EFFECT OF MARKETING MIX STRATEGY ON PHYSICIAN SATISFACTION IN THE YEMENI PHARMACEUTICAL INDUSTRY: PERCEIVED VALUE AS A MEDIATOR

By

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LIST OF ABBREVIATIONS

MMS	Marketing Mix Strategy
P	Product
PRI	Price
PL	Place
PRO	Promotion
CS	Customer Satisfaction
PHS	Physician Satisfaction
PV	Perceived Value
CPV	Customer Perceived Value
PQ	Perceived Quality
PS	Perceived Sacrifice
LMD	Locally Manufactured Drug
LPC	Local Pharmaceutical Companies
MR	Medical Representative
EFA	Exploratory Factor Analysis
KMO	Kaiser-Meyer-Olkin

Kesan gabungan Strategi Pemasaran dan kepuasan pakar perubatan dalam Industri Farmaseutikal di Yaman: Nilai Persepsi sebagai Pengantaraan

ABSTRAK

Kajian ini bertujuan untuk meneroka hubungan antara gabungan elemen strategi pemasaran (MMS) dan nilai tanggapan doktor terhadap industri farmaseutikal di Yaman. Kerangka penyelidikan ini telah dibangunkan berdasarkan kajian yang menyeluruh sebelum ini. Model kajian telah menggabungkan elemen MMS yang utama, seperti produk, harga, tempat dan promosi serta untuk menyiasat kesan pembolehubah tersebut terhadap nilai tanggapan serta kepuasan pakar perubatan. Nilai tanggapan adalah sangat signifikan menyumbang kepada tahap kepuasan yang tinggi. Nilai tanggapan ini dijadikan ukuran untuk menilai tanggapan kualiti dan mempunyai pengaruh pengantara yang kritikal di antara MMS dan kepuasan doktor dalam industri farmaseutikal. Untuk mencapai maksud kajian, sejumlah 500 borang soal selidik telah diedarkan kepada responden dan hanya 170 borang soal selidik telah dikembalikan dan dianalisis dengan menggunakan perisian SPSS. Kadar tindak balas yang boleh diperolehi adalah 34 %. Beberapa teknik analisis statistik telah dijalankan termasuk analisis kebolehpercayaan, analisis faktor , korelasi pearson , analisis regresi dan hierarki regrasi bertujuan untuk memeriksa kesan pengantaraan terhadap nilai tanggapan. Analisis perfaktor dan analisis kebolehpercayaan telah digunakan untuk menguji kesahan instrumen. Analisis korelasi menunjukkan bahawa hubungan antara elemen MMS, nilai tanggapan dan kepuasan doktor adalah signifikan. Manakala, keputusan analisis regresi berganda pula menunjukkan bahawa elemen MMS iaitu produk, harga tempat dan promosi adalah signifikan menyumbang kepada kepuasan doktor. Dapatan juga menunjukkan bahawa elemen MMS iaitu harga, tempat dan promosi dengan ketara menyumbang kepada nilai tanggapan, manakala elemen produk menunjukkan tidak signifikan.Akhir sekali, nilai tanggapan dilihat dengan ketara menyumbang kepada kepuasan doktor. Keputusan regresi hierarki menunjukkan bahawa nilai tanggapan adalah sebahagiannya pengantara hubungan antara MMS elemen, iaitu, harga, tempat, promosi, dan kepuasan pakar perubatan. Pembolehubah produk tidak termasuk dalam analisis hierarki kerana pembolehubah itu tidak signifikan kepada tanggapan nilai sebagai pembolehubah pengantara. Faedah utama bagi ahli akademik, pengurus dan pengamal telah dibincangkan di bawah implikasi praktikal dan teori. Cadangan untuk kajian akan datang telah disyorkan.

Effect of Marketing Mix Strategy on Physician Satisfaction in the Yemeni Pharmaceutical Industry: Perceived Value as a Mediator

