. For this purpose, exploratory factor analysis and structural equation modelling were conducted.

5.8.1 Factor Analysis

Exploratory factor analysis was undertaken to ascertain whether the test responses would produce packaging, brand loyalty, brand associations, overall brand equity, brand awareness and perceived quality by each test instrument loading on its respective latent variable as it is purported.

5.8.1.1 KMO and Bartlett's Test of Sphericity

The results of the Bartlett`s Test of Sphericity as shown in Table 5.24 reveal that the correlation matrix has significant correlations ($X^2 = 5812.912$, $df = 465$, $p < 0.001$) with all the variables in this sample. Moreover, the KMO of Sampling Adequacy is 0.927 which is higher than 0.70, indicating satisfactory level of overall sampling adequacy (Hair *et al.*, 2010). These results offer a reasonable basis for the factor analysis in this sample.

Table 5. 24: Results of KMO and Bartlett's Test of Sphericity

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.927
Bartlett's Test of Sphericity	Approx. Chi-Square	5812.912
	df	465
	Sig.	0.000

Significant at $p < 0.001$ level

Source: Primary Data

5.8.1.2 Results of Rotated Factor Loadings

Table 5.25 below provides the summary results of exploratory factor loadings which show the relationship between the latent variables and their respective indicators. This was done to allow for the further analysis of the constructs and their validity. A total of 31 indicator variables were subject to the exploratory factor analysis. However, the factor analysis through maximum likelihood factoring with oblimin rotation produced six (6) latent constructs and 22 respective test responses as shown in Table 5.36 below. The findings of the pattern matrix are exhibited in Table 5.25 below which demonstrate that most of the indicators loaded above 0.30, ranging from 0.305 to 0.986 which provided an admissible factor structure (Hair *et al.*, 2010). This implies that indicator variables that loaded less than 0.30 were dropped as indicated in the research. Both oblique and orthogonal rotational procedures produced similar results after several attempts to obtain a simple factor solution.

Table 5.25 and Table 5.26 show the results of latent variables and their respective indicators from the exploratory factor analysis. It can be observed from Table 5.25 and Table 5.26 that two test instruments loaded on component 1, five on component 2, six on component 3, three on component 4, three on component 5 and three on component 6. The six latent constructs extracted explained a total of 64.94% of the variance in the explored phenomenon in this sample. The six factors extracted were identified with names based on the theory. Furthermore, all the corrected item-total correlations coefficients are higher than 0.30, which range from 0.506 to 0.837, suggesting that the observed items correlate well with the summated score (Joiner, Pfaff, & Acres, 2002). Factors 1, 2, 3, 4, 5 and 6 are perceived quality, overall brand equity, packaging, brand awareness, brand loyalty and brand association respectively.

Table 5. 25: Results of the Factor Loadings of Packaging and Brand Equity

Pattern Matrix							
Test Items	Factor						Corrected Item-Total Correlation
	Perceived Quality Factor 1	Brand Equity Factor 2	Packaging Factor 3	Brand Awareness Factor 4	Brand Loyalty Factor 5	Brand Association Factor 6	
PQ2	0.986	----	----	----	----	----	0.739
PQ1	0.552	----	----	----	----	----	0.739
PE2	----	0.770	----	----	----	----	0.672
PE1	----	0.749	----	----	----	----	0.635
PE3	----	0.600	----	----	----	----	0.722
PE4	----	0.413	----	----	----	----	0.703
PE5	----	0.408	----	----	----	----	0.837
P3	----	----	0.796	----	----	----	0.653
P5	----	----	0.713	----	----	----	0.729
P4	----	----	0.699	----	----	----	0.623
P1	----	----	0.559	----	----	----	0.620
P2	----	----	0.538	----	----	----	0.573
P6	----	----	0.468	----	----	----	0.559
A5	----	----	----	0.700	----	----	0.610
A4	----	----	----	0.531	----	----	0.635
A3	----	----	----	0.362	----	----	0.568
PL4	----	----	----	----	0.458	----	0.643
PL5	----	----	----	----	0.428	----	0.679
PL2	----	----	----	----	0.305	----	0.644
PAS1	----	----	----	----	----	0.589	0.539
PAS2	----	----	----	----	----	0.545	0.599
PAS3	----	----	----	----	----	0.309	0.506

Extraction Method: Maximum Likelihood

Source: Primary Data

Table 5. 26: Packaging and Brand Equity Constructs and their Indicators

Packaging

P1	The packaging offers better protection for this brand
P2	The packaging preserves the contents of this brand
P3	The packaging provides enough information about this brand
P4	The packaging of this brand makes this brand environmentally-friendly
P5	The packaging of this brand makes this brand convenient to use
P6	This brand`s packaging makes this brand portable
Perceived Quality	
PQ1	The packaging of this brand makes this brand function well
PQ2	The packaging of this brand makes this brand very reliable
Brand Association	
PAS1	This brand`s packaging makes this brand offer good value for money
PAS2	This brand`s packaging makes me like the image of this brand
PAS3	The packaging of this brand makes the image of this brand unique compared to its competing brands
Brand Awareness	
A5	I am aware of the packaging of this brand
A3	Some characteristics of this brand`s packaging come to my mind quickly
A4	When I think about this brand, the first thing that comes to my mind is its packaging
Brand Equity	
PE1	This brand`s packaging gives me reason to buy this brand instead of any other brand, even if they are the same in quality or price
PE2	The packaging of this brand would make me prefer to buy this brand, even if another brand has the same features as this brand
PE3	The packaging of this brand makes this brand more than a product to me
PE4	This brand`s packaging makes it seems smarter to purchase this brand, if another brand is not different from this brand in any way
PE5	The packaging of this brand makes me prefer to buy this brand, if there is another brand as good as this brand
Brand Loyalty	
PL2	The packaging of this brand would make me recommend this brand to my friends
PL4	The packaging of this brand makes me loyal to this brand
PL5	I will keep on buying this brand as long as I am satisfied with the packaging of this brand

5.8.2 Structural Equation Modelling

Here, the hypothesized relationship between packaging, brand equity dimensions and overall brand equity were analysed by using structural equation modelling. As recommended in the literature, the measurement model was analysed before the structural model (Byrne, 2016; Anderson & Gerbing, 1988).

5.8.2.1 Results of Confirmatory Factor Analysis

The measurement model was carried out through the confirmatory factor analysis (CFA) to confirm the relationship between the unobserved factors and the observed factors provided by the exploratory factor (EFA). The latent variables are overall brand equity, brand awareness, packaging, brand association, brand loyalty and perceived quality with their associated indicators are depicted in the Table 5.27 and Table 5.28.

In this analysis, packaging formatively-measured construct and in order to conduct an analysis that involves formatively-measured construct through the use covariance-based structural equation model, the model must be identified to produce consistent parameter estimates and interpretable fit indices (Diamantopoulos, 2011). For this purpose, the test items of packaging were identified by constraining the residual error variance for packaging to be equal to one. In addition, to resolve the indeterminacy associated with the construct level error term, four reflectively-measured constructs (brand awareness, association, loyalty and perceived quality) were specified as outcomes of the packaging (Jarvis, Mackenzie & Podsakoff, 2003; Diamantopoulos, 2011; MacCallum & Browne, 1993).

In order to purify the model to achieve construct validity and better model fit, standardized residual values of pairs of measured items above 2.58 were deleted from the model as they reflect greater level of error in measurement specification (Hair *et al.*, 2010; Byrne, 2016). Moreover, each observed variable with factor loadings below 0.50 were dropped from the model with the view to achieving convergent validity (Hair *et al.*, 2010). Hence, the following test responses were discarded: PAS3 of brand association, PE1 and PE2 of overall brand equity and P1, P3 and P6 of packaging.

The findings of the confirmatory factor analysis in Table 5.28 show that 16 indicators loaded on their purported latent constructs in this model. The statistical significance of the relationship between packaging, overall brand equity, brand association, brand loyalty, brand awareness and their observed variables is determined at the two-tailed significance level of $p < 0.001$ and

C.R. ≥ 2.58 (Hair *et al.*, 2010). Furthermore, although the findings in Table 5.27 display both standardized and unstandardized estimates, a standardized regression estimate was used to present the results in this sample.

The results in Table 5.27 and Table 5.28 reveal that three indicators loaded on brand awareness, three on packaging, three on brand loyalty, three on overall brand equity, two on brand association and two on perceived quality and were all statistically significant at $p < 0.001$ level. These results are in line with past studies (Pappu *et al.*, 2005; Gil *et al.*, 2007) where a minimum of two indicators were used to perform a CFA.

This shows that the measurement model is satisfactory in explaining the relationship between the six constructs and their observed variables in the model. The results also provide support for convergent and discriminate validity of the latent factors as each test item loaded on its constructs and their factor loadings are statistically significant (Anderson & Gerbing, 1988; Hair *et al.*, 2010; Kline, 2005). Furthermore, all the individual standardized factor loadings were higher and above 0.50, ranging between 0.575 and 0.893, which also established a test of convergent validity (Kline, 2005; Hair *et al.*, 2010).

Table 5. 27: Results of Confirmatory Factor Analysis of Packaging and Brand Equity

Structural Relations			Unstandardized Estimate	Standardized Estimate	S.E.	C.R.	P-value
A3	<---	Brand awareness	1.000	.670			
A4	<---	Brand awareness	1.088	.719	.104	10.429	***
A5	<---	Brand awareness	1.263	.787	.114	11.085	***
PE5	<---	Brand equity	1.000	.746			
PE4	<---	Brand equity	1.093	.827	.079	13.861	***
PE3	<---	Brand equity	.913	.766	.071	12.892	***
P5	<---	Packaging	1.000	.840			
P4	<---	Packaging	.918	.712	.082	11.215	***
P2	<---	Packaging	.590	.575	.064	9.266	***
PL2	<---	Brand loyalty	1.000	.740			
PL4	<---	Brand loyalty	1.152	.768	.092	12.570	***
PL5	<---	Brand loyalty	1.153	.783	.090	12.794	***
PAS1	<---	Brand association	1.000	.698			
PAS2	<---	Brand association	.970	.745	.103	9.459	***
PQ1	<---	Perceived quality	1.000	.893			
PQ2	<---	Perceived quality	.854	.828	.057	14.970	***

***Means $p < 0.001$ at two-tailed significance level. All factor loadings are significant at $p < 0.001$ level

Source: Primary Data

Table 5. 28: Packaging and Brand Equity Constructs and their Indicators

Packaging	
P2	The packaging preserves the contents of this brand
P4	The packaging of this brand makes this brand environmentally-friendly
P5	The packaging of this brand makes this brand convenient to use
Brand Awareness	
A3	Some characteristics of this brand`s packaging come to my mind quickly
A4	When I think about this brand, the first thing that comes to my mind is its packaging
A5	I am aware of the packaging of this brand
Perceived Quality	
PQ1	The packaging of this brand makes this brand function well
PQ2	The packaging of this brand makes this brand very reliable
Brand Association	
PAS1	This brand`s packaging makes this brand offer good value for money
PAS2	This brand`s packaging makes me like the image of this brand
Brand Loyalty	
PL2	The packaging of this brand would make me recommend this brand to my friends
PL4	The packaging of this brand makes me loyal to this brand
PL5	I will keep on buying this brand as long as I am satisfied with the packaging of this brand
Brand Equity	
PE3	The packaging of this brand makes this brand more than a product to me
PE4	This brand`s packaging makes it seems smarter to purchase this brand, if another brand is not different from this brand in any way
PE5	The packaging of this brand makes me prefer this brand, even if there is another brand as good as this brand

Source: Primary Data

5.8.2.2 Measurement Model Path Diagram

The path diagram is a visual diagram that presents the relationship between latent factors and their underlying observed items, including the relationships among the latent factors.

Figure 5.1 below show the path diagram of the measurement model of packaging and overall brand equity. In the path diagram, the indicator items are shown by rectangles and the common factors are depicted by ellipse, whilst the letter “e” indicates the measurement error. The structural relationship between unobservable variables and indicators are shown by single

headed arrows whilst the correlations among the latent constructs are exhibited by double headed arrows.

The path diagram in Figure 5.1 below also shows the standardized regression weights of the structural relationships among the indicators and latent variables, and the correlations among the common factors. In addition, the values close to the rectangles depict the squared multiple correlations of the indicator items.

