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EFFECT OF PROMOTIONAL TOOLS FOR PHARMACEUTICAL PRODUCTS ON THE PRESCRIBING PATTERN OF PHYSICIANS IN THE CASE OF ADDIS ABABA

BY

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CANDIDATE’S DECLARATION

I do hereby declare to the senate of Addis Ababa University that the work which is being presented in this thesis entitled “*Effect of Promotional Tools for Pharmaceutical Products on the Prescribing Pattern of Physicians in the Case Of Addis Ababa*” is original work of my own, has not been presented for a degree of any other university and that all sources of material used for the thesis have been duly acknowledged.

Haimanot Girma
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Date

This is to certify that the above declaration made by the candidate is correct to the best of my knowledge.

Tewodros Wuhib (PhD)
(Thesis Advisor)

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LIST OF ACRONYMS

CME Contentious Medical Education

DTCA Direct to Customer Advertisement

EPHARM Ethiopian Pharmaceutical Manufacturing Factory

FMHACA Food, Medicine, Healthcare Administration and Control Authority

IMC Integrated Marketing Communications

KOL Key Opinion Leader

MCs Marketing Communications

MRs Medical Representatives

PDMA Prescription Drug Marketing Act

PPB Physician Prescription Behavior

PSRs Pharmaceutical Sales Representatives

WHO World Health Organization

ABSTRACT

The primary objective of the study was to use descriptive analysis and a multivariate regression model to determine the impact of promotional materials for pharmaceutical goods on the prescribing decisions of doctors in Addis Ababa. A sample of 212 respondents was generated for this study's target population of 455 people, stratified according to the public health institutions contacted; however, only 175 people answered. Self-administered questionnaires were dropped off and picked up as soon as respondents had finished filling them out. Tables and figures were then used to present the data that had been gathered. The data were examined using the statistical package for social sciences (SPSS) program. The findings showed that factors such as sales promotion, direct marketing, medical representative performance, branding, and digital marketing have a positive and significant impact on prescription choices. According to the study's findings, a potent promotional mix, including sales promotion, direct marketing, public relations, personal selling, and digital marketing, influences prescribing decisions. Thus, the study advises: leading, merging promotional mix and people, making decisions that will lead to success, cultivating relationships among physicians, and spreading positive personal behaviors and unambiguous communication guidelines by putting into practice the identified appropriate techniques for action.

Keywords: Sales Promotion, Direct Advertisement, Personal selling, Public relations, Digital Marketing, Prescribing Decision.

CHAPTER ONE

INTRODUCTION

1.1 Chapter Overview

The background of the study, the problem statement, the objectives of the investigation, the research questions, the significance of the study, as well as its scope, working definitions, terminology, and organizational structure are all summarized in the first chapter of this research study.

1.2 Background of the Study

Pharmaceutical businesses devote enormous and widely ranging sums of cash to advertising their products, and the pharmaceutical sector is very huge, so it is a complete experience. The word "promotion" refers to educational and marketing initiatives that may lead to the recommendation, administration, or management of medical items. The medical representatives of the pharmaceutical company will prepare the various components of sales advertising, such as journal and direct mail advertising, participation in convention exhibitions, the use of audio-visual materials, the provision of drug samples and other items, and hospitality for seminars and medical professionals (Betselot, 2021). .

Pharmaceutical marketing initiatives aimed at physicians have gotten more and more attention over the years. There has been an increased focus on the interaction between healthcare practitioners and the pharmaceutical sector in recent years. Pharmaceutical businesses applied and adapted a variety of strategies to promote the acceptability of their drugs, including physician-targeted marketing such as free samples, sponsorships, journal advertisements, printed product material, and other gifts (Hashim, 2018). The World Health Organization (WHO) (2022) defines pharmaceutical promotion as all-encompassing information and convincing actions by manufacturers and distributors, the effect of which is to induce the prescription, supply, purchase, and/or use of medicinal drugs. Drug promotion has an important role in stimulating prescriptions and sales of pharmaceuticals (Micheline, 2019). It has also had a significant impact on the rational use of pharmaceuticals, drug price-control mechanisms, the manufacture, availability, and use of

essential drugs, the equity of drug distribution, and the cost of the health care system. Thus, it becomes a serious public health concern (Bersaheb, 20183).

Physician-focused pharmaceutical marketing campaigns have drawn increasing attention over time. The relationship between medical professionals and the pharmaceutical industry has received more attention in recent years. Pharmaceutical companies used a range of tactics, including physician-targeted marketing techniques such free samples, sponsorships, journal adverts, printed product literature, and other gifts, that they later modified (Hashim, 2018). Pharmaceutical promotion is defined by the World Health Organization (WHO) (2022) as comprehensive information and persuading measures by makers and distributors with the goal of encouraging the prescription, supply, purchase, and/or use of medicinal pharmaceuticals. In order to increase prescriptions and sales of medications, drug advertising is crucial (Micheline, 2019). Additionally, it has had a large effect on the equitable distribution of drugs, the expense of the healthcare system, the manufacture, availability, and use of vital medications, as well as drug price control measures. As a result, it emerges as a significant public health issue (Bersaheb, 2018).

The pharmaceutical industry is a global enterprise. Pharmaceutical markets, on the other hand, are national in nature; their organization varies from country to country. Most pharmaceutical companies view physicians as the ultimate decision-makers; they promote their products to them in order to boost sales. According to Pauline et al. (2004), sales representatives are the most common and only source of drug information in developing countries, with one representative assigned for every five doctors. The amount of money spent on pharmaceutical product promotion is enormous. In 2022, nearly US\$ 121 billion will be spent on promotion in the United States alone (WHO, 2022). Due to family planning and HIV/AIDS, pharmaceutical product marketing is regarded as a crucial component of creating brand recognition and promotion in Africa.

Ethiopia appears to have diverse marketing dynamics from many other African nations. Advertising that features the distinct cultures of Ethiopians is appealing to them. The promoted brand may suffer from the usage of unsuitable marketing materials. Poor labor skills and the delayed uptake of new technology are further market obstacles. Despite the steps taken by the Ethiopian government to advance skill development, the pharmaceutical industry has a shortage of specialist talent (Food, Medicine, Healthcare Administration, and Control Authority, 2022).

Additionally, Bersaheb (2018) noted that their capacity to uphold fundamental manufacturing standards does constrain their ability to oversee government contracts due to a lack of specialized knowledge and technology. Despite the fact that these difficulties continue to exist and are proven to prevent the growth of many pharmaceutical companies, the impact of these challenges, particularly their promotional effectiveness, on the market is falling.

This suggests that Ethiopia has a great potential for several chances for major, established global pharmaceutical businesses, with prominent positions in both the governmental and private sectors. It makes one believe that country-specific marketing materials are necessary for efficient product marketing. To the best of the researcher's knowledge, however, very few published studies have primarily focused on licensed private hospitals and have addressed the topic situation in developed countries; very few have addressed it in developing countries, such as Ethiopia. The study's goal is to examine efficient medical advertising strategies and how they affect Ethiopian doctors' prescription habits.

1.3 Statement of the Problem

Worldwide, the pharmaceutical industry's marketing is a significant and high-value business, with its operations directly affecting both the general and individual well-being of patients (Manchanda et al., 2005). One of the most populous nations in Africa, Ethiopia has a high need for pharmaceutical products (Bersaheb, 2018). Only 10 to 20% of the domestic market is supplied by the pharmaceutical sector, with the remainder coming from imports (FMOH, 2022).

Promotion is a critical aspect of increasing sales. When generating sales takes precedence above general public health, promotion can lead to over-prescription as well as poor quality prescribing and medicine use. Because of the competitive nature of the market, pharmaceutical companies develop pharmaceutical marketing strategies to persuade physicians to beat the competition and earn reasonable profits rather than focusing on public health needs. It is critical to investigate what causes a product to be prescribed and to align marketing with the country's health needs. in accordance with the country's health needs. According to Barbara (2010), there is a lack of research of high methodological quality, and there are significant gaps in the evidence base even on the conducted research for further investigation of pharmaceutical promotion, especially in developing countries.

Research clearly demonstrates that doctors who report depending more on promotion tend to prescribe less correctly, prescribe more frequently, and accept new medications more fast, according to Pauline et al. (2004). Samples seem to have an impact on prescriptions. Studies that examine how promotions affect total sales typically find that sales increase after promotional activity. The demand for these businesses' medications to be added to hospital formularies rises as a result of pharmaceutical support for doctors, such as research money. The content of continuing medical education may be impacted by sponsorship. Academic research now receives a considerably larger portion of its funding from the pharmaceutical business. Industry sponsorship frequently entails conflicts of interest, confidentiality, control over topic selection, and publishing delays. Research supported by pharmaceutical companies is more likely to result in positive findings for the product being studied than research from other sources.extra sources.

It is also important to evaluate how drugs are being promoted, the genuineness of the information, and to what extent it should be. U.S. court cases and legislative hearings have generated significant outside business concern over "non-traditional" advertising tactics(Evans (2009). In the United States, several businesses paid a combined amount of \$ 17 billion in fines and penalties for unlawful promotion. The advertising of the epileptic medication gabapentin (Neurontin) for unapproved purposes was also mentioned (WHO, 2022). The drug was advertised through a variety of covert promotional strategies, such as funding for patient organizations and professional societies, clinical guidelines development, ghostwriting journal articles, sponsored continuing medical education, and public relations campaigns.

There is an urgent need for additional research on the effects of promotion in developing nations like Ethiopia. More research is required on the public health effects of drug promotion on issues like overprescribing, drug resistance, etc., according to Barbara (2010). In developing and transitional economies, where the prescription-only status of medicines is frequently poorly enforced on pharmacists as a gift in order to achieve specific sales volumes, Barbara claims that. It is important to assess how pharmaceutical product promotion materials affect doctors' prescription behavior.

1.4 Research Questions

- What is the level of promotional tools performance in pharmaceutical products in Addis Ababa?
- What is the prescribing decision pattern of physicians in Addis Ababa?
- What is the effect of promotional tools for pharmaceutical products in terms of sales promotion, direct advertising, public relations, personal selling and digital; marketing on the prescribing decision pattern of physicians in Addis Ababa?

1.5 Objectives of the Study

1.5.1 Main Objective of the Study

1. To determine how well pharmaceutical product promotion materials affect doctors' prescription decisions in Addis Abeba

1.5.2 Specific Objectives of the Study

1. To identify the level of promotional tools performance in pharmaceutical products in Addis Ababa
2. To identify the prescribing decision pattern of physicians in Addis Ababa
3. To examine the effect of promotional tools for pharmaceutical products in terms of sales promotion, direct advertising, public relations, Personal Selling and digital marketing on the prescribing decision pattern of physicians in Addis Ababa

1.6 Significance of the Study

This research and its associated findings are highly valued because the findings will contribute to society, health professionals, pharmaceutical companies, and the fields of marketing and pharmacy. It's very clear that problems related to pharmaceutical promotion have a broader scope in that they affect the individual, the physician, the medical representative, the pharmaceutical company, and society in general.

As per the finding of this research, pharmaceutical promotion will have an impact on the prescribing intention of a physician, then physicians and even the government need to overlook

the types of promotions that are being exercised in the country in a way that is not misleading. For companies, it will help them to identify that they are on the right track to increase sales but to also be cautious not to get involved in any mischievous acts that might cause them to lose credentials and lead them to penalties. The research will also contribute to the fields of pharmacy and marketing in that it provides empirical evidence that confirms that pharmaceutical promotion can be applied and bring about an increase in sales for pharmaceutical companies, and it will help them identify which tools or strategies seem to work more than the others. Other researchers working on related topics can also use it as a reference in studies in Ethiopia.

As the finding of this research shows that pharmaceutical promotion will not have a significant impact on the prescribing intention of a physician, it will help companies change their strategy and spend their money wisely on innovation, research, development, etc., and apply it to raise their sales volume. Thus, it will save much time and effort for medical representatives, pharmaceutical companies, and even researchers working on the related case. This research will solve challenges related to the lack of sufficient amounts of research, especially those with empirical evidence done in Ethiopia. The findings of the research could be beneficial not only for healthcare professionals but also contribute to the whole field of pharmacy and marketing.

1.7 Scope of the Study

The scope of the study can be discussed in terms of conceptual scope, geographical scope, and methodological aspects.