ABSTRACT

This research explores the relationship between marketing mix strategy (MMS) and the perceived value of physician satisfaction in the Yemeni pharmaceutical industry. The research framework was developed on the basis of extensive previous studies. The research model incorporated key MMS elements, such as product, price, place, and promotion, and investigated the effect of these variables on perceived value and physician satisfaction. Perceived value is considered a critical antecedent to physician satisfaction. Perceived value denotes the total measure of perceived quality and perceived sacrifice of physicians and is a critical mediating influence between MMS and physician satisfaction in the pharmaceutical industry. A total of 500 questionnaires were randomly distributed to physicians. Data collection was self-administered, and a total of 170 questionnaires were returned and analyzed by using SPSS software 19. The usable response rate was 34 %. Several statistical techniques were performed including reliability, factor analysis, Pearson's correlation, multiple regression analyses, and hierarchical regressions to examine the mediation effect of the perceived value. Exploratory factor analysis with principal component method and reliability analysis were used to test the validity of the instrument. Correlation analysis indicated that the relationships among MMS elements, perceived value, and physician satisfaction were significant. Multiple regression analyses results showed that MMS elements, namely, product, price, place, and promotion significantly contributed to physician satisfaction. The results also indicated that MMS elements, namely, price, place, and promotion significantly contributed to perceived value, whereas product showed an insignificant contribution. Finally, the perceived value significantly contributed to physician satisfaction. Hierarchical regression results indicated that perceived value partially mediated the relationship among MMS elements, namely, price, place, promotion, and physician satisfaction. Product variable was excluded in hierarchical analyses because the variable was insignificant to perceived value as a mediator variable. Key benefits for academia, managers, and practitioners were discussed under practical and theoretical implications, and suggestions for future research were recommended.

CHAPTER 1

INTRODUCTION

1.1 Introduction

This chapter provides an overview of the study background, pharmaceutical industry in Yemen, problem statement, research questions and objectives, significance of the study, scope of the study, definition of terms, and organization of this thesis.

1.2 Study Background

The pharmaceutical industry has witnessed profound changes in the last few years because of global developments. Intensive competition to gain market share has created new threats for drug manufacturers (Kesic, 2009, p.60). However, the pharmaceutical industry remains one of the most innovative and profitable high-tech industries and has the largest potential in the world (Kasapi & Mihiotis, 2011, p.74).

On the practical side, pharmaceutical companies spend approximately 16% of their sales into research and development (R&D) and approximately 26% or more into marketing activities. Basic R&D, together with sales and marketing activities, is the most important operation and strategic priority of the pharmaceutical industry (Habib & Alam, 2011; Kesic, 2009).The purpose of spending for R&D and marketing is to encourage more physicians to prescribe pharmaceutical products and enhance physician satisfaction (PHS) (Bee, 2009, p.55; Sultana & Khosru, 2011). Therefore, to achieve

market success with a new product, pharmaceutical companies should invest in sales and marketing activities (Kesic, 2009, 2006) to obtain PHS.

The increasing pressure for new product development, the changes in the competitive environment, and the rate of technological changes have placed pharmaceutical companies under pressure to maintain customer satisfaction (CS) and loyalty (George, Lodorfos, & Mulvana, 2006).The challenge for pharmaceutical companies is to become customer-centric companies because product centricity is evidently insufficient to achieve success (Hazboun, 2006). Improving the interaction of pharmaceutical companies with their customers is becoming essential because the design and elements of marketing mix strategy (MMS) depend on physician demands (Vasiljev & Pantelic, 2010).Companies should develop and maintain a close relationship with physicians to understand their needs and behavior (Adoyo, Ondoro, Ojera, & Abong'o, et al., 2012; Sweidan, Al-Dmour, Al-Zu'bi, & Al-Dmour, 2012). Therefore, pharmaceutical companies should focus on PHS (Obaidat & Al Ghadeer, 2011; Sweidan et al., 2012).

Marketing has become the backbone of all industries, including the medical and pharmaceutical industries. Although the pharmaceutical industry produces life-saving drugs, such companies also need to conduct marketing activities (Habib & ALam,2011) because of increasing competition, presence of thousands of pharmaceutical companies and brands, and continuously increasing market size (Kalaskar & Sager, 2012). Moreover, the main focus of the competition is physicians, who are the main customers of pharmaceutical companies (Habib et al., 2011; Kalaskar et al., 2012; Spiteri & Dion, 2004; Sweidan et al., 2012).

Physicians decide which drugs to prescribe to patients (Kalaskar et al., 2012) and make recommendations on which drug should be selected by consumers (Sweidan et al., 2012). Physicians are seen as a force that controls the access of pharmaceutical products to final consumers (patients) (Sweidan et al., 2012). Many concerns have been raised regarding the influence of MMS (promotion) on physicians (Bee, 2009, p.56). All the MMS elements of pharmaceutical companies are usually focused toward physicians (Kalaskar et al., 2012). MMS elements that are related to product, price, promotion, and place are considered powerful tools for satisfying and convincing physicians to prescribe drugs (Kalaskar et al., 2012; Obaidat et al., 2011). Therefore, understanding the effect of MMS and achieving a high PHS level are the most important issues for many pharmaceutical companies (Obaidat et al., 2011).