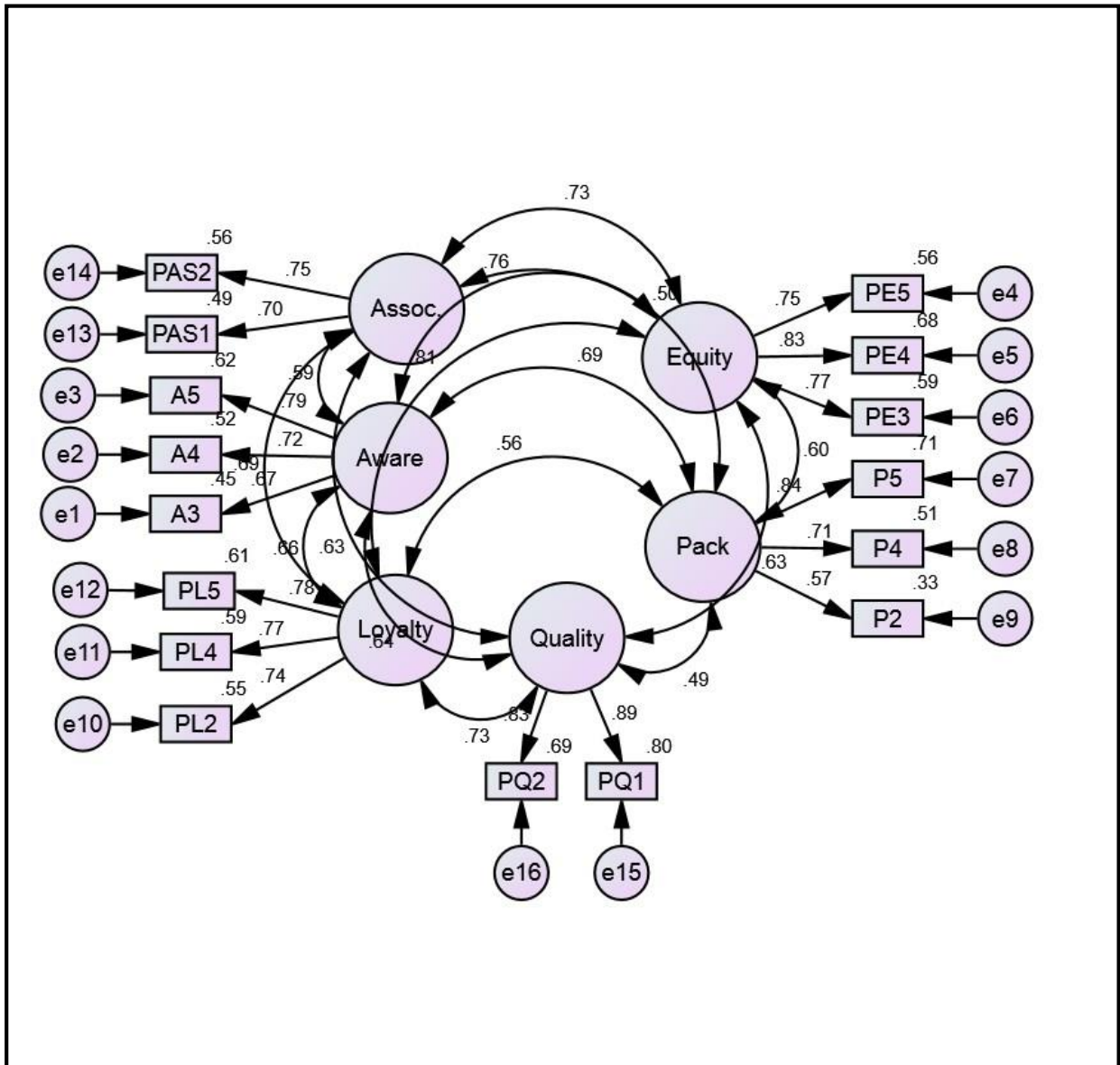


Figure 5. 1: Path Diagram of Measurement Model of Packaging and Brand Equity

Source: Developed by the Researcher

5.8.2.3 Model Fit of Measurement Model of Packaging and Brand Equity

Floyd and Widaman (1995) highlighted that the measurement model must be investigated to ascertain the plausibility of the model through goodness-of-fit indices. Specifically, goodness-of-fit indexes are employed to evaluate the acceptability or otherwise of a model. In this analysis, the goodness-of-fit statistics and fit indexes were employed to evaluate the measurement model (Hu & Bentler, 1999).

Table 5.29 below shows the summarized estimates of goodness-of-fit indices of the measurement model of the analysis. The results indicate that the Chi-square test (X^2) is significant ($X^2 = 200.075$, $df = 89$) at $p < 0.001$ level, showing that the measurement model does not exactly represent the sample data. However, the Chi-square statistic has been recognised to have severe limitations for determining the overall goodness-of-fit of a model. It has been asserted that the Chi-square statistics is directly related to sample size and hence, any model with sample size large enough is virtually rejected as a false model (Kline, 2005; Hair *et al.*, 2010). Consequently, alternative model fit indexes have been suggested to evaluate this model (*ibid*).

Table 5.30 shows the suggested model fit indices for evaluating the model fit of confirmatory factor analysis in this sample. The findings reveal that all the fit indices are greater than the proposed criteria to evaluate the six-factor measurement model and hence, the model is said to be satisfactory.

The model has a Normed Chi-square (CMIN/DF) value of 2.248 which is less than three (3) showing a good model fit (Hair *et al.*, 2010; Kline, 2005). The Goodness - of -Fit Index (GFI), Adjusted Goodness-of-Fit Index (AGFI) and Root Mean Residual (RMR) have values of 0.925, 0.886 and 0.044 respectively, which show a satisfactory fit of the model (Hair *et al.*, 2010). The Standard Root Mean Residual (SRMR) and Root Mean Square Error of Approximation (RMSEA) are 0.039 and 0.064, which are both less than 0.08 (Brown & Cudeck, 1993; Hu & Bentler, 1999).

Furthermore, the Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), Normed Fit Index (NFI) and Incremental Fit Index (IFI) are 0.952, 0.935, 0.917 and 0.952 respectively. These estimates are higher than the acceptable value of 0.90 or are close to 0.95 (Hu & Bentler, 1999;

Hair *et al.*, 2010). These findings show that the measurement model fitted well with the data and therefore provides an admissible solution to the structural model.

Table 5. 29: Model Fit Summary of Confirmatory Factor Analysis

CMIN					
Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	47	200.075	89	.000	2.248
Saturated model	136	.000	0		
Independence model	16	2413.404	120	.000	20.112

RMR, GFI				
Model	RMR	GFI	AGFI	PGFI
Default model	.044	.925	.886	.606
Saturated model	.000	1.000		
Independence model	.449	.283	.187	.250

Baseline Comparisons					
Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.917	.888	.952	.935	.952
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures			
Model	PRATIO	PNFI	PCFI
Default model	.742	.680	.706
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

RMSEA				
Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.064	.052	.076	.028
Independence model	.250	.241	.259	.000

Source: Primary Data

Table 5. 30: Criteria Used to Assess the Measurement Model Fit

Goodness-of-Fit Indices	Acronym	Estimates of Fit Indices	Suggested Value of Good Fit	References
<i>Goodness-of-Fit Statistics</i>				
Chi-Square Degree of Freedom Ratio/Normed Chi-Square	X ² /df (CMIN/DF)	2.248	1 to 3 1 to 5	Hair <i>et al.</i> (2010), Kline (2005), Hooper <i>et al.</i> (2008)
<i>Absolute Fit Indices</i>				
Root Mean Square Error of Approximation	RMSEA	0.064	< .60 < .50 < 0.08	Hu and Bentler (1999), Brown and Cudeck (1993)
Standardized Root Mean Residual	SRMR	0.039	< .08	Hu and Bentler (1999)
Goodness-of-Fit Index	GFI	0.925	> .90	Hair <i>et al.</i> (2010), Hooper <i>et al.</i> (2008)
<i>Incremental/Relative Fit Indices</i>				
Comparative Fit Index	CFI	0.952	> .90 or .95	Hu and Bentler (1999)
Tucker-Lewis Index	TLI	0.935	> .90 or 0.95	Hu and Bentler (1999)
Normed Fit Index	NFI	0.917	> .90 or 0.95	Hu and Bentler (1999)
Incremental Fit Index	IFI	0.952	>.90	Hair <i>et al.</i> (2010)

Source: Compiled by the Researcher

5.8.3 Path Estimates of Packaging and Overall Brand Equity

The structural model relates to the structural relations among the latent variables as indicated in the literature. The results of the structural model are shown in Table 5.31 below. In addition, the results in Table 5.31 exhibit both standardized and unstandardized estimates but standardized regression weights were used to present the results in this data set. The test results of the proposed hypotheses are statistically significant at either $p < 0.05$ or $p < 0.01$ at 1.96

5.8.3.1 Objective Two: To Examine the Brand Equity of Herbal Medicines in the OTC Drug Market in Kumasi.

Here, the study examined the influence of brand equity dimensions on the overall brand equity of herbal medicines in the OTC medicine market. Consequently, four hypotheses were stipulated based upon the literature reviewed in Chapter Three as shown in Table 5.31. In this study, brand awareness, brand loyalty, brand association and perceived quality are independent variables whilst overall brand equity is the dependent variable.

H1b: Brand Awareness Positively and Significantly Influence Overall Brand Equity

The results of structural model in Table 5.31 demonstrate that brand awareness ($\beta = 0.331$, $t = 3.659$, $p = 0.000$) positively influences overall brand equity at $p < 0.001$ level. These results support *H1b*.

H2b: Brand Association Positively and Significantly Influence Overall Brand Equity

Furthermore, the results of the structural model in Table 5.31 indicate that brand association ($\beta = 0.273$, $t = 3.182$, $p = 0.001$) is statistically significant and directly related to overall brand equity at $p < 0.001$ level and confirm *H2b*.

H3b: Perceived Quality Positively and Significantly Influence Overall Brand Equity

Additionally, the results of the structural model in Table 5.31 reveal that the relationship between perceived quality ($\beta = -0.061$, $t = -0.822$, $p = 0.411$) and overall brand equity is not statistically significant at $p < 0.001$ two tailed level, and therefore *H3b* is rejected.

H4b: Brand Loyalty Is Positively and Significantly Influence Overall Brand Equity

Finally, the test results in Table 5.31 show that brand loyalty ($\beta = 0.451$, $t = 4.870$, $p = 0.000$) is statistically significant and positively related to overall brand equity at $p < 0.001$ level and support *H4b*. The results of structural model further show brand loyalty ($\beta = 0.451$) has greater influence on overall brand equity than any other dimensions of brand equity.

5.8.3.2 Objective Three: To Examine the Influence of Packaging on Brand Awareness in the OTC Market in Kumasi.

The results of the structural model in Table 5.31 show that packaging ($\beta = 0.826$, $t = 8.256$, $p = 0.000$) is statistically significant and positively influences brand awareness at $p < 0.001$ level and support *H1a*.

5.8.3.3 Objective Four: To Examine the Influence of Packaging on Brand Associations in the OTC Drug Market in Kumasi.

The findings of the structural model in Table 5.31 also reveal that packaging ($\beta = 0.753$, $t = 7.608$, $p = 0.000$) is positively related to brand association at $p < 0.001$ level and confirms H2a.

5.8.3.4 Objective Five: To Examine the Influence of Packaging on Perceived Quality in the OTC Drug Market in Kumasi.

The results of the structural model in Table 5.31 demonstrate that packaging ($\beta = 0.784$, $t = 9.606$, $p = 0.000$) is statistically significant and positively related to perceived quality at $p < 0.001$ level and support *H3a*.

5.8.3.5 Objective Six: To Examine the Influence of Packaging on Brand Loyalty in the OTC Drug Market in Kumasi.

Furthermore, the results of the structural model in Table 5.31 show that packaging ($\beta = 0.838$, $t = 8.968$, $p = 0.000$) is statistically significant and positively related to brand loyalty at $p < 0.001$ level and confirm *H4a*. The results of structural model further show that packaging ($\beta = 0.838$) has a greater influence on brand loyalty than any other brand equity dimensions.

In the structural model in this sample, however, no direct path between packaging and overall brand equity was specified. Instead, as conceptualized in this study, overall brand equity is indirectly influenced by packaging through the mediated dimensions of brand equity. In order to ascertain the indirect (mediated) effect of packaging on overall brand equity in this analysis, bootstrap was performed with bootstrap samples of 1000 at biased-corrected confidence interval of 95%. The results indicate that packaging ($\beta = 0.809$, $t = 7.516$, $p = 0.004$) has a significant indirect effect on overall brand equity at $p < 0.001$ two-tailed level.