In this study, the researcher specifically focused on five pharmaceutical promotional tools that combine elements of effectiveness in terms of sales promotion, direct advertising, Public relations, Personal Selling and digital marketing. Identification of the target market for the promotion, selection of the most efficient advertising, sales support, and public relations program, and overall marketing strategy alignment are all objectives of pharmaceutical promotion. Geographically, this study was only be covered to Addis Ababa, where the majority of pharmaceutical businesses and governmental offices responsible for promoting pharmaceutical supplies are located.

In order to meet the research objectives, this study helped examine the casual relations among the variables. It examined the effect of direct marketing, personal selling, on the prescribing intention

of a physician by using regression and correlations. Analysis and pharmaceutical data was gathered through a structured questionnaire (quantitative data) and an interview (qualitative data).

1.8 Organization of the Study

The study's introduction, which includes the study's background, its problem statement, its research question, its objective, its significance, its scope, its restrictions, and its organizational structure. The second chapter provides a review of related literature (both theoretical and empirical) on the effects of personal selling, direct marketing, public relations, and sales promotion on a doctor's inclination to prescribe. Research methodology, comprising research approach and design, data sources and data collection tools, population, sample size, and sampling procedures, reliability and validity of data collection devices, methods of data analysis, and ethical issues, are the main topics of the third chapter. Data presentation, analysis, and interpretation are covered in the fourth chapter. A summary, conclusion, and recommendation based on the study's findings are presented in the fifth chapter.

1.9 Definition of Key Terms

- **Marketing Mix** is the combination of tactical marketing tactics used by the company to elicit the desired response in the target market (Betselot, 2021).
- **Pharmaceutical Marketing** is the business of advertising or otherwise promoting the sale of pharmaceuticals or drugs (Micheline, 2019).
- **Physician Prescribing Behavior** is defined as a process that individuals and firms, in this specific case, physicians, go through when accepting new products (Micheline, 2019).

CHAPTER TWO

REVIEW OF RELATED LITERATURES

2.1 Introduction

This chapter embraces of various related literatures review. Actually, it supports the research objectives and the research problem, where study sources such as journals, books prior research findings are carefully reviewed. The chapter is poised of three important related literatures parts specifically: review of theoretical literature, empirical review and study's conceptual framework.

2.2 Theoretical Literature Review

This is where relevant theories, which are believed suitable in assisting the researcher carry out the research, are presented. The following theories are those that the researcher considers “necessary” in relation to the subject matter.

2.1.1 Definition of Concepts

Pharmaceutical promotion, according to the World Health Organization, is "all informational and persuasion by manufacturers and distributors, the effect of which is to induce the prescription, supply, purchase, and/or use of medicinal drugs." Additionally, it comprises all the pertinent actions, items, and media used by a pharmacy to alert and prompt potential clients about a specific product offering.

The objective of pharmaceutical campaign is to encourage the board beneficiary or customer to buy or put away pharmaceutical subscription. Numerous communication channels and consumer-focused activities are used in the pharmaceutical advertising component of the marketing mix (WHO, 2022). The pharmaceutical promotional mix, according to several essayists, includes the principles of sales promotion, public relations, personal selling, direct marketing, events and sponsorship marketing, as well as online or digital as well as interactive marketing, Samrawit (2017) added. Pharmaceutical sales promotion is generally regarded to be well-defined as a collection of marketing initiatives that aim to immediately elicit a response from the target market by offering valuable incentives to distributors and/or end users. Consequently, the leading purpose

is to obtain a specific response to the offer from the target audience and it is considered by the delivery of some form of incentive for a specific behavior.

As an alternative to this, Bersabeh (2018) defined marketing communication (MC) as "marketer-originated messages, positioned in various media, their purpose being to sell the brand by showing it, saying things about it, or both, in a manner that establishes the marketer's anticipated position for the brand in the attentions of target customers." This demonstrates how the marketer evaluates and advances the messages they send through a variety of channels of communication.

The importance of considering the relationship between digital communication and traditional communication in the old media can be understood by looking at mass communication, which is at the heart of marketing communications. In digital media, such as blogs, social networks, wikis, and all types of viral marketing campaigns, the communication model is one-to-several compared to one-to-one or many-to-many (Samrawit, 2017).

In addition to this, by responding to surveys and product rankings, "the customer is a board in assessment to the digital media communication where the customer is a partner." The one-to-many paradigm of mass communication, which is still used efficiently by many large corporations, must also be widely acknowledged. Both forms of communication have advantages and disadvantages of their own, and marketers use both as necessary. (Bersabeh, 2018).

2.1.1.1 Concept of Pharmaceutical Promotion and Tools

Pharmaceutical care, which is a requirement for patients and customers and declares safe and sensible drug consumption, is the primary goal of pharmaceutical marketing. This includes finding long-term treatments for illnesses and diseases in order to raise public awareness of health issues and the general people's health. Additionally, marketing strategies aim to boost wholesalers' and manufacturers' sales and profits.

Through marketing efforts focused on consumers, the pharmaceutical industry aims at expanding the market and influencing market share (Micheline, 2019). Other key goals of marketing are the exchange of information, and matching as thoroughly as possible the marketing mix of their companies to the needs of their costumers or patients. The information exchange purpose of pharmaceutical marketing requires the exchange of information, products, use right and payment

at every stage of the supply chain as well as upwards (towards the manufacturer or wholesaler) as downwards (in the direction of the customer).

Information sharing is a small aspect of pharmaceutical marketing's communication strategy. It essentially turns out to be possible for pharmaceutical drug manufacturers and wholesalers to communicate innovative and original developments in pharmaceuticals and drugs, and to stimulate pharmaceutical products to physicians and consumers or patients through marketing efforts (Samrawit, 2017).

2.1.1.2 What Techniques are used to Promote Medicines?

The primary market research data from two leading corporations were combined to provide an itemization of the proportion of resources allocated to various marketing methods Gagnon and Lexchin (2008). (35.5% are salespeople Free offerings 27.7% unsupervised promotion 25.0% Direct marketing to consumers 7.0% Sponsored events 3.5 percent Advertising in journals 0.9% 0.5%: mailings, post-market trials, and e-promotion. In this context, the majority of nations forbid prescription drug direct-to-consumer advertising (DTCA).

Even in countries like the United States and New Zealand, where this type of advertising is legal, the majority of spending is directed at medical professionals. Sales representatives who meet with doctors one-on-one to market pharmaceutical items or drugs—often along with unrestricted samples of the advocated medications—are the most common type of salesperson. Unreported promotions within the nest group may be worthy of comment.

This represents a variety of activities, such as advertising that is not detected in market research checks, unreported scientific journals, and current, covert pharmaceutical advertising campaigns. Additionally, prescription-only drug distribution is frequently mandated, with rewards to pharmacists tied to achieving certain sales targets, which are a big element of advertising in developing nations and transitional economies (Mintzes, 2010).

2.1.1.3 Decision Making Particularly Prescription Decision

It is well known that the usage of pharmaceuticals significantly contributes to improving and maintaining people's health for a variety of ailments, including treating acute sickness, reducing signs and symptoms, managing chronic disease, and preventing future diseases (Mintzes, 2010). The key choice is which medication is best for the particular disease, taking into account potential advantages and risks.

Information was essential for moving forward. Information about the therapeutic goals, the proper way to use the medication, how it works, the advantages and disadvantages, how this medication compares to other treatments currently available, and the relative cost-effectiveness are all necessary for making an informed choice about which medication to use (Samrawit, 2017).

Given the increasing sums of money firms are investing in this activity, it is becoming more and more crucial to comprehend the effects that drug promotion has on prescription and usage of medication. Nearly US\$21 billion was spent on marketing in the USA in 2002, of which more than US\$2.6 billion went into direct-to-consumer advertising (DCTA).

These sums are at least 30 times what national governments spend on drug information (for instance, in Italy, the pharmaceutical sector pays US\$4475 per doctor compared to the government's US\$180 per doctor). Over 3.4 million sales representatives visited doctors in Canada in 2000, leaving 21.5 million medicine samples behind, while over 300,000 events were organized by businesses for doctors in the USA.

In underdeveloped nations, where there may be as many as one sales representative for every five doctors, sales representatives are usually the only sources of knowledge regarding medications. In order to limit promotion, industry associations and professional associations have each created voluntary guidelines (Mintzes, 2010).

Deliberate self-regulatory regulations from the pharmaceutical industry may appear to be a reasonable way to regulate business promotions; without opposition from the government and industry, they may be a more adaptable and economical choice. Through a system of voluntary self-regulation overseen by a trade association, the desire of individual businesses to prevent rivals from acquiring an advantage may be channeled to serve the public interest in a highly competitive industry. The data, however, disproves this theory, as it does many others.

Increasing sales and profits is the primary goal of trade organisations like Pharmaceutical Research and Manufacturers of America (PhRMA). From a business standpoint, self-regulation primarily focuses on preventing anti-competitive behavior. In order to give businesses a lot of leeway, industrial groups purposefully leave their standards of behavior ambiguous or exclude specific aspects of promotion. Many deceptive advertising strategies are profitable for companies.

As a result, voluntary codes are frequently reactive, opaque, ignore significant areas of concern, and lack strong sanctions. Stronger provisions may be found in codes from medical societies, although they lack legal authority and rely instead on moral persuasion. Only a tiny portion of activities can be monitored in the few nations where government regulation of promotion is direct. This is due to resource constraints.

If marketing results in better prescribing, then there would be no issue about additional normal and rational pharmaceutical use or increased cost effectiveness. Although the research is not yet definitive, it does strongly suggest a link between reliance on advertising and less suitable total prescription drug use. Before the safety profile of these goods is completely recognized, significant advertising for new medications results in widespread prescribing and use. Without any indication that therapeutic outcomes have improved, newer, more expensive medications replace older, less expensive ones (Pauline et al. 2004).

2.1.2 Models and Theories

In different times different models and theories have been proposed by researchers. Each of them reflected on the impact of pharmaceutical promotion on the prescribing behavior of physicians. These theories and models were proposed and conducted for different reasons depending on the interest of the researcher. Below are some of the

2.1.2.1 Stros and Lee's model

Stros et al. (20001) undertook an evaluation of marketing measurements in the prescription business to establish a conceptual pharmaceutical marketing model, as per Bersabeh (2018), who cited them. The most significant factors influencing physician prescription are promotion policy, price policy, and product design policy, in that order.

This model's objective was to analyze the literature on pharmaceutical marketing and construct a conceptual model. This model suggests that the marketing mix approach, which includes product, price, place, and promotion in a precise order, can influence the doctor to prescribe.

The promotion policy—which includes MRs, advertising, drug samples, and information—is the most important, followed by the pricing policy, which addresses branding, product qualities (such as risks, side effects, safety, efficacy, and indications), drug delivery, and packaging. The least significant element in the pharmaceutical setting is the distribution policy. On the other hand, further research is required to determine how the four "Ps" or "4Ps" marketing mix idea's linked variables affect doctors' prescribing behavior.

2.1.2.2 Raisch's Model

A real, more intricate model that incorporates a number of direct and indirect factors affecting prescribing choices was envisaged. It identified direct techniques and indirect methods for influencing prescribing, which serves to build a model of methods used to impact prescribing, as two comprehensive groupings of components that were recognized. The patient has identified a source of influence on the prescribing decision in this scenario.

Formularies, prescribing restrictions, and required consultations are examples of direct factors, whereas indirect factors include medical representatives' (MRs) visits, pharmaceutical companies' promotions, coworkers' recommendations, scientific data from randomized, controlled clinical trials, and medical education. In contrast to Gallan, who produced a general theoretical model based on the evaluation of relevant literature and practical investigation in an outpatient setting, Betselot (2021) cited a model. The model included three basic elements: precursors, the procedure by which a physician interprets the patient's perception of the need for a drug therapy into the prescription decision, and results. The antecedents include pharmaceutical companies' marketing initiatives, governmental and economic issues, and other elements that influence doctors' decisions over which medications to prescribe.

The physician and practice personal and individual factors such as case mix and organizational structure were also included. In this regard, factors such as individual and practice are thought to affect prescribing decisions by influencing the thought process of the physician. The patient factors

that influence the physician prescribing decision such as patient's presenting symptoms and doctor's diagnosis were considered in addition to psychosocial factors.