CS has received considerable attention and is one of the most popular research topics in marketing (Faryabi, Kaviani, & Yasrebdoost, 2012; Haque & Highe, 2013; Swenson, 1997; Uddin & Akhter, 2012). CS is an issue that cannot be overlooked in marketing strategies (Yang & Peterson, 2004) because of its influence on the long-term relationships between companies and customers (Patterson, Lester, & Richard, 1997). To reduce the defection rate of customers and increase loyalty, both academicians and practitioners acknowledge that CS is a key element in any customer retention strategy (Guo, Xiao, & Tang, 2009; Oliver, 1999). CS can be an important tool to achieve competitive advantage (Raza, Siddiquei, Awan, & Bukhari, 2012). Nevertheless, the importance of CS to drug products within the pharmaceutical industry is still a relatively new topic in marketing. Despite the fact that there have been numerous researches to study CS (e.g., Milfelner, Snoj, & Korda, 2009; Spiteri et al., 2004) in different industries, there is no extant research concerning PHS in pharmaceutical industry.

Pharmaceutical companies need to employ MMS, namely, product, price, promotion, and place to influence physician behavior (Kalaskar et al., 2012). The major theoretical gap in extant literature is the paucity or lack of research on the effect of pharmaceutical MMS on PHS (Orlowski & Wateska, 2007) because most academic research on pharmaceutical marketing primarily focuses on the prescription behavior of physicians (Dube & Ingole, 2010; Kalaskar et al., 2012) rather than on PHS. Nevertheless, available and overwhelming empirical evidence show that elements of MMS are strategic tools for acquiring and retaining potential customers and achieving CS (Aimin & Begum, 2012; Al Muala & Al Qurneh, 2012; Cengiz & Yayla, 2007; Irtaimen, 2012). Academics and managers should understand how MMS elements influence PHS and how to incorporate the influence of these elements into the creation and delivery of value to physicians (Vasiljev et al., 2010). Addressing these issues represents the primary focus of this research.

Interest on perceived value (PV) has been increasing among marketing academics and researchers (Alireza, Mosavi, & Ghaedi, 2011; Eggert & Ulaga, 2002; Faryabi et al., 2012; Milfelner et al., 2009; Spiteri et al., 2004; Walter, Thomas ,& Gemunden , 2001). PV is a common and essential issue in the marketing field and is an important element in relationship marketing (Hague et al., 2013; MSI, 2001; Oh, 2003). Practitioners and marketing managers' focus on customer perceived value (CPV) as a key element to explain CS (Chen & Chen, 2010; Wang, Lo, & Yang, 2004; Woodruff, 1997). Moreover, to achieve competitive advantages over rivals firms and satisfy customers, CPV is considered a crucial predictor of overall CS (Haque et al., 2013; Uddin et al., 2012). However, extensive studies that integrate the role of PV with CS for goods have not been conducted in marketing (Tsiotsou, 2005). In extant pharmaceutical

research on PV, the issue is rarely discussed and just a few empirical analyses of the relationship between PV and CS are implemented (Spiteri et al., 2004). Therefore, understanding the role of PV on PHS in the pharmaceutical industry is vital.

PV varies for different relationship contexts, environmental situations, and countries (Menon, Homburg, & Beutin, 2005). The literature review reveals that PV research is undertaken mostly on services, while less so on goods, particularly on goods related to pharmaceutical .Furthermore, most research are implemented in developed countries, especially in Europe and USA (e.g., Milfelner et al., 2009; Spiteri et al., 2004), while much less research is done in developing country such Yemen (AlTahami, 2010; Murshid, AB.Halim, & Osman, 2014). Hence, CPV should be investigated in a different business area (pharmaceutical business), a different customer (physicians), a different characteristic, and a different country (Yemen). Focusing on the pharmaceutical industry enables researchers to obtain an in-depth understanding of this critical issue, with an emphasis on the value potential of the product. The current research is part of the effort to discover customer (physician) value perceptions for drug products and to understand the role of PV on PHS in the pharmaceutical industry.