Table 5. 31: Path Estimates of Packaging and Overall Brand Equity

Structural Relations			Unstandardized Estimate	Standardized Estimate	S.E.	C.R.	P-value
Brand association	<--	Packaging	.873	.753	.115	7.608	***
Brand awareness	<--	Packaging	.997	.826	.121	8.256	***
Brand loyalty	<--	Packaging	1.020	.838	.114	8.968	***
Perceived quality	<--	Packaging	1.297	.784	.135	9.606	***
Brand equity	<--	Brand association	.330	.273	.104	3.182	.001
Brand equity	<--	Brand awareness	.385	.331	.105	3.659	***
Brand equity	<--	Perceived quality	-.051	-.061	.063	-8.22	.411
Brand equity	<--	Brand loyalty	.519	.451	.107	4.870	***
A3	<--	Brand awareness	1.000	.662			
A4	<--	Brand awareness	1.106	.722	.107	10.331	***
A5	<--	Brand awareness	1.284	.790	.117	10.945	***
PE5	<--	Brand equity	1.000	.746			
PE4	<--	Brand equity	1.092	.827	.079	13.888	***
PE3	<--	Brand equity	.912	.766	.071	12.925	***
P5	<--	Packaging	1.000	.619			
P4	<--	Packaging	.857	.489	.089	9.588	***
P2	<--	Packaging	.693	.497	.094	7.350	***
PL2	<--	Brand loyalty	1.000	.740			
PL4	<--	Brand loyalty	1.161	.773	.092	12.570	***
PL5	<--	Brand loyalty	1.144	.776	.091	12.611	***
PAS1	<--	Brand association	1.000	.682			
PAS2	<-	Brand association	1.017	.763	.109	9.291	***
PQ1	<-	Perceived quality	1.000	.901			
PQ2	<--	Perceived quality	.838	.820	.058	14.536	***

***Means $p < 0.001$ at Two-tailed Significance Level

Source: Primary Data

5.8.4 Structural Model Fit Indices of Packaging and Overall Brand Equity

The goodness-of-fit statistics and fit indices were utilized to evaluate the structural model (Hu & Bentler, 1999). Table 5.32 below illustrates the summarized results of fit indices of the structural model, while Table 5.33 exhibits the indicators for evaluating these model fit indices. However, in order to generate better model fit measures of the path analysis in this sample, test items P4 and P5 were modified as exhibited in Figure 5.2.

The Chi-square test (X^2) is significant ($X^2 = 240.948$, $df = 95$) at $p < 0.001$ level, indicating that the structural model does not replicate the sample data. The Chi-square statistic has been, however, acknowledged to have some degree of limitations for assessing the overall goodness-of-fit of hypothesized structure and observed data.

It has been concluded that the Chi-square statistic is sensitive to sample size and for that matter almost all models with large sample size are often rejected as false (Kline, 2005; Hair *et al.*, 2010). For this reason, alternative model fit indexes have been suggested to evaluate the fitness of this model in Table 5.32.

The results of fit measures reveal that the model has a CMIN/DF of 2.536 which is less than 3, suggesting a better model fit (Hair *et al.*, 2010; Kline, 2005). The RMR, GFI and AGFI are 0.054, 0.909 and 0.870 respectively, showing reasonable fit of the data (Hair *et al.*, 2010).

The SRMR has a value of 0.049 which is less than the recommended value of 0.08 (Hu & Bentler, 1999) and RMSEA is 0.071 which is also less than the proposed limit of 0.08 (Brown & Cudeck, 1993; Hu & Bentler, 1999). Lastly, the CFI, TLI, IFI and NFI are 0.936, 0.920, 0.937 and 0.900 respectively. These findings demonstrate that the model fitted well with the data and is therefore acceptable (Hu & Bentler, 1999; Hair *et al.*, 2010).

Table 5. 32: Path Model Fit Summary of Packaging and Overall Brand Equity

CMIN					
Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	41	240.948	95	.000	2.536
Saturated model	136	.000	0		
Independence model	16	2413.404	120	.000	20.112

RMR, GFI				
Model	RMR	GFI	AGFI	PGFI
Default model	.054	.909	.870	.635
Saturated model	.000	1.000		
Independence model	.449	.283	.187	.250

Baseline Comparisons					
Model	NFI	RFI	IFI	TLI	CFI
	Delta1	rho1	Delta2	rho2	
Default model	.900	.874	.937	.920	.936
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures			
Model	PRATIO	PNFI	PCFI
Default model	.792	.713	.741
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

RMSEA				
Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.071	.060	.082	.001
Independence model	.250	.241	.259	.000

Source: Primary Data

Table 5. 33: Assessing the Structural Model Fit of Packaging and Brand Equity

Goodness-of-Fit Indices	Acronym	Actual Values of Fit Indices	Suggested Value of Goodness-of- Fit Measures	References
<i>Goodness-of-Fit Statistics</i>				
Chi-square Degree of Freedom Ratio/ Normed Chi-Square	X ² /df (CMIN/DF)	2.536	1 to 3 1 to 5	Hair <i>et al.</i> (2010), Kline (2005), Hooper <i>et al.</i> (2008)
<i>Absolute Fit Indices</i>				
Root Mean Square Error of Approximation	RMSEA	.071	< .060 < .050 to 0.08	Hu and Bentler (1999), Brown and Cudeck (1993)
Standardized Root Mean Residual	SRMR	.049	< .08	Hu and Bentler (1999)
Goodness-of-Fit Index	GFI	.909	> .90	Hair <i>et al.</i> (2010), Hooper <i>et al.</i> (2008)
<i>Incremental/Relative Fit Indices</i>				
Comparative Fit Index	CFI	.936	> .90 or .95	Hu and Bentler (1999)
Tucker-Lewis Index	TLI	.920	> .90 or 0.95	Hu and Bentler (1999)
Incremental Fit Index	IFI	.937	>.90	Hair <i>et al.</i> (2010)
Normed Fit Index	NFI	.900	> .90	Hu and Bentler (1999)

Source: Compiled by the Researcher

5.8.5 Structural Model Path Diagram of Packaging and Overall Brand Equity

Figure 5.2 below depicts the path diagram of structural model which shows the relationship between packaging and overall brand equity. The path diagram provides a visual illustration of the relationships among indicator items and unobserved factors, and the relationship among common factors.

The indicator items are enveloped by rectangles, the latent variables are depicted by ellipses or circles and “e” relates to measurement errors. The structural relationship is shown by one-way arrows whilst correlations among common factors are represented by two-way arrows.

The path diagram in Figure 5.2 below also reveals the standardized estimates of the structural relationships among the unobserved factors and common factor as well as the relationship between the latent variables. Moreover, the values close to the rectangles indicate the squared multiple correlations of the indicator items.

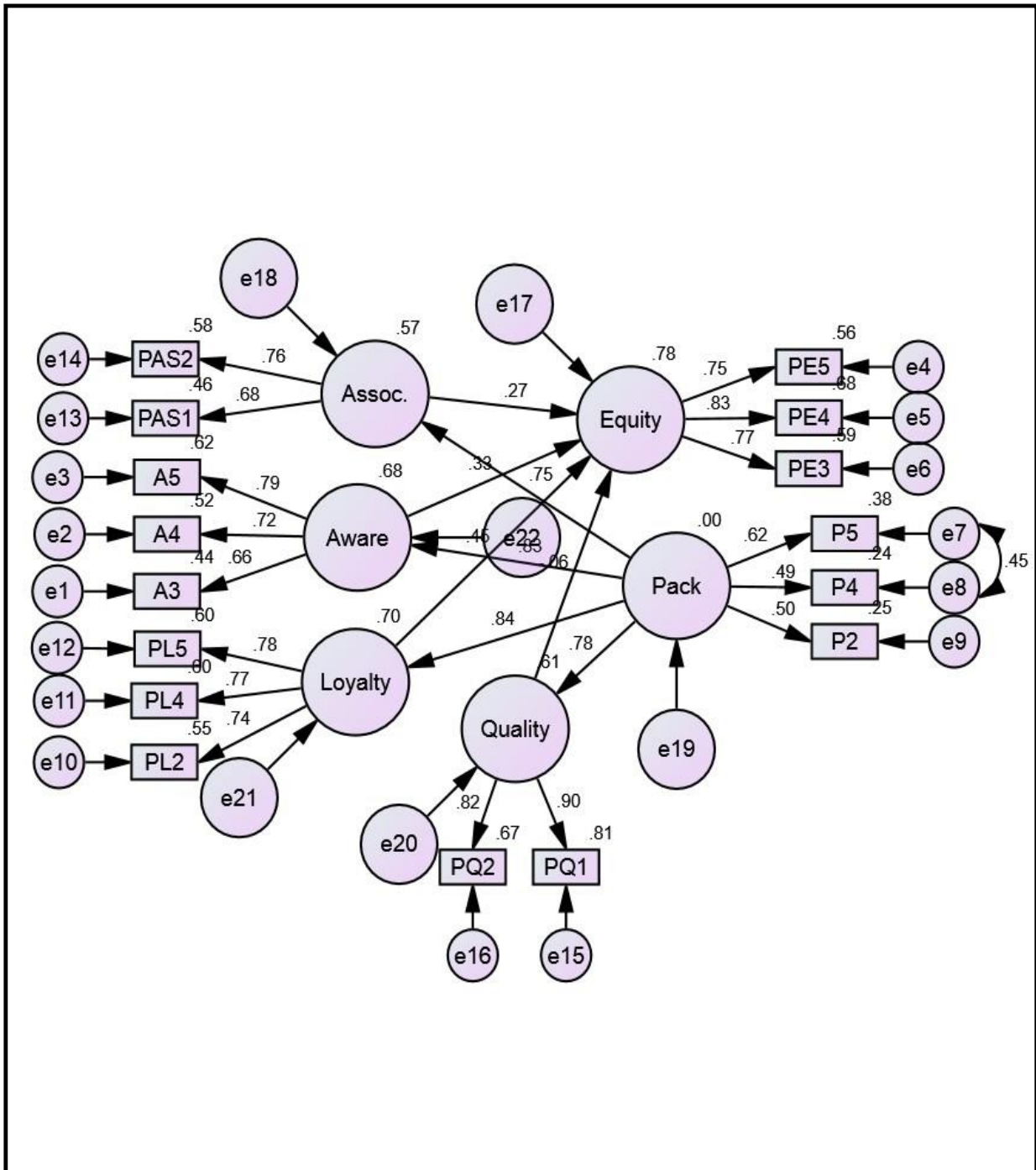


Figure 5. 2: Path Diagram of Structural Model of Packaging and Brand Equity

Source: Developed by the Researcher

5.9 Summary Results of Hypotheses Testing

This section provides the summary of the test results of the hypotheses proposed under each objective of the study.

5.9.1 Objective Two: To Examine the Brand Equity of Herbal Medicines in the OTC Drug Market

Here, the study investigated the relationship between brand equity dimensions and the overall brand equity of herbal medicines in the OTC medicine market. As a result, four hypotheses were stipulated as shown in Table 5.34. The results show that three out of the four path estimates were statistically significant. All the fit indices also supported the results of the path analysis in this sample.

The summarised empirical findings of the hypotheses are shown in Table 5.34. It can be observed in Table 5.34 that all the hypotheses tested in this sample are fully supported. The overall findings of the relationship between the dimensions of brand equity and brand equity are summarized in a conceptual model in Figure 5.3 below.

The results show that brand awareness ($\beta = 0.331$, $p < 0.001$) significantly contributes to support overall brand equity. Likewise, brand association ($\beta = 0.273$, $p = 0.001$) and brand loyalty ($\beta = 0.451$, $p < 0.001$) are significant and directly related to brand equity. These findings confirm *H1b*, *H2b* and *H4b*. However, the relationship between perceived quality ($\beta = -0.061$, $p = 0.411$) and overall brand equity is not statistically significant and hence, *H3b* was rejected.

Table 5. 34: Significant Relationship between Brand Equity and its Dimensions

Hypotheses		Path	S.E	t- value	p- value	Results
H1b:	Brand awareness significantly and positively influence overall brand equity	0.331	0.105	3.659	***	Supported
H2b:	Brand association significantly and positively influence overall brand equity	0.273	0.104	3.182	0.001	Supported
H3b:	Perceived quality significantly and positively influence overall brand equity	-0.061	0.063	-0.822	0.411	Unsupported
H4b:	Brand loyalty significant and positively influence overall brand equity	0.451	0.107	4.870	***	Supported

***Means $p < 0.001$ at Two-tailed Significance Level

Source: Primary Data

5.9.2 Relationship between Packaging and Brand Equity Dimensions

Moreover, the research examined the influence of packaging on brand equity dimensions in the OTC pharmaceutical market. The study also employed the dimensionality of Aaker`s (1996) CBBE model to investigate the significant relationship between packaging and brand equity dimensions in OTC market in Kumasi Metropolis.

In this sample, four hypotheses were posited and later tested. The summarised test results in this data set are presented in Table 5.35 and Figure 5.3 below. It can be observed in Table 5.35 that all the four hypotheses in this sample are fully supported. All the fit measures also supported the results of the structural model as exhibited in Table 5.36 below. The results of the relationship between packaging and overall brand equity are summarized in the context of study`s conceptual model in Figure 5.3 below.