2.1.2.3 Singh's Model

Singh (2001), who created a conceptual model of the dyadic relationship between medical records and physician prescription, was cited by Bersabeh (2018). In order to forecast physician prescribing behavior, the model took into account three dimensions, including network connectivity features, the potential for resource transfer (RT), activity integration, and circulated actor relationships. Product knowledge acquired by detailed or MR activities, for example, is an RT that is linked to high prescription behavior.

When MRs and doctors interact well, there is a better correlation between product knowledge and prescribing practices. Similar to this, a high prescription rate among doctors is linked to a higher density of promotional activities, such as continuing medical education provided to doctors by MRs and the introduction of new pharmaceuticals.

2.1.3 Relationship between Promotion and Prescribing Decisions

The ideal study would compare actual prescription before and after exposure to promotion that was documented, while controlling for any other prescribing variables. Real-world simulations of this circumstance are extremely challenging. Instead, researchers frequently rely on self-reported prescribing and self-assessed exposure to or dependence on promotion. Additionally, they have struggled to track changes over time, resorting to making educated guesses based on data from other practitioners. This has significant restrictions.

The subject of how promotion impacts individual prescribing is examined in this section using a variety of philosophies. The first strategy makes use of self-reported justifications for changes in prescribing and looks at whether promotion is one of them. The prescribing modifications may be self-reported or measured (i.e., independently validated). Ideally, specific adjustments are made to how certain medications are prescribed. This method naturally involves self-evaluation of exposure to and relative influence of promotion. As a result, it is challenging to accomplish more with this strategy than to provide practitioners the chance to share with researchers how they perceive themselves in terms of whether or not they are influenced by promotion.

2.1.3.1 Sales Promotion

Sales promotion is to provide customers with added value as an incentive to produce a quick sale. It consists of many tactical marketing strategies, most of which use short-term incentives and are intended to enhance the value of the product or service in order to meet certain sales or marketing goals. The recipients of this stimulation could be customers, distributor's agents, or salespeople. It can play a sizeable role in the communication mix or the promotional mix and is frequently crucial from a strategic standpoint for the third and fourth-place companies in the fast-moving consumer goods industry (Micheline, 2019). Studies that explore for connections between variations in prescribing decisions and variations in dependence on promotion provide stronger evidence for some sort of association between promotion and individual prescribing decisions. In these investigations, generic inquiries about promotional information's validity or value as well as its significance for prescription choices are made of physicians. The prescribing of individuals who have higher ratings of promotion is then contrasted with that of those who have lower ratings. Data on prescribing is either self-assessed, produced in reaction to fictitious events, or based on actual prescribing.

These findings show unequivocally that physicians who place a greater emphasis on promotion tend to make heavier or less reasonable prescriptions or adopt new medications earlier than those who do not (Pauline et al. 2004) 99–108. As it relates to direct-to-consumer advertising, there is conflict between regulators and consumers because consumers gain from DTCA but regulators perceive it as unethical. According to many researchers, pharmaceutical companies educate patients about their goods using DTCA, hence enhancing the patients' autonomy by letting them make their own decisions (Marmat, Jain, & Mishra, 2020).

H₁ – Hypothesis 1= Sales promotion has a positive and significant effect on the prescribing decision pattern of physicians in Addis Ababa

2.1.3.2 Direct Advertising

Advertising should serve as a link between the product and suppliers' resources in respect to market realities and should be able to responsibly convey information to consumers. According to Dana et al. (2022), it facilitates the audience's understanding of the product's quality, which leads to the

creation of the product or favourable behaviour toward the service or idea. Advertising aids in transforming ignorance into knowledge and enlightenment. Advertising is a common tool used by businesses to shape attitudes or fix flawed identities. The main advantage and function of advertising is that it disseminates the sales message to a huge audience, potentially including people the advertiser does not know or cannot meet, and who may be dispersed throughout a town, a state, a nation, or even the entire world.

It therefore has the advantage of connecting expenditure to sales, but it discourages creative advertising expenditure approaches and does not provide differentiation between items or sales areas. It is a relatively clumsy method of allocating such expenses. A different strategy for determining advertising spending is to compare it to what the competition is spending, such as on media, etc. Making decisions about what to say and how to say it to potential clients is perhaps the most important part of any advertising effort. Advertising goals that are used in the media to spread its message act as guidelines for the creation and execution of the overall advertising campaign. It saves the consumer time while making a new product purchase (Hashim, 2018).

Pharmaceutical marketing, according to Fazle, Muhammad, and Ilyas (2020), concentrates more on the positive aspects of medications than their negative ones. They said that they clarified modern protocols and updated doctors about the newest scientific advancements in medicine. This responsibility is not handled properly. Because of this, they enhanced patients' pain by using antibiotics carelessly. This is biased and partial, and it goes against the fundamentals of marketing. For their own vested interests in product sales, the industry spreads disease and expands the parameters of remedies.

H₂ – Hypothesis 2= Direct Advertising has a positive and significant effect on the prescribing decision pattern of physicians in Addis Ababa

2.1.3.3 Public Relations

Public relations, according to Vishavadia, Sandip, and Krishna (2020), are the deliberate, planned, and ongoing efforts to build and maintain reciprocal consideration between a company and its audiences. It is an effort to manipulate public opinion in favor of a certain activity, cause, movement, or institution. The managerial role that evaluates public perceptions, acknowledges

organizational policies and practices that serve the public interest, and implements a plan of action (including communication) to gain the support and understanding of the general public. The opportunity to learn about new molecules, drug applications, or indications from peers is provided via continuing medical education.

With the expansion of international trade, corporate branding is turning into a significant barrier that multinational corporations must overcome. For instance, the rise in international corporate mergers and other global alliances, as well as corporations' desire to retain their names, have led to clunky and convoluted names.

This situation makes it harder for customers to remember the names of the companies. Additionally, this dilutes brand equity and causes misunderstanding regarding the identities of the companies (Fazle et al., 2020). However, co-branding and mergers can increase sales and strengthen brand equity by transferring the favourable associations of the partner companies to a newly formed co-brand. This is especially true if the merging parties are both well-known corporations with established brands. This belief is supported by the evidence showing that co-branding between two high-equity businesses is advantageous for both parties whereas co-branding between high-equity and low-equity brands may be risky for the high equity partner (Vishavadia et al., 2020).

By setting up CMEs for a specific brand that results in a prescription, pharmaceutical corporations can capture doctors' attention. An innovative CME concept created by the pharmaceutical industry is the webcast, in which a national or worldwide Key Opinion Leader (KOL) addresses the audience via digital media. Hashim (2018) said that there are other factors that affect how doctors prescribe drugs. Certainly, managing public relations is a management task. The term "management" should be used in its broadest sense; it encompasses a variety of organizations, including nonprofits, and is not just used to refer to business managements.

H₃ – Hypothesis 3 = Public relations have a positive and significant effect of on the prescribing decision pattern of physicians in Addis Ababa

2.1.3.4 Personal Selling

These include patient expectations regarding medicine costs, knowledge of drug costs and information sources, the degree of advanced medical education, social and logistical considerations, such as the time constraints on doctors, and drug awareness, including pricing. Additionally, according to another study, the majority of the doctor's alleged drug costs should be taken into account when deciding on a patient's course of treatment. In three other research, the cost of a drug to a patient was identified as having the greatest impact on prescribing; similarly, in other studies, price awareness strongly influences prescribing behavior (Vishavadia et al., 2020).

One of the promotional strategies that enables marketers to interact directly with clients and sell them their products is personal selling. This portion of the promotional mix includes a message or reaction regarding the product's quality. Personal selling is seen as a two-way communication strategy between a representative of a company and an individual or group with the goal of informing, motivating, or reminding people to act appropriately (Fazle et al., 2020).

Additionally, personal selling is an essential component of establishing lucrative long-term buyer-seller relationships based on trust and understanding as well as assuring customers' post-purchase happiness. It is stated that the fiercer competition in the rapidly evolving market for high-quality items has forced manufacturing firms to establish and maintain extensive ties with their clients. Furthermore, according to (Vishavadia et al., 2020), building long-term relationships with other people is crucial for manufacturing businesses to gain a competitive edge. According to Hashim (2018), once a buyer decides on one product, he is reluctant to move to another. Personal selling is therefore likely the most crucial component of communication in the manufacturing sector.

H₄ – Hypothesis 4 = Personal Selling has a positive and significant effect on the prescribing decision pattern of physicians in Addis Ababa

2.1.3.5 Digital Marketing

When an industry supports academic endeavors for its own gain, the integrity and legitimacy of that organization are called into question. It is commendable that both pharmaceutical corporations and doctors should be required to adhere to ethical norms through broad personal, organizational, and institutional processes.

According to Vishavadia et al. (2020), the Government of India attempts to control such unethical practices of pharmaceutical companies by enforcing "The Uniform Code of Pharmaceuticals Marketing Practices (UCPMP)", but there are ongoing concerns about how effectively this regulation is being put into practice. The majority of economic sectors are beginning to place increasing importance on digital technologies. The Internet was chosen because of its exceptional levels of interconnectedness and its potential to influence how business and society would develop in the future. Therefore, the Internet has inspired many businesses to reconsider how they use technology, and proof of its worldwide influence has already been gathered (Fazle et al., 2020).

Business adoption of technology is increasingly concentrated on a wide variety of digital platforms and devices (such as mobile phones, WiFi, and digital TV). Undoubtedly, the global system for mobile communications (GSM) has emerged as the communications technology with the greatest rate of growth ever (Micheline, 2019). The Internet and other digital technologies have given their users more than just the ability to locate, buy, and sell goods; they have also helped to create communities where like-minded people can interact, network, and have fun.

Global society has been significantly impacted by the rise of social networking sites like Facebook, LinkedIn, Google+, and microblogging services like Twitter (Vishavadia et al., 2020). Therefore, the use of digital technologies has significant effects on the planning and execution of marketing campaigns. A significant medium for communication, the Internet offers a setting for numerous types of communication. Numerous people spend several hours per day online. To supply top-notch generic drugs to patients, manufacturers must adhere to strict quality control criteria. Pharmaceutical firms strive to influence doctors' prescribing behaviors by finding ways to avoid UCPMP; under this situation, doctors must promote moral medical practices for the benefit of their patients.

H₅– Hypothesis 5 = Digital Marketing has a positive and significant effect on the prescribing decision pattern of physicians in Addis Ababa

2.3 Empirical Literature Review

2.3.1 Studies across the Globe

Abdallah, Dana, and Muhammad. Using a quantitative survey in Jordan, Hamzeh and Mosaab (2022) investigated the perceived impact of the four pharmaceutical marketing mix methods (product, price, site, and promotion) on doctors' prescribing patterns there. Practitioners of medicine from Jordan's public and private sectors made up the study's population. It used binary regression analysis and was open to any doctor who had a Jordanian medical license and was actively involved in patient care.

With a median score of 141.0 out of 185, or 76.2%, participating physicians demonstrated moderate to high influence from marketing mix components. The promotional materials utilized by pharmaceutical businesses received the lowest median score, with a score of 48.5 (IQR: 40.0-56.0) out of 70, or 69.3%. It was determined that marketing mix techniques, particularly price strategy, had a significant impact on physicians.

The impact of pharmaceutical companies' strategies on physicians' prescription behaviour in the market with regard to physicians' demographic characteristics quantitatively in Lebanon was examined by Micheline (2019). This study also looked at whether accepting gifts and samples was regarded as an ethical practice by doctors. Through WhatsApp, it conducted a cross-sectional study. This study discovered a link between prescription behaviour by doctors and pharmaceutical marketing efforts.

They came to the commonly accepted conclusion that the studied promotional strategies frequently or occasionally encouraged doctors to recommend the treatments they were promoting. Visits from medical representatives and drug samples are the promotional tactics that doctors have determined to be normally motivated by, whilst sales calls conducted by pharmaceutical corporations are the less effective technique. This study showed that physicians view accepting gifts as an unethical practice in terms of accepting them.

The findings indicated that the majority of doctors provide their patients with free samples. The study came to the conclusion that it was an interesting piece of work, one of the first modest steps in the direction of integrating this study with the prior literature. From a managerial standpoint,

pharmaceutical marketing executives of pharmaceutical companies can use the research's findings to better plan their approaches aimed towards doctors, who can also profit from the findings in Lebanese.