Previous marketing studies have sought to detect the prominent antecedents of satisfaction, namely, MMS and PV, which have been shown to be strong predictors of CS (Cengiz et al., 2007; Faryabi et al., 2012). These variables are the key source of success in business and competitive advantage (Cengiz et al., 2007; Wang et al., 2004). Furthermore, previous literature provides solid evidence on the importance of MMS and PV in building PHS in the pharmaceutical industry. However, studies regarding MMS, PV, and CS issues in the pharmaceutical industry are very limited (Murshid et al., 2014;

Orlowski et al., 2007; Spiteri et al., 2004). Cengiz and Yayla (2007) and Li & Green (2011) mentioned the need to study the relationships between these constructs in different industries.

In the fact that, in Yemen as well as in some other developing countries there has been: very few representative researches dealing with the concept of the PV of products; even less research that deals with this issue in the pharmaceutical industry and; no research dealing with the antecedents and consequences of PV, this study is to contribute to a better understanding of the relationship among these concepts. As such, the most important aim of this study is to examine the role of PV as a mediating variable between MMS of LMD and PHS on a sample of physicians in Yemen.

1.2.1 Overview of the Pharmaceutical Industry in Yemen

This study investigates the PHS issue in the pharmaceutical industry in Yemen. A brief history of the healthcare system and pharmaceutical industry will be introduced to outline and frame the marketing issues in the drug market.

1.2.1.1 Healthcare System

Prescription drugs dominate the Yemen market with physicians and hospitals, the primary access point to Health care. According to Ministry of Public Health & Population (2012) the healthcare system in Yemen is a network of local clinics, polyclinics and hospitals that provide primary and specialized healthcare to the people. In general, the healthcare system can be classified under 4 major groups are (1) Public

Hospitals: Yemen is divided into 21 health province. Each province has a general hospital that provides an outpatient service and a 24 hour emergency service (2) Polyclinics and Local Clinics: These clinics deal with preliminary examinations and routine matters. (2) Private Medical Care: There are many private clinics and hospitals in Yemen which represent the majority sector in Yemen. The Ministry of Public Health & Population monitors them, ensures a high standard and regulates the fees charged. Most private hospitals have their own pharmacies. (4) Semi – governmental hospital: these are hospitals that serve certain segment of the community like the armed forced hospitals.

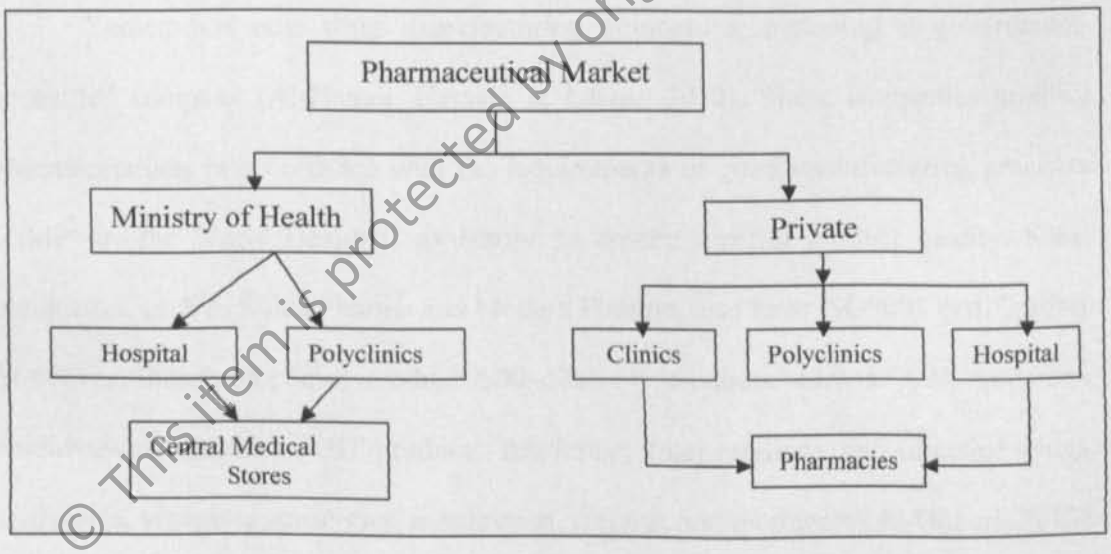

Figure 1.1: The healthcare structure in the Yemen; Source: Authors' computation

1.2.1.2 Pharmaceutical Industry

The pharmaceutical industry sector in Yemen is an emerging industry. The oldest company in Yemen that is involved in manufacturing is Yemen Drug Company (YEDCO), which was created in 1964 and started working in drug manufacturing in

1982 (Al-Ghbari, 2013). At the end of the 1990s, the private sector began to invest in the pharmaceutical industry. The private sector has a total of eight drug-producing factories, with a ninth factory under construction. Companies that constitute the private pharmaceutical sector are Global Pharmaco, Yemen Egyptian Pharma, Shaphaco, Shiba Pharma, Biopharm, Modern Pharma, and Pharmacare International. Most of these companies have been established in the province of Sana'a, the capital of Yemen. This province is characterized by low temperature and humidity in most periods of the year. This condition is favorable for these companies because they can reduce the costs required in controlling weather conditions (Al-Ghbari, 2013).