5.9.2.1 To Examine the Influence of Packaging on Brand Awareness in the OTC Drug Market

The test results show that packaging ($\beta = 0.826$, $p < 0.001$) positively influences brand awareness which confirms *H1a*.

5.9.2.2 To Examine the Influence of Packaging on Brand Associations in the OTC Medicine Market

The test results also show that packaging ($\beta = 0.753$, $p < 0.001$) significantly influences brand association which provides support for *H2a*.

5.9.2.3 To Examine the Influence of Packaging on Perceived Quality in the OTC Drug Market

The test results reveal that packaging ($\beta = 0.784$, $p < 0.001$) significantly influences perceived quality and confirms *H3a*.

5.9.2.4 To Examine the Influence of Packaging on Brand Loyalty in the OTC Drug Market

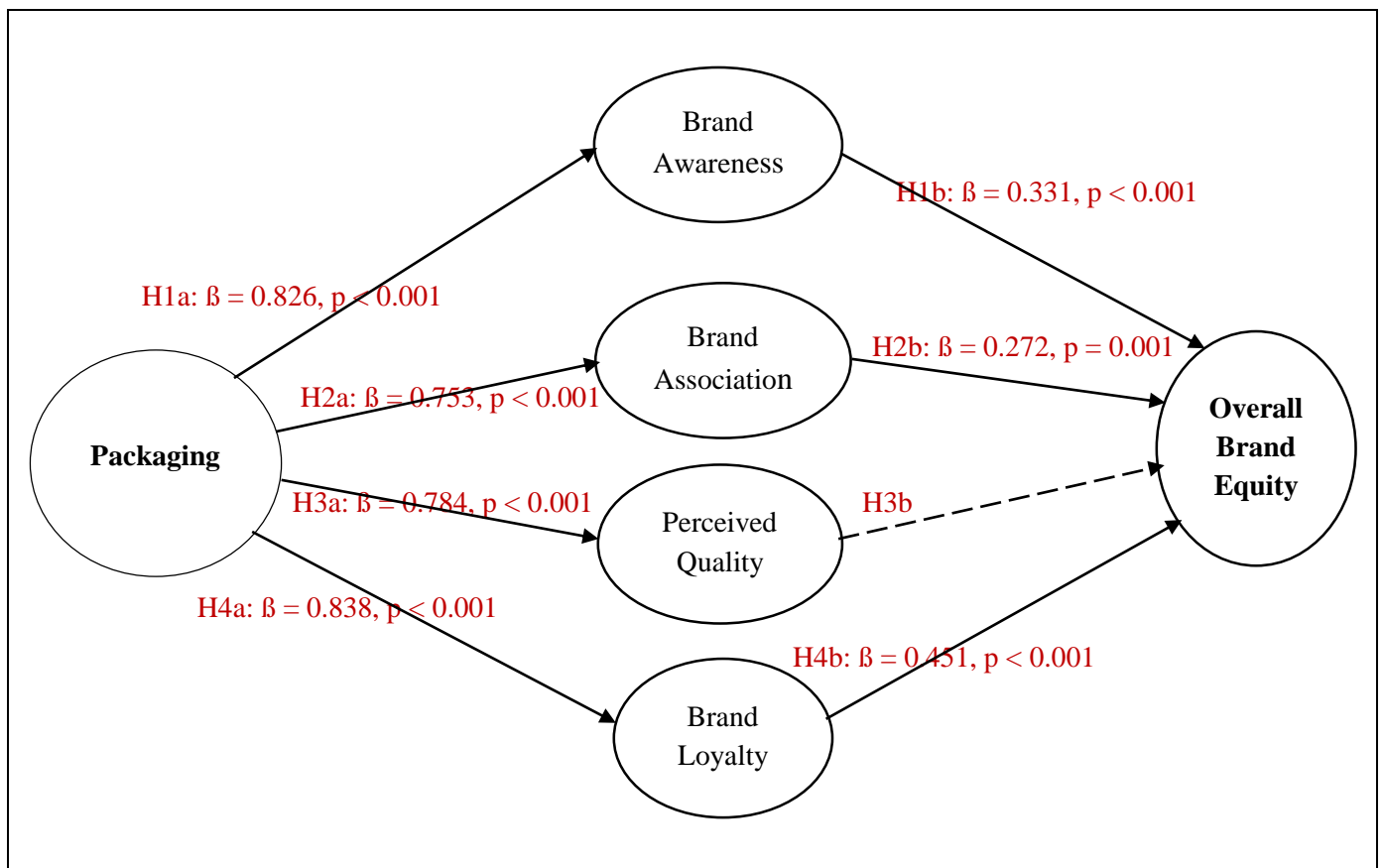
The test results show that packaging ($\beta = 0.838$, $p < 0.001$) positively influences brand loyalty which confirms *H4a*. Finally, the findings of the bootstrap analysis show that packaging ($\beta = 0.809$, $p < 0.001$) has a mediated effect on overall brand equity in the OTC pharmaceutical market in Kumasi.

Table 5. 35: Significant Relationship between Packaging and Overall Brand Equity

Hypotheses		Path	S.E	t-value	p-value	Results
<i>H1a:</i>	Packaging significantly and positively influence brand awareness	0.826	0.121	8.256	***	Supported
<i>H2a:</i>	Packaging significantly and positively influence brand association	0.753	0.115	7.608	***	Supported
<i>H3a:</i>	Packaging significantly and positively influence perceived quality	0.784	0.135	9.606	***	Supported
<i>H4a:</i>	Packaging significantly and positively influence brand loyalty	0.838	0.114	8.968	***	Supported

***Means $p < 0.001$ at Two-tailed Significance Level

Source: Primary Data



Note: - - - ➔ Relationship between Perceived Quality and Overall Brand Equity is Insignificant

Figure 5. 3: Research Model of Relationship between Packaging and Brand Equity

Source: Primary Data

Table 5. 36: Summary of Model Fit Measures of Packaging and Brand Equity

Model Fit Indices	Value
Normed Chi-square Statistics (X^2/df)	2.536
Goodness-of-fit Index (GFI)	0.909
Root Mean Square Error of Approximation (RMSEA)	0.071
Standard Root Mean Residual (RMSR)	0.049
Comparative Fit Index (CFI)	0.936
Tucker-Lewis Index (TLI)	0.920
Incremental Fit Index (IFI)	0.937
Normed Fit Index (NFI)	0.900

Source: Primary Data

5.10 Chapter Summary

This chapter presents the findings of the study in the light of the research questions and objectives. First, the reliability of the test instruments was confirmed through Cronbach alpha and composite reliability from the results that emerged from the exploratory factor analysis and confirmatory factor analysis. Also, evidence of validity of the latent variables was established through the average variance extracted and square root of average variance extracted and squared correlations between one construct and any other constructs in this study.

Subsequently, descriptive statistics was used to present the results of the profile of the respondents, herbal medicines purchased and the perceptions of packaging of plant medicines in the OTC market. The hypotheses proposed in the research were tested by using SEM. The structural equation model was conducted in two phases. Initially, a measurement model was carried out through confirmatory factor analysis to confirm the results of the exploratory factor analysis and also to further evaluate convergent and discriminant validity. The structural model was then undertaken to test the relationships among the latent constructs. Seven path estimates were statistically significant and provided support for the propositions put forward in the research. The ensuing chapter presents the discussions of the main results of the research in light of past research findings and the existing literature.

CHAPTER SIX

DISCUSSIONS OF THE RESEARCH FINDINGS

6.1 Introduction

The purpose of the research was to examine the influence of packaging and brand equity of plant medicines in the OTC pharmaceutical market. In this regard, the study sought to evaluate the customers' perceptions of packaging of herbal medicines in the OTC health care market. The study also examined the influence of the dimensions of brand equity on overall brand equity of plant medicines in the OTC medicine market.

The previous chapter highlighted the significant findings of the analysis of the data collected from the field to address the research questions with the view to achieving the objectives. The chapter also presented the results of the demographics of the respondents, customers' perceptions of packaging of herbal medicines, the validity and reliability of the test items and the entire hypotheses proposed in the study. All the findings were generated through the use of descriptive statistics and structural equation model.

The focus of the current chapter is to offer discussions of the empirical findings presented in Chapter Five. Specifically, this chapter provides the discussions of the findings of individual research objectives through the proposed hypotheses in order to draw conclusions and recommendations as well as offer suggestions for further research in the final chapter of this thesis.

6.2 To Examine Customers' Perceptions of Packaging of Herbal Medicines Sold at the OTC Market in Kumasi

The study sought to examine the customers' perceptions of packaging design elements as well as the overall packaging of plant medicines in the OTC market in Kumasi. However, this is in respect of the fact that packaging of herbal medicines is perceived to be unappealing and not durable in the Ghanaian OTC drug market (Kumah *et al.*, 2015).

The study found that 90%, 84.3%, 84.1%, 83.3%, 73.6% and 86.2% of the customers were satisfied with the colour, photography, printed information, typography, size/shape and material of packaging of herbal medicines respectively. Overall, 89% of the customers perceived plant medicinal products distributed at the OTC drug stores as distinctively

packaged. This outcome concurs with existing literature (Kraemer & Wunsch-Vincent, 2016), which demonstrate that most traditional herbal medicine manufacturers in Ghana have improved their practices by producing assorted herbal medicines, including pills, tablets, capsules, creams in tubes, and mixtures in bottles for longer shelf-life using quality packaging materials with adequate labelling. This indicates that majority of the herbal medicines distributed at the OTC pharmaceutical market are well-packaged. As a result of improvement in the packaging among other things, most of the herbal medicines are sold in pharmaceutical stores and are recommended by physicians in some hospitals, clinics and health posts throughout the country.

However, the study also found that 2.5%, 3.7%, 4.2%, 3.4% and 2.8% of the customers were dissatisfied with photography, material, typography, size/shape and printed information respectively. Overall, it is only 2.1% of the customers who described the packaging of medicinal herbal products as unattractive. This outcome is in line with an earlier author (Aniah, 2015), who found that doses of crushed, squeezed and pounded herbal medicines were measured in cups, spoons, glasses, pinch and lids depending upon the age of the patient, physical status, severity of the disease and the experience of the individual healer in the Bongo District in Ghana.

This position is supported by Kraemer and Wunsch-Vincent (2016) who noted that, despite substantial improvement in packaging design and innovations in the herbal medicine industry, there are a number of practitioners who are not ready to embrace innovations to enhance the packaging of their products. Poor packaging can adversely affect the competitiveness and ultimately, the success of a product in the market. It is therefore important for traditional medicine practitioners to design packaging that will not only perform logistic functions but also marketing purposes to make substantial impact in the OTC health care market. Improvement in packaging of herbal medicines comparable to orthodox medicinal products can enhance the image and increase the patronage in the OTC drug market in Ghana.

6.3 To Examine the Brand Equity of Herbal Medicines in the OTC Drug Market

Here, the study sought to examine the brand equity of herbal medicines in the OTC health care market. Since brand equity is a multi-dimensional construct, in order to ascertain the value of brands of herbal medicines in the OTC medicine market, the dimensions of Aaker's (1996)

CBBE model was employed. Hence, the research investigated the influence of perceived quality, brand awareness, brand loyalty and brand association on the overall brand equity of herbal medicines in the OTC drug market. The test results of the hypotheses proposed to achieve this objective are discussed below.

H1b: Brand Awareness Positively and Significantly Influence Overall Brand Equity

The test results indicate that brand awareness ($\beta = 0.331$, $p < 0.01$) significantly contributes to strengthen the overall brand equity in the OTC medicine market. This result confirms *H1b* and concurs with the previous research findings (Asif *et al.*, 2015; Panchal *et al.*, 2012) which suggest that overall value of a brand is positively influenced by brand awareness. This result illustrates that brand awareness is one of the sources of brand equity of herbal medicines in the OTC health care market. The data set also lends support to the fact that brand awareness creates value for brands of herbal medicines in the OTC pharmaceutical market.

The data set suggests that customers can easily notice the brand they buy among competitive brands, know what the brand looks like and hence, they are very aware of the brand. Consistent with Aaker's (1991; 1996) and Keller's (1993; 2013) framework of CBBE, this level of brand awareness can enhance the overall brand equity. This outcome supports the extensive advertising of herbal medicines on radio and television stations by practitioners in the country, to create a high level of brand awareness in the OTC pharmaceutical market. This is important because customers usually buy well-known and familiar brands in the market. Therefore, creating name recognition for new brands and reminding customers of existing brands in the market is one of the important ways of creating value for brands in the market.