The impact of various pharmaceutical promotional strategies on physicians' prescription behavior was studied (Vishavadia et al. in 2020). 100 self-administered structured questionnaires were employed, and participants were clinicians with a variety of specialties, including general practitioners, physicians, gynaecologists, paediatricians, and dentists.

As a result, it was discovered that a variety of promotional activities, such as the detailed of a medical representative, continuing medical education, medical camps, and customer relationship management, have an effect on doctors' prescription behavior, though at various rates. The importance of customer relationship management is paramount, followed by the detailing of medical representatives, medical camps, and continuing medical education, all of which have a substantial favorable impact on the doctor's prescription choice. Practical ramifications: The findings may aid pharmaceutical firms in creating a variety of product advertising techniques that maximize return on investment.

2.3.2 Studies across the Africa

May and Yusuf (2018) looked into how pharmaceutical companies' advertising tactics affected doctors' prescribing habits. It also evaluated how pharmaceutical companies' promotional strategies affected doctors' decisions to prescribe certain medications. Five types of promotional strategies were examined: sales promotions, advertising, public relations, direct marketing, and personal selling. It went over the promotional tool literature in more detail before utilizing a literature review to investigate which medical practitioners' demographic features affect how the various promotional tools and doctors' prescription behavior interact. Between 2008 and 2018, it was conducted throughout internet databases, and 41 reviewed articles were found.

The papers pointed out the impact of advertising materials on doctors' prescription choices. Numerous studies on the influence of promotional tools on doctor-prescribed medication decisions have been uncovered, according to the study. They confirmed that marketing strategies have a significant impact on doctors' prescribing decisions, but several other studies revealed little to no

correlation. To clear up this ambiguity, it is crucial to comprehend precisely how promotional materials influence doctors' prescribing choices in various situations.

2.3.3 Ethiopian based Studies

In Ethiopia, advertising for pharmaceutical items is not permitted in the public sphere, with the exception of MCH and FP products (contraceptives and condoms). The current study aimed to examine how doctors and pharmacy professionals were exposed to drug promotion initiatives, as well as how they felt about accepting gifts from PSRs. It also checks to see if medical doctors and pharmacy professionals received any instruction or training regarding how to deal with medical representatives and pharmaceutical advertising during their studies.

Only a few comparable studies, all of which were undertaken outside of the Amhara region, have been done in Ethiopia, to the author's knowledge. The current study provided more evidence to address this gap in the literature and served as a starting point for further research in the field (Dawit et al., 2021).

Using a quantitative study approach, Betselot (2021) investigated how the advertising mix affected physician prescription behavior as it was mediated by brand image in the context of private general hospitals in Addis Abeba. Convenience sampling was used to choose a sample of 150 doctors. 133 valid and useful responses were gathered, and they were included in the study. Self-administered questionnaires from the targeted respondents were used to collect primary data, which was then analyzed using SPSS version 20.0.

The demographic characteristics of the respondents, the advertising mix, brand image, and physician prescription behavior variables were all examined using both descriptive and inferential statistics.

All components of the promotional mix, with the exception of advertising, had a favorable and significant impact on doctors' prescribing behavior, according to the data. Public relations, out of all of them, appeared to have the most beneficial and significant impact on doctors' prescribing behavior. In addition to public relations, sales promotion and personal selling had greater effects. The least successful promotional tactic in the mix was discovered to be direct marketing. Additionally, the link between the advertising mix and doctor prescription behavior demonstrated

that brand image had a mediation influence. Conclusion: Physician prescription behavior can be accurately predicted by pharmaceutical advertisements and a drug's brand image.

Hashim (2018) investigated the variables influencing resident doctors' drug prescribing practices. 199 resident doctors at Addis Ababa Black Lion Specialized Hospital were given a validated questionnaire by way of descriptive statistics, correlation, and multiple regression analysis. In contrast to patient expectations and pharmaceutical marketing strategies, which were not found to be statistically significant, the study found that price awareness, physician knowledge and experience, and drug characteristics factors had a statistically significant positive impact on physicians' drug prescribing behavior. Physician knowledge and experience was found to be the most significant influential factor.

Bersabeh (2018) examined how doctors perceived various promotional initiatives and determined how they affected doctors' prescribing habits. As a result, the study outlined crucial research ideas regarding how pharmaceutical marketing affects doctors' prescribing practices. It employed a questionnaire instrument to gather data and do data analysis. A sample of 133 practicing physicians working at 10 private and 6 public hospitals in Addis Abeba were given a set of self-administered structured questions.

This study discovered that, aside from advertising, different promotional strategies used by pharmaceutical firms had a considerable impact on doctors' prescription decisions. It has been proven that pharmaceutical marketing has a significant impact on a doctor's prescribing habit. Public relations, followed by personal selling and sales promotion, were found to be the most successful promotional tactics that significantly affect a doctor's prescription, while advertising had a negligible impact because advertisements for pharmaceutical products in scientific journals are the least likely to draw a doctor's attention.

Samrawit (2017) studied the methods used to advertise prescription drugs and assessed how they affected doctors' prescribing practices. Therefore, this study looked at the efficiency of such medication promotion strategies in relation to prescribing practices. It utilized doctors working in privately owned, green-licensed hospitals and self-administered for organized questionnaires. As a result, this study discovered that the various advertising strategies employed by pharmaceutical firms have an impact on the decision of physicians to write a prescription. Price, quality, the doctor's speciality, and other aspects relating to the traits of physicians were all elements

influencing the promotional tactics. Accordingly, the study found that doctors have a positive understanding of the product evidence they have received from medicinal agencies. The study's findings also indicate that pharmaceutical companies must use quantitative research to fully understand the healthcare landscape and the demand for physicians in order to maintain a competitive edge.

2.4 Research Gap

Prior research was unable to demonstrate a causal link between promotion and prescribing (Pauline et al. 2004). They added that additional elements, such as the practice environment or the payment mechanism, could have a confounding effect on the findings. Furthermore, these studies cannot prove a causal link between the use of promotion and incorrect prescribing because promotion may be relied upon by doctors who are already inferior prescribers or by doctors whose dependence on promotion results in bad prescribing. These studies also emphasized the demographic or personal traits of the physicians.

Micheline (2019), for instance, showed that there is a connection between a doctor's prescribing habit and their age, gender, and place of practice. Others, such Marmat et al. (2020), said that the practice of DTCA, which results in the sale of a drug or a test kit to patients, might have an impact on the patient-physician relationship since it may lead patients astray and pose a risk to the public's health. The DTCA has had a negative impact on pharmaceutical businesses' reliability.

Therefore, this body of evidence does not demonstrate that these doctors' prescribing would increase if they relied less on promotion. Studies like those by Hashim (2018) that focused on high-quality medications, efficacy, patient compliance, and medications with fewer side effects and better accessibility improved resident doctors' drug prescription. These research disregarded the influence of promotional tool efficacy on decision-making, especially in public health organizations. Additionally, these research looked at how the promotional mix affected behavior in the context of private general hospitals in Addis Abeba. For instance, Betselot (2021) investigated how the promotional mix affected employee behavior in Addis Abeba's private general hospitals. In addition, May and Yusuf (2018) advise more research into how each element influences doctors' prescribing practices as well as an assessment of the suggested model and moderating variables. These research could be a crucial first step in understanding how

promotional tactics and prescribing practices are related. These studies may test and add to the discussion of the potential influences on prescribing behavior. Therefore, the purpose of this study is to determine how effective pharmaceutical product promotion methods are at influencing doctors' prescribing behavior in Addis Abeba.

2.5 Conceptual Framework

This particular study mainly focused on examining the impact of pharmaceutical product promotion tools on the prescribing behavior of doctors in Addis Abeba. As a result, several unique elements have been discovered from related concepts; however, only those that are judged relevant have been added to the conceptual framework.

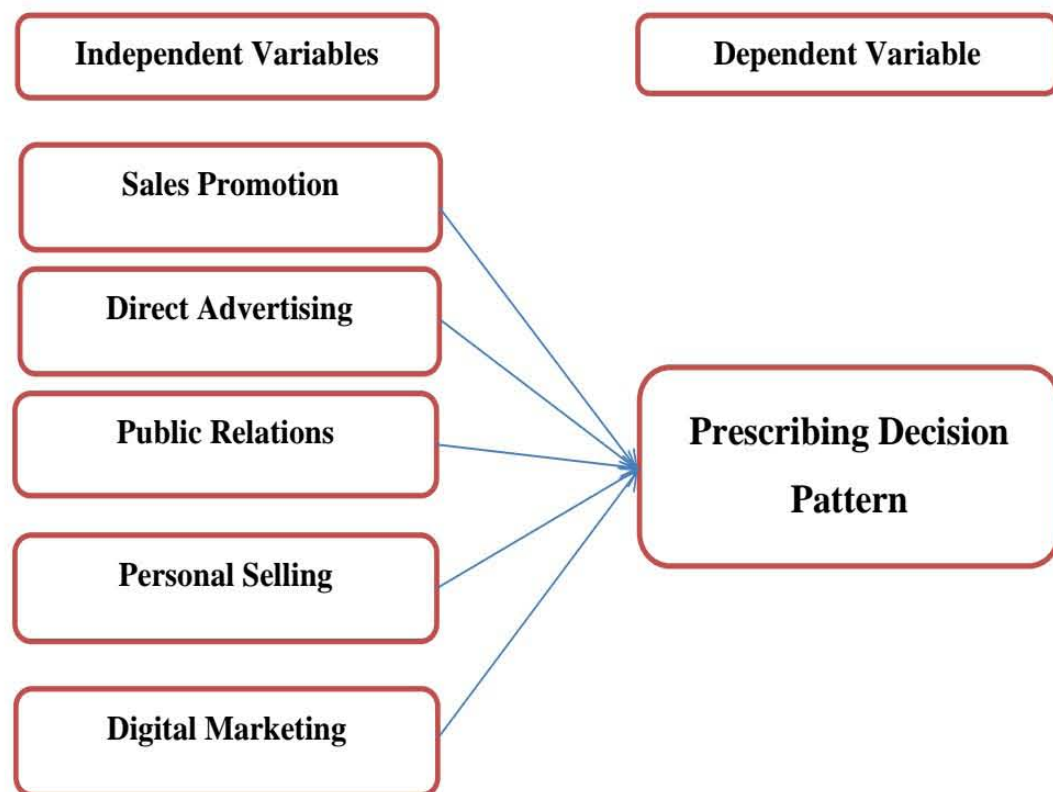


Figure 1 Conceptual Framework

Adapted from Dana et al., (2022)

The study by Dana et al. (2022) examining the impact of various marketing mix strategies on physicians' prescribing practices is significant because it has a favourable impact on the management of patients' illnesses and enhances peoples' health status by encouraging the use of

the most affordable and secure treatments for patients. They encouraged lawmakers to ensure a fair partnership between medical professionals and pharmaceutical businesses. They must ensure that promotion tactics improve the health of the patients. The relationship between dependent and independent variables is examined in the above figure for the conceptual framework. The conceptual framework, which serves as the foundation for this research project, is depicted in the figure. The link between the dependent variable—the prescribing decisions made by doctors in Addis Abeba—and the independent variables sales promotion, direct marketing, personal selling, digital marketing and public relations.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter of the study clarifies the research methodology section of the study and is intended to deal with the research approach and designs of the investigation. The chapter organizes the population, which includes the overall number of physicians, as well as the research strategy, methodology, and data source. The target demographic, sample size and sampling procedures, data collection tools, and data analysis methodologies are described together with the study's research design and methodology. This chapter concludes with discussion of research ethics and includes the methodologies employed for validity and reliability assessments.

3.2 Description of Study Time and Area

3.2.1 Study Period

According to the attached work schedule/plan, the research study's four-month duration was completed between October 2022 and December 3, 2022, within the allotted time limit.

3.2.2 Study Area Profile

This research was carried out in one of the eleven sub cities found in the City Government of Addis Ababa. The 2021 expected national census estimation reported a total population for this sub city of 5,245,179 and 89.82% of its population are included urban inhabitants. There are 11 hospitals (6 under regional health bureau and remaining under federal hospitals with almost 100 health centers in this city. The research site was purposefully chosen as it is thought that this city to be more hot spot area among the other regional cities because of current investment initiatives that is result in permanent and seasonal labor flow. This is correctly supposed that to represent all kinds of vulnerability for people in the city (Addis Ababa City Administrations, 2021).