Yemen has nine drug manufacturing companies, including a government-controlled company (Al-Hamdi, Hassali, & Izham, 2012). These companies produce pharmaceuticals in accordance with the requirements of good manufacturing practices (GMP) by the World Health Organization to ensure superior product quality. Some companies, such as Shiba Pharma and Modern Pharma, also have ISO9001 certification. Moreover, these companies produce 500 different products, such as CNS products, cardiovascular products, GIT products, respiratory tract products, anti-infection drugs, analgesics, vitamins, antiseptics, mouthwash, creams, and ointments (Al-Ghbari, 2013). The local drug manufacturing companies are summarized in Table 1.1.

Table 1.1: Local drug manufacturing companies in the Republic of Yemen

NO	Companies	Years estab.	Number of Medicinal Products	Location
1	Global Pharmaco	2004	100	Sana'a
2	Yemen Egyptian Pharma Company (YEPC)	2000	76	Sana'a
3	Shaphaco Pharmaceutical Industries	1993	60	Sana'a
4	Shiba Pharma	1993	134	Sana'a
5	Yemen Drug Company for Industry and Commerce(YEDCO)	1982	60	Sana'a
6	Biopharm Pharmaceutical Industry	2000	42	Sana'a
7	Modern Pharma Company	1999	70	Sana'a
8	Pharmacare International Mfg. Copmany	1998	48	Sana'a
9	Rfa Pharmaceutical Industries	2010	-	Hadramout
Total		-	**590**	-

Source: Various websites of the companies.

According to the industrial survey report (2011) the national pharmaceutical sector contributes approximately 10.7% of Gross Domestic Product (GDP) to the national economy. From the perspective of standards industrial survey conducted in 2011, pharmaceutical industries belong to large industrial plants and within the chemical industry branch. The number of workers in this industry is 1084. In this context, the local pharmaceutical industry provides approximately 5000 jobs, or 3.4% of total employment in large enterprises (Al-Ghbari, 2013). The national pharmaceutical industries also contribute approximately 6 % of the value added to the manufacturing sector if we consider the structural affiliation of the industry to chemical products and plastics (The final report the result of the industrial survey, 2011).

The Arab Union of Pharmaceutical Manufacturers (AUPM) (2011) showed that Yemen ranks 11 out of 14 Arabic countries that manufacture drugs. Yemen produces the equivalent of USD 94 million in domestic pharmaceutical consumption (AUPM, 2011). The local pharmaceutical industry of Yemen covers the equivalent of 9.24% of domestic pharmaceutical consumption with more than 500 local drug classes (Supreme Board of Drug and Medical Appliances (SBDMA) Annual, 2012). More than one company produces pharmaceuticals per class, with the greater part of the demand imported from abroad, thus indicating that approximately 90% of market demand is covered by imported medicine from 69 countries and more than 490 companies (Al-Hamdi et al., 2012; Table.1.2). According to the last report of SBDMA (2012), the value of drugs imported to the Yemen market annually amounts to USD 333,944 million. The gap between locally produced drugs and imported drugs from abroad is clear. This gap causes many of the challenges faced by the national economy and national pharmacological industry. Table 1.2 shows a comparison in the last five years between domestic and imported medicines in the Yemeni market.

Table 1.2: Comparison in the last five years between domestic and imported medicines

Year	Domestic($)	Imported ($)	Total($)	Domestic Total (%)	Imported Total (%)
2012	34,005,930	333,944,579	367,950,509	9.24%	90.76%
2011	27,032,192	236,290,449	263,322,641	10.27%	89.73%
2010	32,214,433	265,294,859	297,509,292	10.83%	89.17%
2009	27,098,559	249,380,892	276,479,451	9.80%	90.20%
2008	24,119,205	232,479,150	256,598,356	9.40%	90.60%

Source: Data collected from the file of Supreme Board of Drug and Medical Appliances Statistics (SBDMA), 2012.