This result contrasts sharply with the position of Buil *et al.* (2013) who asserted that brand awareness has positive, but does not directly contribute to enhance brand equity. The authors further stated that brand awareness is essential for building brand equity, because buyers must be able to recognize and recall the brand in the marketplace, but, after that, brand awareness is secondary. However, Keller (2013) highlighted that strong brand awareness creates the opportunity for the brand to be considered among a set of handful of brands the customers wish to buy. Moreover, brands that have a high degree of awareness convey a sense of familiarity, positively influence choice and signal commitment to the brand (Aaker, 1992; 1996).

H2b: Brand Association Positively and Significantly Influence Overall Brand Equity

The test results also reveal that brand association ($\beta = 0.273$, $p = 0.001$) positively influences overall brand equity in the OTC medicine market. This outcome supports *H2b* and is consistent with the findings of previous research (Gil *et al.*, 2007; Tong & Hawley, 2009) which suggest that strong and unique brand association strengthens overall brand equity. This result indicates that brand association is one of the important brand assets that provides value for brands of herbal medicines in the OTC market. The data in this sample also show that the customers perceive that the brands they buy at the OTC market offer good value for money and this forms the basis for buying those brands other than the other competing brands. Therefore, customers' perceptions of greater perceived value and differentiation are important indicators of high overall brand equity in the OTC drug market.

This outcome of the study is also in line with earlier authors (Tong & Hawley, 2009; Gil *et al.*, 2007) who recognized brand association as a distinct dimension but contrasts with previous research (Washburn & Plank, 2002; Yoo & Donthu, 2002; Yoo *et al.*, 2000), which considered brand awareness and brand associations as a single dimension of brand equity. The results of the current study therefore support Aaker's (1991; 1996) and Keller's (1993) framework of CBBE which suggests that brand association is a brand asset that supports brand equity. As an important source of value in the OTC market, traditional herbal medicine companies need to create favourable and unique brand associations to strengthen the value of their brands to generate a competitive advantage over the competition.

H3b: Perceived Quality Positively and Significantly Influence Overall Brand Equity

The test findings also show that the relationship between perceived quality ($\beta = -0.061$, $p = 0.411$) overall value of a brand. Consequently, *H3b* is unsupported and concurs with the result of past research (Tong & Hawley, 2009; Gil *et al.*, 2007) which found that perceived quality did not have positive and significant influence on overall brand equity in the Chinese sportswear market. This outcome of the study did not support Aaker's (1996) CBBE framework which indicates that perceived quality of product determines the value of a brand in the market.

This results indicates that producing herbal medicine packaging that makes the brand function well and very reliable alone is not a guarantee for successful brand in the OTC pharmaceutical industry. According to Lassar *et al.* (1995), brand equity occurs when a customer imposes a

greater confidence in a brand compared to competing brands. As a result, the medicinal herbal products should not only be reliable and function well but also provide safety consistently to customers in the OTC drug market. Consistent with previous authors (Gavin, 1987; Dickov & Igić, 2013; Osemene *et al.*, 2011), customers' perceptions of quality of a product depend on the performance, reliability, safety and efficacy of the product. Moreover, due to the influx of counterfeit medicines in the OTC market, customers are very concerned about the safety, potency and reliability of medicines. These quality attributes can provide strong value for a brand in the OTC drug market.

H4b: Brand Loyalty Positively and Significantly Influence Overall Brand Equity

Finally, the test results in this sample demonstrate that brand loyalty ($\beta = 0.451$, $p < 0.001$) significantly contributes to strengthen overall brand equity. This outcome supports *H4b* which also concurs with the results of past studies (Tong & Hawley, 2009; Buil *et al.*, 2013; Yoo *et al.*, 2000) which indicates that brand loyalty positively influences the overall value of a brand.

This result is also in line with the Aaker's (1996) CBBE model which suggests that brand loyalty has a dominant influence on brand equity. The data set also confirms customers' loyalty of plant medicines in the OTC market in Kumasi. The data set shows that the loyal customers of herbal medicines are prepared to buy their preferred brand no matter its price compared to its competitors and would not also purchase similar brands if the brand is in the store shelves. This outcome is consistent with existing literature (Aaker, 1992; Trott & Sople, 2016), which suggests that loyal customers have strong preference for a brand, and are less sensitive to price increases relative to competitors and also insistent on buying the same brand even if other alternatives are available in the store. However, this outcome is contrary to previous empirical research findings (Dlaćić & Kezman, 2014; Chaudhuri & Holbrook, 2001) which suggest that brand loyalty is an outcome of positive brand equity. Moreover, Buil *et al.* (2013) pointed out that brand loyalty is a dimension but is closer to brand equity compared to the other antecedents. Additionally, Aaker (1991) concluded that brand loyalty is both an element and an outcome of positive brand equity.

Furthermore, the study found that among the elements of brand equity, brand loyalty ($\beta = 0.451$) has a greater influence on overall brand equity. This outcome is similar to the result of a past empirical study (Tong & Hawley, 2009) which indicates that brand loyalty is the major brand asset in the sportswear industry. This result is also supported by Aaker (1991; 1992) who

highlighted that brand loyalty is a strategic asset of brand equity in that a large loyal customer base translates into a predictable sales and profit stream. Recognizing the strategic importance of brand loyalty in the OTC drug market, traditional herbal medicine companies stand to benefit if brand loyalty is properly managed and exploited in the OTC drug market. Brand loyalty has the potential to reduce competitive pressure, the marketing cost of attracting and serving new customers and also to generate word-of-mouth advertising from existing customers.

6.4 To Examine the Influence of Packaging on Brand Awareness in the OTC Drug

Market

H1a: Packaging significantly and positively influence brand awareness

The test results show that packaging directly influences brand awareness ($\beta = 0.826$, $p < 0.001$) and confirms *H1a*. This outcome concurs with earlier studies which indicate that packaging positively affects brand awareness (Pieterse, 2001; Underwood, 2003). This outcome is also consistent with extant literature (Keller, 1993) which suggests that brand equity is enhanced by packaging through the influence of brand awareness.

The data set shows that customers quickly retrieve some attributes of packaging when buying plant medicines in the OTC drug market. Moreover, the first thing customers' recall about the brand is the product packaging. This outcome establishes that effective packaging design is an important marketing tool that potentially creates awareness of herbal medicines in the OTC health care market. Designing attractive packaging can grab attention and sustain customers' interest in the brand at the point-of-sale. As an important marketing tool, packaging has the potential to strengthen overall value of a brand through the impact of brand awareness in the OTC pharmaceutical market. Considering the vital role of packaging in the OTC market, traditional medicine companies can use packaging to remind customers' of advertising messages to create strong awareness and familiarity of their brands to support overall brand equity.

6.5 To Examine the Influence of Packaging on Brand Association in the OTC Medicine

Market

H2a: Packaging significantly and positively influence brand association

The test results of the hypotheses in this sample also show that packaging ($\beta = 0.753$, $p < 0.001$) significantly contributes to enhance brand association in the OTC drug market. This outcome supports *H2a* and is in line with results of earlier research which indicates that packaging has direct effect on brand association (Pieterse, 2001; Underwood, 2003). The data of the research reveals that packaging enhances the customers' perceptions of value and preference for the image of the brands in the OTC drug market. Enhanced brand image can provide customers specific reason to buy and use the brands. This result confirms that packaging is one of essential brand cues for supporting brand association in the OTC health care market.

Building favourable and unique brand association through distinctive packaging design can be a strong barrier to competitors in the OTC drug market. Thus, packaging contributes to the value of brands in the OTC market which can insulate them against competing brands. Indeed, packaging is the first point of contact between the prospective buyer and the brand which can create either positive or negative impressions about the brand. Plant medicine companies therefore need to consider packaging in their image-building activities because customers rely on packaging to evaluate the perceptions of value and also to develop positive feelings and attitudes towards their brands in the OTC market.

6.6 To Examine the Influence of Packaging on Perceived Quality in the OTC Drug

Market

H3a: Packaging significantly and positively influence perceived quality

The test results of the proposed hypotheses demonstrate that packaging directly influences ($\beta = 0.784$, $p < 0.001$) perceptions of brand quality. This result supports *H3a* and is consistent with findings of past research (Edward, 2013), which highlighted that packaging has a direct influence on perceptions of quality.

The data set reveals that customers rely on packaging to determine the efficacy and reliability of herbal medicines in the OTC drug market. This result shows that packaging is an important attribute which customers use to evaluate the quality of herbal medicines in the OTC market. This outcome concurs with existing literature (Zeithaml, 1988; Underwood, 2003) which indicates that packaging is an extrinsic attribute which customers use to assess the intrinsic product attributes to infer quality, especially when customers are under time pressure or do not have experience to judge the intrinsic attributes of the product. It is therefore important for herbal medicine companies to consider packaging in their quality decisions as packaging influences customers' perceptions of quality of herbal medicines in the OTC health care market.

6.7 To Examine the Influence of Packaging on Brand Loyalty in the OTC Drug Market

H4a: Packaging significantly and positively influence brand loyalty

The test results of the hypotheses show that packaging ($\beta = 0.838$, $p < 0.001$) positively influences brand loyalty in the OTC drug market. This outcome confirms *H4a* which indicates that packaging potentially strengthens brand loyalty. Consistent with the results of past studies which show that packaging positively influences brand loyalty (Dhurup *et al.*, 2014). The data set in this sample also confirms that the customers would like to recommend the brands they buy to their friends, and keep on buying the same brand as long as they are happy with the packaging of the product.

This outcome is in line with existing literature (Aaker, 1991) which indicates that customers who are highly committed to a brand often demonstrate strong preference and willingness to talk positively about the brand to other potential buyers in the market.

The study also confirmed that, among the brand equity dimensions, packaging ($\beta = 0.838$) has a greater impact on brand loyalty in the OTC medicine market. This demonstrates that packaging plays a strategic role in supporting the formation of brand loyalty in the OTC market. Therefore, herbal medicines companies will gain substantially if packaging takes a centre stage in their brand-building efforts in the OTC health care market.

6.8 Chapter Summary

The chapter reported the significant empirical findings of the research by discussing the findings in the context of past studies and existing literature. Medicinal herbal product brands sold at the OTC market in Kumasi have demonstrated positive brand equity. The major sources of the value of the brands of plant medicines in the OTC market are brand loyalty, brand association, strong name awareness. Though there are pockets of herbal medicines sold at the OTC market which are not well-packaged to make a substantial impact in the market, there are a large number of plant medicines which are distinctively packaged. As a result, these well-packaged brands have contributed immensely to improve perceived quality, brand awareness, brand association and brand loyalty of these brands and ultimately, the overall brand equity in the OTC drug market. The ensuing chapter will present the summary, conclusion and recommendation of this research.

CHAPTER SEVEN

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

7.1 Introduction

The preceding chapter presented discussions of the main findings of the research in the light of the objectives of the research. This chapter now reports on the summary of the thesis, draws conclusions and recommendations from the findings consistent with the objectives of the research. The chapter further concludes the research by providing the areas for possible future research.

7.2 Summary of the Research

The research examined the influence of packaging and brand equity on herbal medicines sold at the OTC market in Kumasi. As a result, the study evaluated customers' perceptions of packaging of medicinal herbal products in the OTC market in Kumasi. The research also sought to investigate the key drivers of value of brands of herbal medicines in the OTC product market in Kumasi.

The thesis was made up of seven chapters. The First Chapter presented the overview of the research problem at hand and its settings by providing the background information, the research problem, research objectives and specifying how the thesis was structured. Despite, the numerous advantages conveyed by distinctive packaging design and brand equity in today's competitive business environment, it was noted that traditional herbal medicine firms are yet to realize the full benefits in the OTC medicine market in Kumasi. Therefore, it was proposed that the introduction of packaging in the strategic brand practices of traditional herbal medicine companies can lead to improved performance of brands of herbal medicines in the OTC drug market in Kumasi and Ghana as a whole. The chapter outlined three-fold research objectives; to examine the influence of packaging on brand equity of herbal medicines in the OTC pharmaceutical market; to investigate the brand equity of herbal medicines in the OTC drug market; and finally, to examine customers' perceptions of packaging of herbal medicines sold at the OTC market in Kumasi Metropolis. The research questions were directly deduced from the objectives of the study.

The second chapter presented a comprehensive review of extant literature on packaging, brand equity, OTC medications and traditional herbal medicine. The literature review chapter also revealed that herbal medicines have gained popularity in recent years both in the developing and developed world. It was well-noted in the literature review that plant medicines are bought to fight against chronic and minor ailments as well as for the maintenance of health and are often used as non-prescription medications. The literature reviewed also brought to the fore a number of attributes of packaging design which include colour, photography, typography, size/shape, material and printed information. The literature reviewed indicates that the packaging together with its attributes performs three-fold functions: logistic, marketing and environmental roles in the OTC drug market. The chapter also pointed out that the concept of brand equity has been operationalized in three different ways: financial-based, customer-based and hybrid-based perspectives. However, it was very clear from the marketing literature that most authors have approached brand equity based on customer memory-based structures focusing on customer perceptions of brand equity.