3.3 Research Approach

Both quantitative and qualitative research methods were used. By concentrating on objects that can be counted and placed into predetermined categories for statistical analysis, the quantitative

method aims for accuracy (Creswell, 2014). Through the use of large-scale survey research, using techniques like close-ended questionnaires and/or organized interviews, quantitative research procedures generate statistical data. Additionally, Creswell (2014) pointed out that the quantitative method makes use of investigative techniques like surveys and experiments, collecting data on preset instruments that provide numerical data that can be examined using statistical techniques. It is a method for putting beliefs about the world to the test by looking at how dependent and independent variables interact. Thus, this study used a mixed-methods approach that combined quantitative and qualitative research methods.

3.4 Research Design

The research design is the conceptual structure within which the research is conducted (Kothari, 2004). The study used and adapt explanatory as well as descriptive research design. This helped to test the causal relationship among effectiveness of promotional tools in terms of four independent variables on one dependent variable namely decision making and its associated factors. Explanatory research design is best suited for this study in order to investigate the study's goal and test the hypothesis. By interviewing people about physicians' attitudes as well as their perceptions, behavior, or values, this study adapted a descriptive research methodology in order to collect data that depicts current occurrences.

3.5 Population and Sample of the Study

3.5.1 Source of Population

The source population was physicians who were working with patients in Addis Ababa.

3.5.2 Study Population

The study population was 455 physicians who are working in the public health facilities. These general practitioners (GP) and specialties included internists, dermatologists, neurologists, gynecologists, ophthalmologists, and orthopedics was included.

3.5.3 Sample Unit

The sample unit was individual physicians working directly with patients in Addis Ababa, Ethiopia.

3.5.4 Sample Frame

There are 13 hospitals in Addis Ababa (6 under regional health bureau and remaining under federal hospitals). In addition, there are almost 100 health centers in the study area. Since this study is in Addis Ababa, this study covered six hospitals under Addis Ababa Health Bureau, seven federal hospitals and 100 health centers administrated by Addis Ababa city Administrations (30). List of physicians was found from respective selected public health facilities in Addis Ababa.

3.5.5 Sample Size Determination

As part of this investigation, the sample size was determined using Yamane's (1967) widely accepted sampling methodology. For the entire sample population, where $N = 455$ with a 5% precision, the formula below was utilized. Calculating the sample size with a 95% confidence level and a p value of 0.5 is helpful. Consequently, 455 responses made up the study's sample size. The sample size for this investigation was determined using Yamane's formula. As an alternative to Cochran's method, Yamane (1967) proposed another condensed formula for calculating the sample size from a population. Again using a 95% confidence level with a 5% margin of error, he claimed that the computation for the necessary sample size was as follows:

$$n = \frac{N}{1+N(e)^2} \dots\dots\dots \text{Equation 1}$$

$$n = \frac{455}{1 + 455 (0.05)^2}$$

$$= 212$$

Where n = number of sample size and N = Total number of study population e = level of confidence to have in the data or degree of freedom which is 95% apply for this study with 5% error. This shows that the sample size was 212 respondents.

3.5.6 Sampling Techniques

From a hospitals managers and supervisors by regional office of Addis Ababa health bureau, this study obtained contact information from a group of randomly chosen medical professionals in Addis Abeba.

Health officers, healthcare providers who are not doctors, and other trainees were not included in this study. Due to worries about response bias and administrative issues, it also eliminated doctors with dual responsibilities. Physicians were chosen at random by the researcher for in-person and email interactions with telephone follow-up. Once data saturation had occurred (i.e., no new information had surfaced from more interviews), recruitment was added after 212 physicians.

This study selected six hospitals that was administrated under Addis Ababa Health bureau included Ras Desta, Zewditu, Yekatiti 12, Trunesh Bejing, Gandhi, and Menilik hospital while there was seven hospitals which were administered by federal government. There were Alert, Petros, Paulos, Amanuel, Tikur Ambesa, Yeka Kotebe and Police Hospitals. A two – stage cluster sampling method was used to get the study sample. First, a list of doctors was gathered from the appropriate Addis Abeba public health facilities. The sample size was distributed to the various public health institutions in a proportional manner. The study participants were chosen at random in the second stage using name lists that were drawn from the registers in accordance with the number of healthcare institutions in each section.

Table 1 Sample Size Determination

No	Attendants	Total Population	Proportion	Sample size
1	Under Addis Ababa Health Bureau	191	0.46593407	89
2	Federal Hospitals	225	0.46593407	105
3	Health Centres	39	0.46593407	18
Total		455		212

Source: Survey Result, 2022

3.6 Types and Sources of Data

Data for this study were gathered from primary and secondary data sources, respectively. In order to meet the specific needs of the research to make the data is free from personal bias, the researcher used primary data. In comparison to secondary data, it is accurate. The need for the use of secondary data is to generate new insights into existing primary data and accessibility of the data.

Primary Sources

The source of the primary data for this study was gathered from selected physicians in public health institutions in Addis Ababa who were working at different public hospitals local and federal health institutions level and health centers of Addis Ababa.

3.7 Data Collection Tools

The research instruments for this study were questionnaires, which are adopted from previous studies with some modifications.

3.7.1 Questionnaire

Using a Likert scale rated from 1 to 5 (strongly disagree to strongly agree), the questionnaire was modified from earlier research by Vishavadia et al. (2020) and some questions from a thorough literature review related to the impact of various pharmaceutical promotional practices on Indian doctors' prescription behavior were added.

In this study, open and closed ended questions were established and the first type of questions are those that offer sampled respondents with a question prompt and provide them a space in which to construct their own response. Besides, the study used closed-ended questions as it mainly provided a question prompt and request sampled respondents to choose from a list of possible responses in the study area.

In general, the questionnaire is divided into two parts. The first part dealt with background information, and the second part used questionnaires with Likert scales, which have five scales with 1 denoting strongly disagree, 2 denoting disagree, 3 denoting neutral, 4 denoting agree, and 5 denoting strongly agree, to examine the effectiveness of promotional tools for pharmaceutical products on the prescribing decision patterns of doctors in Addis Abeba.

3.8 Methods of Data Analysis

Regression and correlation models were used in the analytical procedure after the data were gathered using a questionnaire.

3.8.1 Data Processing

Using SPSS software version 25, data analysis was carried out. Several steps were taken to assure the validity of this study in order to limit the likelihood of receiving incorrect replies.

3.8.2 Descriptive Analysis

Descriptive statistics are used to summarize data in an organized manner by describing the relationship between variables in a sample or population. It condenses the data into a simpler summary and helps assess the population in a more manageable form. Demographic characteristics like gender, age, education, occupation, monthly income, and length of employment at public health institutions were all subjected to descriptive analysis. Tools like tables and percentage was used.

3.8.3 Inferential Analysis

Inferential analysis is used to make predictions or generalizations about the larger dataset, based on a sample data. To determine the impact of the five independent variables on the dependent variable, correlational and multiple linear regression analysis was utilized. The strength of the relationship between the independent characteristics and the dependent variable was assessed using correlation analysis.

Model Specification/Assumptions

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + \epsilon$$

Where,

- Y = Prescribing Decision Pattern
- a = y intercept
- b_1 = the regression coefficient of Sales Promotion
- X_1 = Sales Promotion

- b_2 = the regression coefficient of Direct Advertising
- X_2 =Direct Advertising
- b_3 = the regression coefficient of information Public Relations
- X_3 = information Public Relations
- b_4 = the regression coefficient of Personal Selling
- X_4 = Personal Selling
- b_5 = the regression coefficient of Digital Marketing
- X_5 = Digital Marketing
- e = error

3.9 Validity and Reliability

A research plan's instruments section details the specific instruments to be utilized in the study and how they measured the variables mentioned in this research hypothesis. An instrument is a test or tool that was used to collect data. Two measurements of the instruments were used in this investigation, particularly validity and reliability testing.

3.9.1 Validity

Reliability is concerned with the stability or consistency of the data or information, whereas validity asks whether the information or intonation gathered is pertinent to the decision being made. In order for scores to be properly interpreted, a test must measure what it is intended to assess, which is known as validity. When evaluating measuring equipment, validity is then positively significant (Geoffrey and Gay, 2019). In order to address the difficulties brought up by various literatures, the validity of this instrument was investigated further. Those with knowledge in the area of the study as well as specialists reviewed and revised the instruments.

3.9.2 Reliability

The degree to which a test consistently assesses whatever it is measuring is known as reliability. A test's reliability determines how certain we can be that the results are consistent and essentially the same results as those that would be produced if the test were given to the same test-takers again at a different time or by a different administrator (Geoffrey and Gay, 2019). Each dimension on this scale corresponds to a different component of the construct.

Table 2 Reliability Statistics Test Results

Variables	Cronbach's Alpha	N of Items
Sales Promotion	0.87	6
Direct Advertising	0.888	5
Public relations	0.895	7
Personal Selling	0.755	8
Digital Marketing	0.772	5
Prescription Decision	0.758	7

Source: Survey Result, 2022

Cronbach's alpha was used in this research study to check the internal consistency of the variables and the outcomes of the reliability test. The values that different authors allow for this test in order to achieve internal reliability vary, but 0.70 is the number that is most frequently accepted because it must be at least equal to this value in order to achieve internal reliability (Creswell, 2014).

3.10 Ethical Considerations

The required conducts of research was appropriately and strictly followed. Ethical permission letter was taken from Addis Ababa University found, and the letter was provided to the chosen public health institutions along with a brief explanation of the study area, its significance, and its breadth. Additionally, all relevant study concepts were correctly cited. All research participants were properly protected, and the data and information they provided through questionnaires to the chosen respondents was kept private and utilized solely for that reason.

Furthermore, the participants were made aware of the study's objectives and given assurances regarding anonymity. Respondents completed the surveys under pseudonyms, and the information provided was kept private. Additionally, respondents were not recorded in order to allow them the confidence to discuss the concerns in-depth without fear or suspicion. To prevent plagiarism concerns, all used materials and visited websites were duly recognized and documented.

CHAPTER FOUR

RESULTS AND DISCUSSIONS

4.1 Introduction

The data, analysis, and discussion of the research findings are presented in this chapter along with the response rate, descriptive statistics, correlation, regression analysis, and hypothesis testing.

4.2 Response Rate

Targeted questionnaires were given out at random to public health organizations and staff, as shown in the table below.

Table 3 Sample Size Determination

No	Attendants	Distributed	Returned	Response Rate
1	Under Addis Ababa Health Bureau	89	75	84%
2	Federal Hospitals	105	85	81%
3	Health Centres	18	15	83%
Total		212	175	83%

Source: Survey Result, 2022

In this study, 212 research study participants were involved, and 175 completely filled questionnaires were collected, giving the study a response rate of 83.0%. According to one study Hashim (2018), a study's response rate should be at least 50%; 60% is good; and 70% or more is outstanding. As a result, the below table's response rate of 83% was deemed appropriate and reliable for the study. In consequence, it can be said that the study had good reactions during COVID 19. Table 3 recapitulates the health institution information for those study participants. The majority of the subjects worked in hospitals, while others worked in health care. This shows that the majority of the surveyed physicians were working in hospitals.

Characteristics of the Study Participants

The respondents' gender, age, educational background, and professional experience for the sampled doctors are among their demographic features. It also includes work experience with pharmaceutical companies in federal and Addis Ababa City-administrated hospitals.

Table 4 Characteristics of Study Participants

	Variables (Category)	Count	N %
Gender	Male	122	69.7
	Female	53	30.3
Your Age (in years)	Ages below 35 years or Young adults	116	66.3
	Ages 36-55 years - Middle-aged adults	59	33.7
	Older than 55 years - Older adults	0	0.0
Education	GP or First Degree	121	69.1
	Specialist	23	13.1
	Sub Specialist	31	17.7
Work experience in health activities	Below 5 years	82	46.9
	6 to 10 years	59	33.7
	11 to 15 years	33	18.9
	Above 16 years	1	0.6

Source: Survey Result, 2022

The profile of practicing physicians was requested in this study, and their responses are organized in this section. Table 4 summarizes the professional and demographic information of the study participants. Among the total subjects, 53 (30.3%) were female physicians, while 122 of the

sampled respondents were male physicians. Female physicians made up a small percentage of those who took part in this study; male physicians made up more than two-thirds of those who took part.