In Chapter Three, theoretical models of CBBE underpinning the study were discussed. It was obvious in the literature review chapter that the most widely-used CBBE models were those propounded by the Keller (1993) and Aaker (1991; 1996). Relying on the dimensionality of Aaker's (1996) CBBE model, the researcher developed a conceptual model of brand equity of herbal medicines and proposed hypotheses to test the plausibility of the model. The model has three distinct theoretical constructs: packaging (exogenous variable), brand equity dimensions (mediating variables) and overall brand equity (endogenous variable) based upon which the research hypotheses were developed to address the purpose of the study.

The fourth chapter presented the account of how the research was conducted. Issues relating to validity and reliability of the test instruments were discussed so as to generate reliable and valid results of the study. In order to achieve the objectives of the study, quantitative research methodology was used to align the research with the positivist assumptions which underlie the study. A survey questionnaire, specifically, closed-ended questions, were employed to gather data from 348 customers from 71 shop floors of OTC drug stores. The methodology chapter also addressed the ethical issues to ensure that the study was not conducted unethically. In this regard, ethical clearance was sought from the Humanities and Social Sciences Research Ethics Committee in University of KwaZulu-Natal which was approved with reference number *HSS/1922/017D*. The data collected was analysed using a statistical software known as Social

Package of Statistical Software (SPSS) and aided by Analysis of Moment Structures (Amos) version 22, for both descriptive statistics and structural equation modelling respectively.

In Chapter Five, the results from the data analysis were presented and explained. First, Cronbach alpha statistics were conducted to analysis the internal consistency reliability of the test items and the results were satisfactory. Composite reliability was also undertaken to test for construct reliability in the CFA and the results indicate that all the latent variables had satisfactory internal consistency reliability. Validity measures were validated through EFA and CFA and further supported by AVE and the results proved acceptable. Given that quantitative research methodology was employed, numeric data was reported and explained. The chapter presented results from both descriptive statistics and inferential statistics, specifically, EFA and SEM. Structural equation modelling was carried out in two phases as recommended in the literature. First, a measurement model was carried out through CFA to confirm the results of the EFA and also to provide a further test for construct reliability and validity. This was followed by a structural model to analyse the proposed hypotheses in the study. The chapter also reviewed and explained the model fit indices and also provided the path diagrams of both the measurement and structural models of the SEM.

In Chapter Six, the researcher discussed the results presented in Chapter Five in relation to the extant literature and past studies. Guided by the research objectives, this chapter discussed the customer perceptions of packaging of medicinal herbal products distributed at the OTC drug market, the brand equity of herbal medicines and the contribution of packaging to the value of brands of plant medicines in the OTC pharmaceutical market.

Consistent with past studies, the current research supported the hypotheses that overall brand equity is positively affected by brand association, brand awareness and brand loyalty in the OTC drug market. Added, a total of 89% of customers who took part in the research were happy with the appearance of the herbal medicines. Given this result, the research confirmed the proposition that packaging positively and significantly influence overall brand equity of herbal medicines through the mediating role of brand association, brand loyalty and brand awareness. However, the study supported the hypothesis that brand quality is significantly influenced by packaging but rejected the proposition that perceived quality through packaging contributes to enhance overall brand equity. Overall, the research established that packaging has significant but mediated influence on overall brand equity.

In the seventh chapter, the researcher provides the overview of the thesis, highlighting the extent to which the empirical results have addressed the research questions and hence, the objectives. The chapter highlighted the key findings of the research upon which conclusions are drawn, while recommendations and directions for future studies are proposed based upon the conclusions and limitations of the research.

7.3 Recommendations

Based upon the results of the research, the researcher proposes the following recommendations.

- The study found that brand awareness positively and significantly influence the value of brands of herbal medicines in the OTC pharmaceutical market. Hence, herbal medicine companies should allocate resources to create strong awareness so that the brands can be instantly recognized and recalled by customers to enhance their value in the OTC pharmaceutical market.
- Moreover, the study confirmed that brand associations contributes to enhance the brand equity of herbal medicines in the OTC pharmaceutical market in Kumasi Metropolis. Therefore, traditional herbal medicine practitioners should create positive image for their brands to increase the value of the brands in the OTC market. Efforts should also be made to improve the product features to enrich the perceived value of the brand to support brand associations.
- Furthermore, the study points out that brand loyalty is the major source of value for brands of herbal medicines in the OTC market. Recognizing the strategic role of loyalty in the OTC drug market, herbal medicine manufacturers should invest more resources to develop loyalty and if increased, can enhance the strength of their brands in the OTC market in Kumasi Metropolis.
- The study also established that perceived quality has no positive and significant influence on the value of brands of herbal medicines sold at the OTC market in Kumasi Metropolis. Perceived product quality is recognised as key business thrust for many companies and can be the motivation for programs designed to enhance brand equity.

Moreover, perceived quality has been identified as one of the top-rated assets that provides sustainable competitive advantage for firms (Aaker, 1992). As a result, traditional medicine firms should produce high quality products consistently, especially compared to competitors' products to enrich their customers' perceptions of quality of their brands.

- In addition, traditional medicine firms should constantly track and measure customers' awareness, association and loyalty of their brands in order to sustain and increase the value of their brands in the OTC pharmaceutical market in the Metropolis.
- The results of this study also confirm Aaker's (1996) customer-based brand equity model. In this regard, traditional medicine companies can adopt this model in their marketing strategy to provide focus and guidance for assessing previous marketing activities and design future marketing actions for their brands.
- The study also found that a large majority (89.0) of the customers were of the view that the packaging of herbal medicines was of good quality, whilst 2.1% of them were of the opinion that the packaging is bad. Although, a marginal percentage of the customers were dissatisfied with the overall packaging of herbal medicines, traditional herbal medicine companies still need to improve upon the packaging to enhance customer perceptions of overall packaging design of plant medicines in the OTC market.
- The study also revealed that packaging significantly contributes to strengthen brand awareness, loyalty, association and perceived quality of herbal medicines in the OTC drug market in Kumasi. Consequently, traditional herbal medicine firms should frequently track customers' perceptions of packaging, especially the design elements of the herbal medicines with the view to supporting the awareness, association, loyalty and perceived quality of their brands in the OTC market.
- The findings of the research established that packaging has stronger influence on brand loyalty than any other brand equity dimensions in the OTC health market in Kumasi Metropolis. As a result, traditional herbal medicine companies should go beyond the industry's regulatory requirements of packaging and design customer-driven packages

through the combination of colours, photograph and typography to satisfy their customers to support brand loyalty.

- The study also revealed that packaging significantly contributes to strengthen overall brand equity of herbal medicines through the mediating impact of brand awareness, loyalty and association in the OTC drug market in the Metropolis. Consequently, traditional herbal medicine companies should not consider packaging as an afterthought but rather prioritize packaging decisions in their branding strategy to develop customers' awareness, associations, loyalty and perceptions of quality to enhance brand equity in the OTC drug market in the Metropolis.
- The empirical findings of the research demonstrate that packaging has stronger influence on brand loyalty than any other brand equity constructs and hence, overall brand equity in the OTC health market in Kumasi. Hence, traditional herbal medicine companies should go beyond the industry's regulatory requirements of packaging and design customer-driven packages through the combination of colours, photograph and typography to satisfy their customers to support brand loyalty.

7.4 Contribution to Body of Knowledge

A review of marketing literature shows that many authors have investigated the importance of brand equity in the FMCGs industry of late (e.g. Pappu *et al.*, 2005; Buil *et al.*, 2013; Asif *et al.*, 2016; Yoo *et al.*, 2000; Gil *et al.*, 2007), but few researchers (e.g. Schuiling & Moss, 2004; Panchal *et al.*, 2012; Sanyal & Datta, 2011) have concentrated on the significance of brand equity in the OTC pharmaceutical market. Moreover, the few studies focused on the importance of brand equity in the orthodox health care industry. Currently, there is little or no research that has examined brand equity of herbal medicines in the OTC pharmaceutical market. Therefore, the current study is unique and hence, the study has bridged the knowledge gap by contributing to advance the existing stock of literature on brand theory of plant medicine in the OTC drug market.

The study relied on Aaker's (1991; 1996) CBBE framework and the findings indicate that the drivers of value for brands of herbal medicines in the OTC product market are brand loyalty, brand association and brand awareness. These results of the thesis are important since they

supplement earlier studies and have contributed simultaneously to the current body of knowledge of CBBE in the OTC health market because this is the first time model of this kind has been adopted to empirically examine the brand equity of plant medicines in the OTC drug market.

Moreover, the results of this study are important because they have provided knowledge and understanding to traditional herbal medicine practitioners on how they can develop, track and manage the value of their brands in the OTC pharmaceutical market. More importantly, the study confirmed that brand loyalty has greater influence on the value of brands of medicinal herbal products in the OTC market. Given the relative scarcity of resources, this would help traditional herbal medicine firms to concentrate their efforts to develop brand loyalty to build strong brands in the OTC pharmaceutical market.

Moreover, the impact of packaging on customer-buying decisions (e.g. Deliya & Parmar, 2012; Silayoi & Speece, 2004; 2007; Rundh, 2005; Rettie & Brewer, 2000) and brand communications (e.g. Underwood & Klein, 2002; Underwood, 2003; Agariya *et al.*, 2012) in the traditional customer packaged goods market is well-documented in the marketing literature. However, few authors have identified the influence of packaging on brand equity (e.g. Brodersen & Manolova, 2008; Pieterse, 2013) in the customer packaged goods industry. The limited empirical studies concentrated on only the influence of packaging on the brand equity constructs rather than on the overall brand equity. Essentially, no previous empirical research has investigated the influence of packaging on the overall brand equity. As a result, this thesis has contributed to enhance the existing body of knowledge on packaging and brand equity as it is one of the few studies that have examined the significance of packaging in supporting the overall brand equity, more specifically, in the OTC pharmaceutical market. This has enabled the importance of packaging to brand equity to be viewed holistically, particularly, in the OTC health care market.

The study employed the dimensionality of Aaker's (1996) CBBE model to ascertain the influence of packaging on overall brand equity of plant medicines in the OTC product market. The study found that the overall value of brands of herbal medicines is positively influenced by packaging through the mediating impact of brand loyalty, brand awareness and brand association. The empirical results of the study have also advanced the current frontiers of knowledge of traditional herbal medicine firms as the study has brought to light the key

importance of packaging in supporting the formation of brand equity in the OTC pharmaceutical market. Consequently, herbal medicine companies can adopt this model and strengthen the overall value of their brands by designing attractive and innovative packaging through effective combination of colours, photograph, typography, material, printed information and size and shape. The study also established that packaging has a stronger influence on brand loyalty and ultimately, overall value of the brand.

Moreover, this thesis is one of the few studies that has empirically confirmed that packaging has a significant but indirect effect on brand equity, particularly in the OTC pharmaceutical market. As result, the study would equip managers of plant medicine companies with knowledge and insight about the strategic role of packaging to brand equity in the OTC health care industry.

7.5 Limitations of the Research

Although the present research is based on robust methodology and extant literature, the study had some challenges.

Not all the herbal medicine retail shops operating in the Kumasi Metropolis had registered with the Traditional Medicine Practice Council (TMPC). Hence, only those registered herbal retail outlets were included in the study. Moreover, some of the licensed herbal shops operating outside the central business district and along the main streets in the metropolis were difficult to locate immediately. Maps and directions of locations were not displayed either on billboards or digitalized. Directions to some of these shops were made possible through the information obtained from the residents in those suburbs.

Also, the study was restricted to Kumasi Metropolis due to cultural diversity, time and financial constraints. This implies that, generalisation of the research findings to the entire nation might not be possible. Therefore, a tactful approach was adopted to limit the generalization of the results to the city under study only.

Furthermore, the research was conducted on only herbal medicines produced locally and a sample was selected from the end-users of this product. Drawing from only a single product category suggests that the findings of the research could not be generalized across non-durable packaged customer goods. Nonetheless, the findings of the research could be applicable to non-

prescription orthodox drugs that are sold at the OTC market where there is little or no assistance by the health care professionals.

Moreover, Made-in-Ghana herbal medicines are sold online as well as in the shops in Ghana. However, this study was limited to only in-store retail environment and consequently, the online customers` perceptions of packaging and brand equity of herbal medicines were not captured in this research. As a result, the findings of the research could not be generalized to the entire OTC retail market.

Furthermore, the study was conducted in the Kumasi metropolis, the second largest city in Ghana where majority are literate population and have moderate to high income. This indicates that the findings of the study did not include the perceptions of customers who are illiterate, poor and reside in rural communities in Ghana.

Finally, the study employed only quantitative research design where closed-ended questionnaires were used to capture the views of customers on packaging and brand equity to achieve the purpose of the study. Consequently, the current research methodology employed did not for in-depth investigation of the research problem.

7.6 Direction for Future Research

The purpose of the current study was to examine the influence of packaging and overall brand equity of plant medicines in the OTC medicine market in Kumasi Metropolis. Consequently, the study was confined only to Kumasi. Therefore, a larger sample of respondents from different parts of the country could be included in similar research in order to generalize the results across the population in Ghana. While increasing the geographical location of the present study, different samples of products could be selected to further enhance the generalizability of the findings across wider product categories.

In addition, the current research relied on the quantitative research option where closed-ended questions were solely used to capture the views of respondents to address the research problem. A similar research is proposed by employing a mixed method paradigm to allow in-depth study of the research problem to counter the limitations of the current research methodology.

Moreover, customer perceptions of and their attitudes towards packaging and branding might change or develop over time. The current research employed a cross-sectional survey to capture the perceptions and attitudes of customers on the impact of packaging on brand equity and the dimensions of brand equity on brand equity at one point in time. There is a need to employ longitudinal survey research to assess the changing customer perceptions and behaviour over time to enrich the current study.

The present research employed customer perceptions to study the brand equity of herbal medicines sold at the OTC market. To understand the financial outcome of the CBBE of OTC herbal medicines, it is further proposed that similar research should be carried out to study the financial value of brands of herbal medicines in the OTC pharmaceutical market.

Moreover, the study was limited to in-store environment and for that matter future research should consider online retailing of herbal medicines in Ghana. This could further enhance the generalizability of the findings to the retailing of herbal medicines in Ghana.

The current study investigated consumers' perceptions of one of the elements of a brand (i.e., packaging) and its influence on brand equity in the OTC drug market. Future research can be carried to examine the other brand elements like, brand name, slogan, symbols, jingles and logo and their influence on brand equity in the OTC market.

7.7 Conclusion

The purpose of this thesis was to examine the influence of packaging and brand equity of herbal medicines in the OTC pharmaceutical market. As a result, the study also sought to identify the customers' perceptions of packaging of plant medicines in the OTC market. The research further examine the key sources of brand equity of medicinal herbal products in the OTC product market.

First, the study established that brand associations, brand awareness and brand loyalty are the value-creating assets of brands of herbal medicines in the OTC pharmaceutical market. This outcome confirmed the dimensionality of Aaker's (1996) CBBE model. More importantly, the study found that, among the CBBE dimensions, brand loyalty has dominant impact on overall value of brands in the OTC health market. The research therefore confirms that brand loyalty is the most important characteristics of a healthy brand and concurs with both Aaker's (1996)

and Keller's (2001) CBBE models which suggest that brand loyalty is the 'heart' of brand equity.

As competition in the pharmaceutical industry as whole increases and differences in product performance get closer and closer, traditional herbal medicine firms can be ahead of the competition by developing and managing the dimensions of the brand equity in the OTC market. In addition, efforts directed towards developing loyalty in the OTC drug market will substantially contribute to enhance the value of brands of herbal medicines. While a company's market offerings can be obsolete and/or copied by similar firms, a strong brand is unique and timeless (Kotler & Pfoertsch, 2006). Consequently, branding cannot be considered as an afterthought by plant medicine companies but rather prioritize it in their strategic marketing decisions.

Moreover, the study points out that a large majority of the customers consider packaging of herbal medicines as attractive and durable. As a result, the packaging design of herbal medicines contributed significantly to enhance brand awareness, brand loyalty, brand association and perceived quality of herbal medicines in the OTC market. The study also further confirmed that packaging has indirect impact on brand equity through the mediating influence of brand awareness, brand associations and brand loyalty of plant medicines in the OTC drug market.

The study therefore establishes that a well-designed packaging strengthens brand loyalty, perceived quality, brand image and brand awareness, and hence the overall performance of the brands in the OTC market. More importantly, designing appealing packaging for herbal medicines will have a dominant impact on brand loyalty and ultimately, the brand strength in the OTC medicine market. Although, customers depended on packaging to subjectively evaluate the quality of plant medicines, the perceived quality of the herbal medicines induced by the packaging was very low to contribute to enhance the overall brand strength of plant medicines in the OTC market.

Obviously, a distinctive packaging is as an important brand-building tool as it plays a similar role as the marketing communications element in building healthy brands in the OTC pharmaceutical market. This confirms that apart from packaging performing logistic functions, it is also an important marketing tool in the OTC pharmaceutical market. Ultimately, traditional

herbal medicine companies can enhance and sustain brand loyalty, brand awareness and brand association and hence, the overall value of their brands by producing distinctive product packaging.

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APPENDICES

Appendix 1A: Herbal Drug Capsules Bought By Respondents

	Herbal Medicines Capsules	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Anti-fatigue & Inflammations	1	3.6	3.6	3.6
	Genecure	1	3.6	3.6	7.1
	Gidi Power	1	3.6	3.6	10.7
	Givers	5	17.9	17.9	28.6
	Kingdom	2	7.1	7.1	35.7
	Osompa	1	3.6	3.6	39.3
	Postarite	1	3.6	3.6	42.9
	Sak	1	3.6	3.6	46.4
	Samenk	2	7.1	7.1	53.6
	Sibi Men	1	3.6	3.6	57.1
	Sibi Womens Capsule	1	3.6	3.6	60.7
	Tinatett	6	21.4	21.4	82.1
	Victory Garlic	1	3.6	3.6	85.7
	Yafo	1	3.6	3.6	89.3
	Zamna	1	3.6	3.6	92.9
	Zipman	2	7.1	7.1	100.0
	Total	28	100.0	100.0	

Appendix 1B: Herbal Medicine Ointment Bought by Participants

	Herbal Medicine Ointment/Creams	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Angel	4	28.6	28.6	28.6
	Boafo Ointment	1	7.1	7.1	35.7
	Dompe Dompe	1	7.1	7.1	42.9
	Ebenezer Ointment	2	14.3	14.3	57.1
	Genecure	1	7.1	7.1	64.3
	ILO Jonns	1	7.1	7.1	71.4
	Laud	2	14.3	14.3	85.7
	Mercy Cream	2	14.3	14.3	100.0
	Total	14	100.0	100.0	

Appendix 1C: Herbal Medicine Mixture Bought by Participants

	Herbal Medicine Mixtures	Frequency	Percent	Valid Percent	Cumulative Percent
Valid		1	.4	.4	.4
	Adom	10	4.1	4.1	4.5
	Adutwumwaa	24	9.8	9.8	14.3
	Adwoa Herbal	1	.4	.4	14.8
	Agbevi Tonic	2	.8	.8	15.6
	Akos Herbal	1	.4	.4	16.0
	Alpha Garlic	1	.4	.4	16.4
	Angel	2	.8	.8	17.2
	B.R.S. Mixture	2	.8	.8	18.0
	Bethel GPC	1	.4	.4	18.4
	Champion	1	.4	.4	18.9
	Danni	2	.8	.8	19.7
	Divine Garlic	2	.8	.8	20.5
	Dr. Boateng	2	.8	.8	21.3
	Dr. Forkuo Herbal	2	.8	.8	22.1
	Entras and Appilege	1	.4	.4	22.5
	Enye Mahoden	1	.4	.4	23.0
	Givers	5	2.0	2.0	25.0
Ibrahim Mixture	2	.8	.8	25.8	

	K and G herbal	2	.8	.8	26.6
	Kingdom	2	.8	.8	27.5
	Lawson Herbal	1	.4	.4	27.9
	M.Y. Caesar Tea	2	.8	.8	28.7
	Madam Catherine	2	.8	.8	29.5
	Malamix	2	.8	.8	30.3
	Rooter Mixture	3	1.2	1.2	31.6
	Sahat	1	.4	.4	32.0
	Sak	1	.4	.4	32.4
	Solak	9	3.7	3.7	36.1
	Sparnis	4	1.6	1.6	37.7
	Sparnis Garlic	4	1.6	1.6	39.3
	Taabea	100	41.0	41.0	80.3
	Time	41	16.8	16.8	97.1
	Top Tonic	1	.4	.4	97.5
	Ulcerplex	1	.4	.4	98.0
	Victory	2	.8	.8	98.8
	Victory Garlic	1	.4	.4	99.2
	Yaakson	1	.4	.4	99.6
	Yafo	1	.4	.4	100.0
	Total	244	100.0	100.0	

APPENDIX 2: INFORMED CONSENT

University of KwaZulu-Natal School of Management, IT and Governance

Durban, South Africa

Researcher: Peter Oppong Kwasi / 024 660 8781

Supervisor: Prof Maxwell A. Phiri /+27 33 260 5843

Date.....

Dear Respondent,

I am Peter Kwasi Oppong, a Doctor of Philosophy (PhD) student in the School of Management, Information Technology and Governance of University of KwaZulu-Natal, Durban in South Africa. You are invited to participate in a research study entitled: “The Influence of Packaging and Brand Equity on Over-the-Counter Herbal Medicines in Kumasi, Ghana” for my PhD degree. The purpose of the research is to identify the contribution of packaging to the value of brands of herbal medicines sold at over-the-counter drug market in Kumasi Metropolis.

Through your participation, I will be able to understand the role of packaging design in strengthening the value of brands of herbal drugs sold at over-the-counter drug market. The elements of a brand's value include: brand awareness, brand quality, brand loyalty and customers` mental associations with the brand. The results of the research are intended to contribute to improve packaging design and the value of brands of herbal medicines sold at the over- the-counter domestic drug market.

Your participation in this survey is completely voluntary, and you may refuse to participate or withdraw from the research at any point in time with no negative consequences. There will be no monetary gain from participating in the survey. Moreover, your identity as a participant will be kept confidential and anonymous throughout the entire survey and by no means will it appear in print. I would appreciate if you would participate and permit me to use your responses for the research purpose only. The data provided will also be stored securely during the research and archived for a period of five years at the University of KwaZulu-Natal and thereafter, the data will be destroyed. This research has been ethically reviewed and approved by the University of KwaZulu-Natal Humanities and Social Sciences Research Ethics Committee with the approval number *HSS/1922/017D*.

If you have any queries or concerns about completing the questionnaire, or about participating in the research, please do not hesitate to contact my Supervisor on the above listed address or the University of KwaZulu-Natal Humanities & Social Sciences Research Ethics Committee at the address below:

Humanities & Social Sciences Research Ethics Administration

Research Office, Westville Campus

Govan Mbeki Building

Private Bag X 54001

Durban, 4000

KwaZulu-Natal, South Africa

Tel: 27 31 2604557

Email: HSSREC@ukzn.ac.za

The survey should take you approximately 15 minutes to complete. I hope you will take the time to complete the survey.

Sincerely,

.....

Peter Kwasi Oppong

Required*

Please, indicate below your consent to participate in this survey. ***I hereby:***

Agree to the terms and conditions stated above

Do Not agree to the terms and conditions stated above

APPENDIX 3: QUESTIONNAIRE

SECTION A: BIOGRAPHICAL DATA

Please, select the check box that applies to you.

Gender: Male 01 Female 02

Age: 18 – 25 years 01 26 – 35 years 02 36 – 45 years 03

46 – 60 years 04 More than 60 years 05

Education: Basic education 01 Secondary education 02 Diploma education 03

Tertiary education 04 any other specify.....

Occupation/ Profession: Teaching 01 Trading 02 Artisan 03 Nurse 04 Clerk 05 Security 06 Manager 07 any other specify.....

Income spend per day: Less than \$1 01 \$1 to less than \$2 02 \$2 to less than \$4 03

Greater than or equal to \$4 05 any other specify.....

SECTION B: BRAND EQUITY DIMENSIONS AND BRAND EQUITY

Please, tick and fill in the questions that apply to you.

Do you frequently buy herbal drugs? Yes 01 [] No 02 []

Name the brand (s) of herbal drug that you buy frequently.....

SECTION C: ATTRACTIVENESS OF ELEMENTS OF PACKAGING DESIGN

Please, tick (√) in the box provided below that matches your view on the quality of each element of packaging design of herbal drugs that you buy.