The above table displays that, among the 175 sampled respondents, 121 (69.1%) of the total number of physicians had a GP or first degree, 23 (13.1%) of them were specialists, and the remaining 31 (17.7%) attended subspecialist education levels. This shows that the majority of the surveyed health institutions have been officially operated by general practitioners. This may cause a lack of specialists in the medical stream to meet various medical professional requirements.

The above table also shows that, of the 175 sampled respondents, 82 (46.7%) were working under the age of 5, 59 (33.7%) were working 6 to 10 years, and the remaining were working for more than 11 years. This meant that the study participants were working longer than five years. This aids in learning more about the study topic. The average age of the physicians who participated in this study was 35 years old, with 116 (66.3%) of them being under 35 and 57 (33.7%) being between 36 and 55 years old – middle-aged adults. Overall, this study used well-educated, young-aged physicians with extensive working experience in the studied area. It helps to gather pertinent information about promotional effectiveness and their prescribing decisions in their working area. Education, working experience, and knowledge help the research participants obtain all the information about the activities of manufacturers and distributors, the effect of which is to induce the prescription, supply, purchase, and/or use of medicinal drugs. Thus, it is evident that the background information on the employees was composed of gender, age, work experience, and education. It shows that there were proficient and talented individuals to respond to the questionnaire and provide pertinent data for this study.

4.3 Response Analysis

By utilizing frequency, percentage, mean, and standard deviation, the response analysis was carried out. They served to illustrate the various attributes of the data sets. In this study, descriptive statistics enable a more relevant presentation of the data, which facilitates a clearer interpretation of the data. They utilized mean ratings of 4.51–5.00 for "excellent" or "very good," 3.51–4.50 for "good," 2.51–3.50 for "average" or "moderate," 1.51–2.50 for "fair," and 1.00–1.50 for "poor" when examining comparable regions. Samrawit (2017) and May and Yusuf (2018) are the sources for it.

Along with the descriptive analysis, the thoughts and results of the interviewees were also included.

4.4.1 Sales Promotion

Medicine promotion is critical in increasing pharmaceutical prescriptions and sales. Additionally, it has had a significant impact on the availability and utilization of necessary medications, the expense of the healthcare system, and the prudent use of pharmaceuticals. As a result, it becomes a public health issue. Their responses were organized as follows:

Table 5 Sales Promotion (N=175)

	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree		Mean
	N	%	N	%	N	%	N	%	N	%	
I am interested in has well designed Trade Promotions of pharmaceutical companies.	0	0%	27	15%	24	14%	62	35%	62	35%	3.91
I am fascinated about well-designed short-term visitors obtaining strategy of pharmaceutical companies.	1	1%	31	18%	23	13%	45	26%	75	43%	3.93
I have received an extra benefit or Value promotions from pharmaceutical companies.	0	0%	13	7%	10	6%	61	35%	91	52%	4.31
I believe my patients receive price promotion from pharmaceutical companies.	6	3%	26	15%	27	16%	43	25%	72	41%	3.86
I consider free samples from pharmaceutical companies.	0	0%	30	17%	27	15%	60	34%	58	33%	3.83
Effective demonstrations and product rehearsals are conducted.	2	1%	38	22%	20	11%	76	43%	39	22%	3.64
Grand Mean 3.91 and SD 1.076											

Source: Survey Result, 2022

The above table shows that 3.91 grand mean found and rated as agree based on the mentioned benchmark found on section 4.4. Consequently, this study found that 3.64 as minimum itemized mean, 4.31 as maximum and below one standard deviation as per Table 5. The mean result of level of sales promotion utilization responses was rated as very good. This table also shows that one sample test result of itemized variables; which exhibited greater than 0.05. So, it can be determined that the mean scores for all latent variables are significantly different. This implies that sampled

respondents more aware about pharmaceutical companies in Ethiopia have used sales promotion aggressively.

In case of designed Trade Promotions of pharmaceutical companies, 70 % respondents agreed with the fact, 14 % are uncertain and 15 % preferred to the category of disagree. It has 3.91 a mean score value. It meant that they are interested in has well designed Trade Promotions of pharmaceutical companies.

In the second case, 69% respondents agreed or assured that medical visits in Ethiopia; 13% are uncertain and 19% disagree. A mean score was found as 3.93 and rated as very good. It meant they were fascinated about well-designed short-term visitors obtaining strategy of pharmaceutical companies.

In the third case, 52% respondents strongly agreed or the majority of the respondents have assumed that they had extra benefit or value promotions from pharmaceutical companies and others 13% disagree with the fact. The mean score for this item was 4.31 which is the highest mean score among the items in this group. It meant that have shifted to these companies due to pharmaceutical marketing usefulness despite several challenges like currency shortage, market decline.

In case of the fourth dimension, 66 % respondents agreed that they believe their patients receive price promotion from pharmaceutical companies. It destined that they could easily understand product information such as variety of factories' specifications, innovation and generic products, and short descriptions and 18 % disagree with the fact. On other hand, 76 % of them preferred the category of agree and it shows that they consider free samples from pharmaceutical companies. Finally, effective demonstrations and product rehearsals are conducted by from pharmaceutical companies. Here, most of the respondents (65%) have at least agreed demonstrating that the companies have attempted to conduct nominal demonstrations and product practices.

Similarly, Micheline (2019) strongly stated that pharmaceutical companies invested a larger percentage of their revenues in sales promotion, which generated significant profits for them, and they had little incentive to change their strategies. According to projections, doctors are the target audience for the majority of pharmaceutical marketing initiatives since, in the eyes of the manufacturer, they are the primary decision-makers and the gatekeepers for drug sales. Few doctors stated to always be impacted by a certain pharmaceutical marketing technique, while more

than half of doctors said they would never be swayed by sales calls from pharmaceutical corporations.

Sales promotion is a strategy used by companies to encourage more people to buy, use, or try a product or service (i.e., starts that are not already covered by other components of the marketing communication or promotional mix). Along with public relations, advertising, and personal selling, it is a crucial part of a company's marketing plan. By offering a stronger inducement for the target market to choose one brand's products or support over another, it serves as a competitive weapon. It works best to encourage product testing and impulsive buying. (Hashim, 2018).

4.4.2 Direct Advertising

Marmat et al., (2020), states that when a natural or positive frame of reference already exists, advertising can affect the choice of goods and brand. Consumer preference is affected by advertising. Advertising leads to increase in sales returns. Their responses were organized as follows:

Table 6 Direct Advertising (N=175)

	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree		Mean
	N	%	N	%	N	%	N	%	N	%	
I am fascinated with supplying of sufficient advertising materials (posters, brochures etc) by pharmaceutical companies.	2	1%	45	26%	18	10%	79	45%	31	18%	3.53
I am charmed with quality of advertising materials of pharmaceutical companies.	5	3%	41	23%	17	10%	83	47%	29	17%	3.51
I am interested in message of advertising materials of pharmaceutical companies.	12	7%	44	25%	20	11%	63	36%	36	21%	3.38
I am interested in content of advertising materials of pharmaceutical companies.	15	9%	46	26%	19	11%	61	35%	34	19%	3.31
I am fascinated with language of advertising materials presented by pharmaceutical companies.	6	3%	39	22%	32	18%	49	28%	49	28%	3.55
Grand Mean 3.46 and SD 1.196											

Source: Survey Result, 2022

Table 6 summarizes the survey results of sampled respondents' responses regarding direct advertising in public health institutions during the study period. The performance evaluation of pharmaceutical companies' use of direct advertising received an average mean score of 3.46. According to the results in the above table, all of the mean values were higher than 3.31 and lower than 3.55, which suggests that the respondents agreed with the numerous comments made about direct advertising. In some cases, it drives sales of both the marketed brand and other brands as well. It compels rival businesses to increase their marketing expenditures in order to maintain market share. Demand stimulation is the ultimate goal of advertising. The fact that the standard deviation scores were under two, which is a low standard deviation, further supports the notion that respondents' opinions were similar.

The lowest mean result is conceded as ranging from 3.31 to 3.38, indicating that sample respondents are somewhat fascinated by the messages in pharmaceutical companies' advertising materials. They are also somewhat concerned with the content of advertising materials from pharmaceutical companies. On the other hand, the highest means scores were grounded above 3.40, and it meant that they were fascinated with the supply of sufficient advertising materials (posters, brochures, etc.) by pharmaceutical companies. They were wowed by the high quality of pharmaceutical companies' advertising materials. They are fascinated by the language of advertising materials presented by pharmaceutical companies.

Of course, Hashim (2018) notes, advertising aids in educating and informing the public about the value of the product, which encourages them to develop the product in question or to support the idea behind it. The state of ignorance is supported and assisted in transitioning to one of awareness and comprehension. It makes sense why so many companies rely on advertising to build or enhance their brand identities. A huge number of people, many of whom the marketer does not know or cannot meet, may be dispersed around a town, a state, a country, or the entire planet. This is the countless advantage and function of advertising.

4.4.3 Public Relations

Raising awareness, informing and educating the public, gaining knowledge, fostering trust, encouraging consumer acceptability, and giving customers a cause to buy are all marketing goals that may be supported by public relations efforts. Their responses were organized as follows:

Table 7 Public Relations (N=175)

	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree		Mean
	N	%	N	%	N	%	N	%	N	%	
I trust the quality of products from their pharmaceutical brand information I obtain from CME.	8	5%	68	39%	15	9%	40	23%	44	25%	3.25
I associate and admire branded pharmaceutical products with the right corporate image.	10	6%	49	28%	22	13%	40	23%	54	31%	3.45
I prefer to a brand that fulfill ethical responsibilities with physicians and country.	8	5%	45	26%	24	14%	41	23%	57	33%	3.54
I think pharmaceutical brands have has a reputation of high quality.	5	3%	22	13%	40	23%	54	31%	54	31%	3.74
Among various competing brands, I can immediately identify the brand "X" because I get sufficient information from CME and CPD presented by pharmaceutical companies.	4	2%	25	14%	33	19%	54	31%	59	34%	3.79
I consider myself to be loyal to brands of pharmaceutical products because of their corporate social responsibility.	15	9%	43	25%	29	17%	36	21%	52	30%	3.38
I attend symposiums and workshops organized by pharmaceutical companies to be more familiar with the brand of pharmaceutical products.	19	11%	42	24%	33	19%	41	23%	40	23%	3.23
Grand Mean 3.48 and SD 1.0270											

Source: Survey Result, 2022

Table 7 recapitulates the survey results of the sampled respondents' responses regarding public relations issues in public health institutions during the study period. The assessment of public relations matters used by pharmaceutical companies' performance evaluation was rated at an average mean score of 3.48. The preceding table's consequences show that all of the mean values were larger than 3.23 and lower than 3.79, indicating that the respondents agreed with all of the statements made about branding. Pharmaceutical sales and marketing experts recognized the need of creating a buzz in the market prior to media ad breaks. It introduces a product with little to no promotion while also creating some advertising news where there is none. Additionally, it creates relationships between brands and customers by offering value-added customer services. The standard deviation scores were also less than two, which is a low standard deviation and shows that respondents had similar views.

The lowest mean result is conceded as ranging from 3.23 to 3.38, which indicated that sampled respondents are somewhat attend symposiums and workshops organized by pharmaceutical companies to be more familiar with the brand of pharmaceutical products. It also trusts the quality of products from their pharmaceutical brand information I obtain from CME.

On the other hand, the highest means scores were grounded above 3.79, which meant that respondents can recognize the brand "X" quickly among other competing brands because they get sufficient information from CME and CPD presented by pharmaceutical companies. They associated with and admired branded pharmaceutical products. Sampled respondents also prefer a very unique brand image compared to competing brands and think pharmaceutical brands have a reputation for high quality. Finally, they recognize the brand "X" quickly among other competing brands. Overall, the study found that the majority of respondents preferred the categories of strongly agree and agree to show that such companies provided adequate resource materials, promotional materials, and samples to facilitate all promotional activities. The highest mean scores, on the other hand, were grounded over 3.79, indicating that respondents have sufficient knowledge from CME and CPD provided by pharmaceutical businesses and can rapidly distinguish brand "X" from other competing products. They were drawn to and respected branded medicinal products. A very distinctive brand image is also preferred by sampled respondents above that of rival brands, and they believe pharmaceutical brands enjoy a good reputation for quality. And finally, they can easily distinguish brand "X" from rival products. According to the study's findings, the majority of respondents selected the categories of strongly agree and agree, demonstrating that these businesses offered sufficient promotional materials, samples, and resource materials to support all promotional activities. The majority of them also preferred the same category to indicate they inform, persuade, and remind indirectly about the products and brands they sell, and they similarly assured using personal selling, face-to-face promotions, and posters as aggressive promotion of pharmaceutical products in Ethiopia.

4.4.4 Personal Selling

Regarding Personal Selling, the representatives' performance was rated by a sample of respondents. promotional activities, promotional opportunities presented by medical representatives, and others. Their responses were organized as follows:

Table 8 Personal Selling (N=175)

	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree		Mean
	N	%	N	%	N	%	N	%	N	%	
I am happy with Medical Representatives' promotional activities.	10	6%	23	13%	15	9%	52	30%	75	43%	3.91
I am happy with the promotional opportunity presented by Medical Representatives.	26	15%	26	15%	19	11%	40	23%	64	37%	3.51
I am happy on the relationships with Medical Representatives.	24	14%	32	18%	23	13%	31	18%	65	37%	3.46
Good Medical Representatives Involvement will intend to simplify my job.	41	23%	42	24%	12	7%	23	13%	57	33%	3.07
Respectable Medical Representatives Involvement will intend to ease my job.	63	36%	42	24%	7	4%	14	8%	49	28%	2.68
I am happy with Medical Representatives' marketing strategies.	20	11%	37	21%	5	3%	81	46%	32	18%	3.39
I trust Medical Representatives.	23	13%	26	15%	0	0%	84	48%	42	24%	3.55
Recognition for my contribution goes to Medical Representatives' cooperation.	29	17%	27	15%	7	4%	80	46%	32	18%	3.34
Grand Mean 3.36 and SD 1.0442											

Source: Survey Result, 2022

Table 8 recapitulates the survey results of sampled respondents' responses regarding the effectiveness of medical representatives in public health institutions during the study period. The assessment of the effectiveness of medical representatives used by pharmaceutical companies' performance evaluation was rated at an average mean score of 3.36. Consequences in the above table demonstrate that all the mean values were greater than 2.68 and less than 3.91; this is a sign that the respondents disagreed with the various statements on branding. They did not agree that respectable medical representatives' involvement would ease their job. while they are content with the medical representatives' promotional activities. They are also pleased with the promotional opportunity presented by medical representatives, and they are joyful about their relationships with medical representatives. Similarly, the standard deviation scores were 1.042, which is less than two, which is a small standard deviation, and therefore suggests that respondents had similar opinions.

4.4.5 Digital Marketing

Regarding digital marketing, sample respondents were asked to rate the following practices of online or digital marketing in Ethiopia. The sampled study participants' responses were organized as follows:

Table 9 Digital Marketing (N=175)

	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree		Mean
	N	%	N	%	N	%	N	%	N	%	
Pharmaceutical companies provide timely information via social media.	35	20%	30	17%	9	5%	18	10%	83	47%	3.48
Pharmaceutical companies provide relevant information via digital system.	44	25%	34	19%	6	3%	17	10%	74	42%	3.25
I can easily access pharmaceutical companies' information supplies via electronic media.	46	26%	14	8%	6	3%	21	12%	88	50%	3.52
I can obtain unique pharmaceutical companies' magazines, brochures, and other materials.	25	14%	32	18%	2	1%	56	32%	60	34%	3.54
I can obtain clear message via social media accounts about pharmaceutical information.	36	21%	30	17%	4	2%	61	35%	44	25%	3.27
Grand Mean 3.41 and SD 1.0442											

Source: Survey Result, 2022

Table 9 recaps the survey results of sampled respondents' responses regarding online or digital marketing in the public health institutions during the study period. The assessment of effectiveness of online or digital marketing used by pharmaceutical companies' performance evaluation was rated at an average mean score of 3.41. Concerns in the above table prove that all the mean values were greater than 3.25 and less than 3.54; this is a sign of the respondents agreed with the various statements on branding. Sampled research respondents easily access pharmaceutical companies' information supplies via electronic media. They obtain unique pharmaceutical companies' magazines, brochures, and other materials. But there is a weak practice in this regard including the provision of relevant information via digital system and to obtain clear message via social media accounts about pharmaceutical information

4.4.6 Prescription Decision

Table 10 Prescription Decision (N=175)

	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree		Mean
	N	%	N	%	N	%	N	%	N	%	
I am deciding what to prescribe.	15	9%	33	19%	4	2%	71	41%	52	30%	3.64
I maximized the effect of the treatment strategy.	18	10%	30	17%	4	2%	74	42%	49	28%	3.61
I value the promoted drugs immensely.	25	14%	36	21%	2	1%	31	18%	81	46%	3.61
I have complete knowledge of the situation.	16	9%	30	17%	5	3%	42	24%	82	47%	3.82
I will have unbiased knowledge of relevant options.	24	14%	31	18%	4	2%	44	25%	72	41%	3.62
I am deciding what to prescribe for patients.	20	11%	41	23%	0	0%	55	31%	59	34%	3.53
I have the ability to evaluate a situation and make the best possible choice.	10	6%	30	17%	3	2%	91	52%	41	23%	3.70
Grand Mean 3.65 and SD 1.039											

Source: Survey Result, 2022

Table 10 recaps the survey results of sampled respondents' responses regarding prescription decisions in public health institutions during the study period. The valuation of effectiveness of the prescription decision used by the respondents' performance evaluation was rated at an average mean score of 3.65. Results in the above table prove that all the mean values were greater than 3.53 and less than 3.82; this is a sign that the respondents approved of the various statements on branding. Sampled study participants have the ability to evaluate a situation and make the best possible choice. They also have complete knowledge of the situation. In addition, they maximized the effect of the treatment strategy.

Promotion affects prescribing more than doctors realize and is linked to higher sales of pharmaceuticals. Doctors also agree that promotion has influenced their prescribing. There is a wealth of evidence that suggests that promotion affects attitudes and behavior across a variety of themes and designs. Although there are gaps in the evidence, more high-quality studies are necessary to establish causal relationships between promotion and attitudes and behavior of doctors and others, to provide more granular information about people's attitudes toward

promotion, and to examine the impact of interventions to regulate or counter the effect of promotion (Mintzes, 2010; Marmat et al., 2020). Given the increasing sums of money corporations spend on this activity, it is becoming more and more crucial to comprehend the effects that drug marketing has on the prescription and usage of medication.

4.4 Correlation Analysis

The strength and direction of a linear association between two variables was measured in this study using Pearson's correlation coefficient (r).

Table 11 Test result of correlation analysis (N= 175)

		Correlations					
		Sales Promotion	Direct Advertising	Public relations	Personal Selling	Digital Marketing	Prescription Decision
Sales Promotion	Pearson Correlation	1	.588**	.394**	.257**	.470**	.597**
	Sig. (2-tailed)		.000	.000	.001	.000	.000
	N	175	175	175	175	175	175
Direct Advertising	Pearson Correlation	.588**	1	.471**	.113	.210**	.464**
	Sig. (2-tailed)	.000		.000	.135	.005	.000
	N	175	175	175	175	175	175
Public relations	Pearson Correlation	.394**	.471**	1	.501**	.457**	.644**
	Sig. (2-tailed)	.000	.000		.000	.000	.000
	N	175	175	175	175	175	175
Personal Selling	Pearson Correlation	.257**	.113	.501**	1	.533**	.578**
	Sig. (2-tailed)	.001	.135	.000		.000	.000
	N	175	175	175	175	175	175
Digital Marketing	Pearson Correlation	.470**	.210**	.457**	.533**	1	.670**
	Sig. (2-tailed)	.000	.005	.000	.000		.000
	N	175	175	175	175	175	175
Prescription Decision	Pearson Correlation	.597**	.464**	.644**	.578**	.670**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	
	N	175	175	175	175	175	175

** . Correlation is significant at the 0.01 level (2-tailed).

Survey result, 2022

The Pearson correlation coefficient has constant values that range from -1 to +1. A low correlation coefficient (between 0.1-0.29) denotes a tenuous or nonexistent association between the two items.

The association is moderate if r is between 0.3 and 0.69. Strong relationships between variables are indicated by a high correlation coefficient, or one > 0.7 . (Bersabeh, 2018).

The goal of correlation analysis is to quantify the relationship between two variables. The prescription decision and all of the independent variables are therefore positively correlated, according to an analysis of the correlation matrix. As a result, analysis of the correlation matrix reveals a positive relationship between each independent variable and the prescription decision.

Assuming that the t-value and corresponding p-value are in the "t" and "sig." columns (Table 13), the checks indicate that direct advertising $p(0.030) 0.05$ is significant in this study. This means that by integrating direct advertising into the model, it has a more extensive involvement in explaining prescription decisions. This finding is consistent with the findings of Hashim (2018) and Dana et al., (2022),

There is a positive and significant (Sig. (2-tailed).000 with correlation that is significant at the 0.01 level (2-tailed), despite the fact that the aforementioned simple correlational and mean analysis provide insightful information about the straightforward relationship between the dependent and independent variables. Sales promotion and prescription decision are correlated ($r = .597$). It is positively and significantly related to the prescription decision, claims Hashim (2018)

The correlation matrix reveals a positive and significant relationship between direct advertising ($r = .464$) and prescription decisions (sig. (2-tailed).000 with a positive correlation is significant at the 0.01 level (2-tailed). May and Yusuf (2018), Bersabeh (2018) and Samrawit (2017), on the other hand, believed that direct advertising is positively and significantly related to prescription decision.

A valuation of the correlation matrix shows that all the independent variables and the prescription decision are positively related. As a result, there is a positive and significant (Sig. (2-tailed).000 with a significant correlation at the 0.01 level (2-tailed). There is a correlation between drug branding and incorporation ($r = .644$) and prescription decision. This finding is consistent with Bersabeh (2018) and Samrawit (2017) findings, which show that drug branding is positively and significantly related to prescription decision.

An assessment of the correlation matrix between the last independent variable of this study and prescription decisions was conducted. As a result, the findings revealed a positive and significant relationship between Personal Selling (.578) and prescription decision at (sig. (2-tailed) .000 with correlation is statistically significant at the 0.01 (2-tailed) level. This finding is consistent with the findings of Bhat et al. (2019), who found that the effectiveness of medical representatives is related to prescription decisions in a positive way.

The table above presents the result of the correlation analysis made using bivariate correlation. As a result, this study discovered a strong positive relationship (.670) between the availability of digital marketing and prescription decision consequences that is significant at the 0.01 (2-tailed) level. According to Hashim (2018), it is positively and significantly related to the prescription decision.

4.5 Effect of Promotional MIX on Prescribing Behavior Using Regression Analysis

The associations between numerous independent and dependent variables, or treatment options, are examined in multivariate analysis. It is challenging mathematics to analyze a complicated collection of factors to obtain research findings. Modern statistical software packages conveniently enable the user-friendly management of complex data. In order to examine the effects of concurrent independent and/or prescription decisions, multivariate statistics are used. These statistics more closely resemble real-world research questions, give a sympathetic understanding of the relationships between various dependent and/or independent variables, and are more readily available with accessible statistical software packages.

4.5.1 Assumptions and their Diagnostic Test Results

This study's findings show that all of the diagnostic assumptions for the regression assumption, such as normality, multicollinearity, autocorrelation, and scatter plot, are met.

Test for average value of the error term is zero ($E(u_t) = 0$)

The premise that the average value of the mistakes is zero is the first one that must be made. Actually, this presumption won't ever be broken if a constant term is included to the regression

equation. The average value of the error term in this study is therefore anticipated to be zero because the constant term (i.e.) was included in the regression equation.