Packaging Elements	Extremely Good	Very Good	Good	Average	Bad	Very Bad	Extremely Bad
	1	2	3	4	5	6	7
Colour							
Photography							
Size/Shape							
Printed Information							
Packaging Material							
Typography							
Overall Packaging							

SECTION D: PACKAGING AND BRAND EQUITY

Please, indicate the degree at which you agree or disagree with the following statements by ticking the boxes provided using the following scale; 1= Strongly Disagree (SD)

2 =Disagree (D) 3 = Neutral (N) 4 =Agree (A) 5 = Strongly Agree (SA)

I: Packaging

	Statements	1	2	3	4	5
1	The packaging offer better protection for this brand					
2	The packaging preserves the contents of this brand					
3	The packaging provides enough information about this brand					
4	The packaging of this brand makes this brand environmentally-friendly					
5	The packaging of this brand makes this brand convenient to use					
6	This brand`s packaging makes this brand portable					

II: Brand Awareness

	Statements	1	2	3	4	5
1	I am familiar with the packaging of this brand					
2	I can easily recognize the packaging of this brand among other competing brands					
3	Some characteristics of this brand`s packaging come to my mind quickly					
4	When I think about this brand, the first thing that comes to my mind is its packaging					
5	I am aware of the packaging of this brand					

V: Perceived Quality

	Statements	1	2	3	4	5
1	The packaging of this brand makes this brand function well					
2	The packaging of this brand makes this brand very reliable					

3	The packaging of this brand shows that the quality of the brand is very high					
4	I can always trust this brand`s packaging for quality if I want a brand of high quality					
5	This brand`s packaging makes the product safe for use					

III: Brand Association

	Statements	1	2	3	4	5
1	This brand`s packaging makes this brand offer good value for money					
2	This brand`s packaging makes me like the image of this brand					
3	The packaging of this brand makes the image of this brand unique compared to its competing brands					
4	The packaging of this brand makes me like and trust the company that made this brand					
5	The packaging of this brand makes me respect and admire people who buy this brand					

VI: Brand Loyalty

	Statements	1	2	3	4	5
1	The packaging of this brand would make this brand my first choice when buying herbal drug					
2	The packaging of this brand would make me recommend this brand to my friends					
3	Considering this brand`s packaging, I am willing to buy this brand even if its price is a little higher than that of competing brands					
4	The packaging of this brand makes me loyal to this brand					
5	I will keep on buying this brand as long as I am satisfied with the packaging of this brand					

VII: Overall Brand Equity

	Statements	1	2	3	4	5
1	This brand`s packaging gives me reason to buy this brand instead of any other brand, even if they are the same in quality or price					
2	The packaging of this brand would make me prefer to buy this brand, even if another brand has the same features as this brand					
3	The packaging of this brand makes this brand more than a product to me					
4	This brand`s packaging makes it seems smarter to purchase this brand, if another brand is not different from this brand in any way					
5	The packaging of this brand makes me prefer this brand, if there is another brand as good as this brand					

APPENDIX 4: TURNITIN ORIGINALITY REPORT

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APPENDIX 5: ETHICAL CLEARANCE CERTIFICATE

 <p>UNIVERSITY OF KWAZULU-NATAL INYUVESI YAKWAZULU-NATALI</p>
<p>28 November 2017</p> <p>Mr Peter Kwasi Oppong (214585766) School of Management, IT & Governance Westville Campus</p> <p>Dear Mr Oppong,</p> <p>Protocol reference number: HSS/1922/017D Project title: The influence of Packaging and Brand Equity of Over-the-Counter Herbal Medicines in Kumasi, Ghana</p> <p style="text-align: right;">Approval Notification – Expedited Approval</p> <p>In response to your application received on 10 October 2017, the Humanities & Social Sciences Research Ethics Committee has considered the abovementioned application and the protocol has been granted FULL APPROVAL.</p> <p>Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment/modification prior to its implementation. In case you have further queries, please quote the above reference number.</p> <p>PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years.</p> <p>The ethical clearance certificate is only valid for a period of 3 years from the date of issue. Thereafter Recertification must be applied for on an annual basis.</p> <p>I take this opportunity of wishing you everything of the best with your study.</p> <p>Yours faithfully</p> <p> Dr Shamila Naidoo (Deputy Chair)</p> <p>/ms</p> <p>Cc Supervisor: Professor Maxwell A Phiri Cc Acting Academic Leader Research: Professor Isabel Martins Cc School Administrator: Ms Angla Pearce</p>
<hr/> <p style="text-align: center;">Humanities & Social Sciences Research Ethics Committee Dr Shenuka Singh (Chair) Westville Campus, Govan Mbeki Building Postal Address: Private Bag X54001, Durban 4000 Telephone: +27 (0) 31 260 3587/8393/4557 Facsimile: +27 (0) 31 260 4808 Email: ximbao@ukzn.ac.za / arymanm@ukzn.ac.za / mohunp@ukzn.ac.za Website: www.ukzn.ac.za</p> <p style="text-align: center;"> 1910 - 2010 100 YEARS OF ACADEMIC EXCELLENCE</p> <p>Founding Campuses:  Edgewood  Howard College  Medical School  Pietermaritzburg  Westville</p>

APPENDIX 6: GATEKEEPER LETTERS

P. O. Box AH 8048
Ahinsan - Kumasi
Ashanti Region
Tel: 0246 608 781
Email: peteroppong72@gmail.com

25th July, 2017

The Chairman,
GHAFTRAM
Kumasi
Ashanti Region

Dear Sir,

A REQUEST FOR PERMISSION TO CONDUCT RESEARCH ON HERBAL MEDICINES SOLD IN KUMASI METROPOLIS

I am Peter Opong Kwasi, a Doctor of Philosophy (PhD) student in the Department of Marketing Management in the School of Management, IT and Governance in the University of Kwa-Zulu Natal in South Africa. The title of my research project is "**The Influence of Packaging and Brand Equity of Over-the-Counter Herbal Medicines in Kumasi, Ghana**". The purpose of the study is to investigate the impact of packaging design on brand equity of herbal medicines sold at the over-the-counter drug market in Kumasi metropolis. Data will be gathered through the distribution of questionnaires to consumers of herbal drugs in the various herbal shops to solicit their views on how packaging contributes to the value of brands of herbal drugs sold at over-the-counter market in Kumasi metropolis. The results of the study are intended to enhance packaging design as well as the competitiveness of herbal medicines distributed at over-the-counter in the domestic market.

I hereby seek your permission to conduct this research on herbal medicines sold at over-the-counter within the Kumasi Metropolis. I promise that the data collected will be used for the purpose of the research only. For further information with respect to this research you may contact me on the above-mentioned address or my Supervisor, Professor Maxwell A. Phiri (Phirim@ukzn.ac.za) who can be located at the School of Management, IT and Governance, Pietermariburg Campus of University of KwaZulu-Natal, South Africa.

You may also contact the Research Office through:

Mariette Synman
HSSREC Research Office,
Tel: 031 260 4557
E-mail: HssrecLms@ukzn.ac.za

Your co-operation will be very much appreciated.

Yours faithfully,



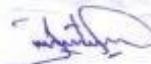
Peter Opong Kwasi

Should you give me permission to conduct this research on herbal medicines sold at over-the-counter shops in Kumasi Metropolis, please complete the following declaration;

I, J.K. Takyi the Chairman of Ghana Federation for Traditional Medicine Practitioners' Association (GHAFTRAM), Kumasi, hereby grant permission to Peter Opong Kwasi to conduct research on herbal medicines distributed at over-the-counter drug market in Kumasi Metropolis, Ghana. I understand that he will generate data through the use of questionnaires.

J.K. Takyi

Name of Chairman



Signature & Stamp

**PLANT MEDICINE
TRADITIONAL HEALERS' SOC
P.M.T.H.A / CHAIRMAN
ASU-NTI - REGION**

P. O. Box AH 8048
Ahinsan- Kumasi
Ashanti Region
Tel: 0246608781
E-mail: peteroppong72@gmail.com
10th October, 2016

The Regional Officer,
Herbal Medicine Department
Food & Drugs Authority
P.O. Box ST 402
Kumasi
Ashanti Region

Dear Sir,

**A REQUEST FOR PERMISSION TO CONDUCT RESEARCH ON HERBAL
MEDICINES IN KUMASI METROPOLIS**

My name is Peter Opong Kwasi, a Doctor of Philosophy (PhD) student in the Department of Marketing Management in the School of Management, IT and Governance in the University of Kwa-Zulu Natal in South Africa. The title of my research project is **“The Influence of Packaging and Brand Equity of Over-the-Counter Herbal Medicines in Kumasi, Ghana”**. The purpose of the study is to investigate the impact of packaging design on brand equity of herbal medicines sold at the over-the-counter drug market in Kumasi metropolis. Data will be gathered through the distribution of questionnaires to consumers of herbal drugs in the various herbal shops to solicit their views on how packaging design contributes to brand equity of over-the-counter herbal drugs in Kumasi metropolis. The results of the study are intended to contribute to enhance packaging design as well as the competitiveness of over-the-counter herbal medicines in both the domestic and international market.

I hereby seek your permission to conduct this research on herbal medicines sold at the over-the-counter within the Kumasi metropolis. I promise that the data gathered will be used for the purpose of the research only. For further information with respect to this research you may contact me on the above-mentioned address or my Supervisor, Professor Maxwell A. Phiri (phirim@ukzn.ac.za) who can be located at the School of Management, IT and Governance, Pietermariburg Campus of University of KwaZulu-Natal, South Africa.

You may also contact the Research Office through:

Mariette Snyman
HSSREC Research Office,
Tel: 031 260 8350
E-mail: HssrecLms@ukzn.ac.za

Your co-operation will be very much appreciated.

Yours faithfully,

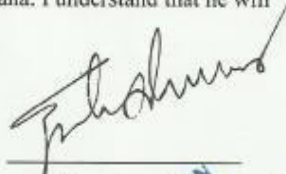


Peter Opong Kwasi

Should you give me permission to conduct the research on herbal medicines in Kumasi Metropolis, please complete the following declaration.

I, Regional Officer of Food and Drugs Authority, Kumasi, hereby grant permission to to conduct research on herbal medicines sold in Kumasi Metropolis, Ghana. I understand that he will generate data through the use of questionnaires.

Name of Regional Officer



Signature & Stamp

VIGIL E. PRAH-ASHANTI
REGIONAL OFFICER
FOOD AND DRUGS AUTHORITY
ASHANTI REGION

11/07/2016

P. O. Box AH 8048
Ahinsan - Kumasi
Ashanti Region
Tel: 0246608781
E-mail: peteroppong72@gmail.com
10th October, 2016

The Regional Director,
Traditional Medicine Practice Council
Kumasi
Ashanti Region

Dear Sir,

**A REQUEST FOR PERMISSION TO CONDUCT RESEARCH ON HERBAL SHOPS
IN KUMASI METROPOLIS**

My name is Peter Opong Kwasi, a Doctor of Philosophy (PhD) student in the Department of Marketing Management in the School of Management, IT and Governance in the University of Kwa-Zulu Natal in South Africa. The title of my research project is "**The Influence of Packaging and Brand Equity of Over-the-Counter Herbal Medicines in Kumasi, Ghana**". The purpose of the study is to investigate the impact of packaging design on brand equity of herbal medicines sold at the over-the-counter drug market in Kumasi metropolis. Data will be gathered through the distribution of questionnaires to consumers of herbal drugs in the various herbal shops to solicit their views on how packaging design contributes to brand equity of over-the-counter herbal drugs in Kumasi metropolis. The results of the study are intended to contribute to enhance packaging design as well as the competitiveness of over-the-counter herbal medicines in both the domestic and international market.

I hereby seek your permission to conduct this research on herbal medicine retail outlets that sell over-the-counter herbal drugs within the Kumasi metropolis. I promise that the data gathered will be used solely for the purpose of academic research. For further information with respect to this research you may contact me on the above-mentioned address or my Supervisor, Professor Maxwell A. Phiri (Phirim@ukzn.ac.za) who can be located at the School of Management, IT and Governance, Pietermariburg Campus of University of KwaZulu-Natal, South Africa.

You may also contact the Research Office through:

Mariette Synman
HSSREC Research Office,
Tel: 031 260 8530
E-mail: HssrecLms@ukzn.ac.za

Your co-operation will be very much appreciated.

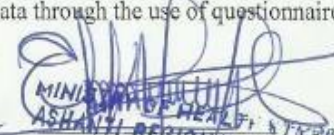
Yours faithfully,


Peter Opong Kwasi

Should you give me permission to conduct the research on herbal medicines in Kumasi Metropolis, please complete the following declaration.

I, STEPHEN NYEDUA..... the Regional Director of Traditional Medicine Practice Council (TMPC), Kumasi, hereby grant permission to MR. PETER OPPONG KWASI.....to conduct research on Herbal Shops in Kumasi Metropolis, Ghana. I understand that he will generate data through the use of questionnaires.

STEPHEN NYEDUA
Name of Regional Director


MINISTRY OF HEALTH & TMPC
ASHANTI REGIONAL OFFICER
Signature & Stamp
SIGN _____



Editing Confirmation

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Report on document by: Peter Oppong

Document title: The Influence of Packaging and Brand Equity on Over-The-Counter Herbal Medicines in Kumasi, Ghana

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