Test for Normality Test

Positive skewness is characterized by a distribution that is concentrated on the left of the picture and has a skewness with its type of tail that is longer on the right. Right-skewed distribution is the alleged condition. negative skew, with the distribution's center of mass centered to the right of the picture and the left tail being longer than the right. It is claimed that the distribution is left-skewed.

Normality Test

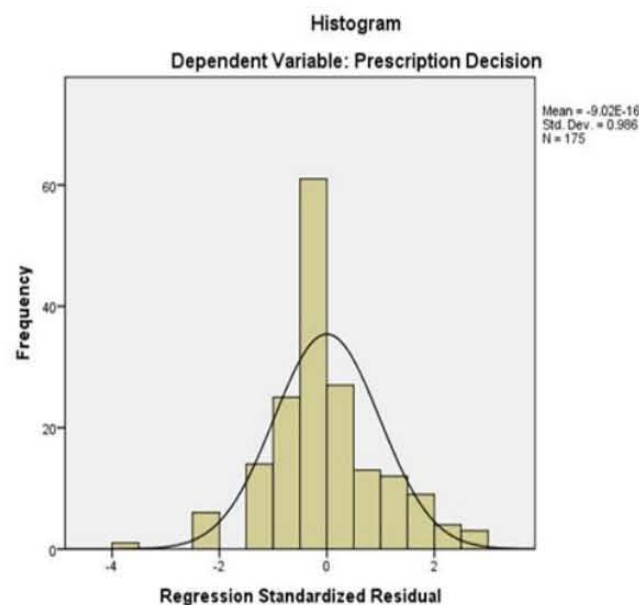


Figure 2 Normality - Histogram

Survey result, 2022

As we can see from the above descriptive statistic from the above table, Kurtosis and Skewness statics calculation shows that the distribution is normal because Kurtosis and Skewness are between -2 and +2, meaning that the data is normally distributed and had a reasonable variance to use in subsequent analysis. (Bersabeh, 2018).

Test for multicollinearity

Every term in the model has a VIF (Variance Inflation Factor) that is used to calculate the total impact of each regressor's reliance on that term's variance. Multicollinearity is indicated by one or more big VIFs. According to practical experience, any VIF value that is greater than 5 or 10 is a sign that the related regression coefficients are inaccurately assessed due to multicollinearity.

Multi collinearity Test

Table 12 Collinearity Statistics Test Results

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	Sales Promotion	.529	1.892
	Direct Advertising	.543	1.840
	Public relations	.551	1.815
	Personal Selling	.613	1.632
	Digital Marketing	.570	1.754

Survey result, 2022

The VIF values in the table above are all less than 5 or 10, and no collinearity was found in the data, according to the statistics on collinearity. The table also shows the regression analysis's findings, which are based on the dependent variable. The standardized Beta coefficient explains the independent variables that contribute to the variation of the dependent variable.

Test for Autocorrelation

The covariance between the error terms across time is assumed to be zero for the disturbance terms in multiple linear regressions.

Table 13 Autocorrelation Test: Durbin Watson

Variables	DW test static result
All variables	1.621

Survey result, 2020

In this investigation, the well-known Durbin-Watson Test was used to determine whether autocorrelation existed. It is therefore presumed that there is no correlation between the faults. It would be said that the errors are "auto correlated" or "serially correlated" if they are not uncorrelated with one another. Therefore, this presumption needs to be tested.

Linearity Test

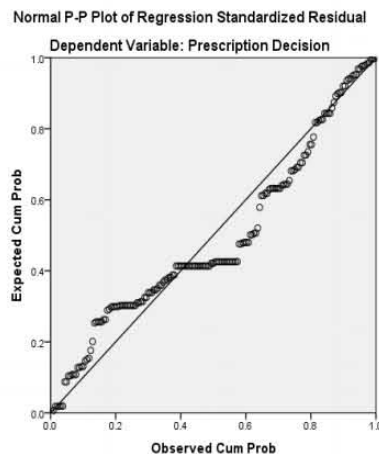


Figure 3 Normal PP Plot

Survey result, 2022

The dependent variable is defined by linearity as a linear function of the predictor (independent) variables. When the link between the dependent and independent variables is linear in character, multiple regressions can accurately estimate the relationship (Osborne & Waters, 2002). Residual plots (Figure 3) showed that there was no deviation from linearity in the residuals, contrary to what may be predicted to see a random distribution of dots around the horizontal line. As a result, the scatter plot's visual analysis allowed for the demonstration of the linear correlations between each independent variable and the study's dependent variable. Because of this, the variables satisfied the linearity assumption.

A plot of the standardized residuals (on the Y-axis) against the regression's standardized predicted value (on the X-axis) can be used to visually inspect homoscedasticity. Standardized residuals should randomly disperse around a horizontal line of zero if there are no assumptions that have been broken. In a perfect world, residuals would be evenly distributed and randomly distributed around zero (the horizontal line). Additionally, a good amount of variability in the

plots was seen upon closer scrutiny, indicating that the variables also met the homoscedasticity supposition.

4.5.2 Regression test result

Regression analysis was completed as the last statistical test, and it involved both independent and dependent variables. The data were obtained as the average of each dimension of the independent factors and the dependent variable.

Table 14 Regression Test Results

Model Summary ^b					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.827 ^a	.684	.675	.660	1.621

a. Predictors: (Constant), Digital Marketing , Direct Advertising , Personal Selling , Public relations, Sales Promotion

b. Dependent Variable: Prescription Decision

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	<i>F</i>	<i>Sig.</i>
1	Regression	159.370	5	31.874	73.235	.000b
	Residual	73.553	169	.435		
	Total	232.923	174			

a. Dependent Variable: Prescription Decision

b. Predictors: (Constant), Digital Marketing , Direct Advertising , Personal Selling , Public relations, Sales Promotion

Coefficients ^a						
		Unstandardized		Standardized		
		Coefficients		Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	.047	.203		.229	.819
	Sales Promotion	.217	.058	.224	3.767	.000
	Direct Advertising	.111	.051	.128	2.182	.030
	Public relations	.227	.054	.244	4.184	.000
	Personal Selling	.202	.051	.218	3.957	.000
	Digital Marketing	.263	.049	.310	5.421	.000

a. Dependent Variable: Prescription Decision

Model Summary

To assess how well a regression model fits the data, the first table primarily provides the R, R², modified R², and the standard error of the estimate. In this test, R can be viewed as one indicator of how well the dependent variable—in this case, the prescription decision—was predicted.

- The value of R, or the *multiple correlation coefficients*, is shown in the "R" column. A result of .827 in this study denotes a high level of prediction. In this study, a value of .827 was discovered, indicating that the independent factors can account for 80.0 percent, or 50 percent, of the variation in the dependent variable, *prescription decision*.

- As can be seen in the preceding table, the independent variables have a R square of .684, or 68.4%, while the remaining other irrelevant variable ($100 - 68.4\% = 31.6\%$) has an impact on the dependent variable level. This outcome also suggests that the variable chosen as an independent variable affected the outcomes of the *prescription decision*.

- However, another crucial element is to accurately provide the data interpretation of "adjusted R square" (adj. R²). In this study, a score of .675 (coefficients table) indicates that the predictors that should be kept in the model account for 67.5 percent of the variation in the outcome variable.
- There is low inconsistency between the values of R-squared and Adjusted R-square, which indicates a good fit of the model, and Adjusted R² will always be less than or equal to R².

ANOVA

The ANOVA's F-ratio (Table 12) measures how well the total regression model fits the data. The table demonstrates that the independent factors statistically substantially predict the dependent variable, $F(5, 169) = 73.235$, $p(.05)$, indicating that the data are well modeled by the regression model.

Statistical Significance of the Independent Variables

Each independent variable's statistical significance is evaluated, as well as the population's distribution of the unstandardized (or standardized) coefficients equal to 0 (zero) ($H_0: = 0$ against $H_a: 0$ for each coefficient). The coefficients deviate from zero in a statistically meaningful way if

p.05 is reached. These tests of significance are useful in determining if each explanatory variable is necessary for the model given that the others are already there

As expected, the t-value and corresponding p-value are in the "t" and "sig." columns (Table 13), indicating that $p(.0001) 0.05$ is significant in this study. This means that the explanatory variable focusing on sales promotion is more useful in the model; it suggests that it has a greater and more considerable influence on explaining prescription decisions. This result is consistent with the findings of May and Yusuf (2018), Bersabeh (2018) and Samrawit (2017), who observed that sales promotion positively influenced prescription decisions.

Assuming that the t-value and corresponding p-value are in the "t" and "sig." columns (Table 13), the checks indicate that direct advertising $p(.030) 0.05$ is significant in this study. This means that by integrating direct advertising into the model, it has a more extensive involvement in explaining prescription decisions. This finding is consistent with the findings of Hashim (2018) and Dana et al., (2022), who discovered that direct advertising represents anything related to the physicians' memory or influences their prescription decision.

Based on the *t*-value and corresponding *p*-value in the "t" and "sig." columns (Table 14), respectively, in this study, the regression examinations tell us that the Public relations at $p(.0001)0.05$ is significant. This infers that the explanatory variable "branding" of the drug is in the model and has a substantial contribution to explaining the prescription decision. In line with this study, May and Yusuf (2018), Bersabeh (2018) and Samrawit (2017), perceived the Public relations as positively affecting the prescription decision.

Seeing the *t*-value and corresponding *p*-value in the "t" and "sig." columns (Table 16), respectively, in this study, the examinations tell us that Personal Selling $p(.0001)0.05$ is significant. This shows that the explanatory variable Personal Selling is in the model and has a considerable influence on explaining prescription decisions. Betselot (2021), Fazle et al., (2020) and Vishavadia et al., (2020) discovered that the effectiveness of medical representatives has a significant positive effect on prescription decisions, which is consistent with this study.

As expected, the t-value and corresponding p-value are in the "t" and "sig." columns (Table 13), indicating that $p(.0001) 0.05$ is significant in this study. This means that the explanatory variable

"digital marketing" is more useful in the model; it suggests that it has a greater and more considerable influence on explaining prescription decisions. This result is consistent with the findings of Fazle et al., (2020), Bersabeh (2018) and Samrawit (2017), who perceived that digital marketing was positively affecting prescription decisions.

4.6 Qualitative Analysis

4.6.1 Overall

By convincing doctors to prescribe its drugs, a pharmaceutical company can increase its market share. The majority of interviewees in the qualitative study underlined that the corporations are concerned with sales promotion and that enhancing the drugs' marketing effectiveness has simplified their medical work. One of the informants provided additional support for this:

If you are prescription some medications, patients will face several challenges mainly they will not obtain that product or they may get alternative medication and the patient's main disadvantage. It's a fantastic job for us when companies provide their alternatives and we can advise the patients easily because they can easily buy or better to direct them to public pharmacies.

Having an agent in Addis Abeba, which made it simple for them to prescribe medications for patients, was one of the methods in addition to visiting public hospitals. One informant from the public sector confirmed this, saying that

I require an effective solution, but as a public institution, I am so concerned about affordability that I do not want to leave a patient in the city. My first choice is to prescribe medications at the public pharmacy. Sales promotions, web marketing, direct marketing, and personal selling are the primary ways that pharmaceutical businesses' promotional materials influence my prescription-writing choice.

This was further validated by one of the informants:

I am very interested in firms' drug promotions in scientific journals that encouraged me to prescribe a specific brand drug. I have a keen interest

in pharmaceutical companies' advertisements in peer-reviewed journals that led me to recommend a certain brand of medication. Despite my reservations regarding the claims made on gift box and the ongoing information from prestigious scientific journals and publications, I don't care about the cover of free samples, but I need continuous information provided by articles in different award-winning scientific journals. Of course, I obtain clues and indications through pharmaceutical advertising.

The majority of the respondents agreed that there are sufficient sales persons or medical marketing experts in the country, they are well trained in Ethiopia, and pharmaceutical marketing experts have shifted to other occupations due to pharmaceutical marketing challenges like currency shortage, market decline and other. Most respondents agreed that purchasing ability of patient or customers were weak (most Ethiopians are free users via government supports in public hospitals); and main challenge of in Ethiopia pharmaceutical product market considered as government policies, inferior products are verified as best quality, unable to use promotional activities like TV, billboards and similar Medias.

As result, companies highly invested on materials and promotional materials to facilitate all promotional activities; spending on products and brands and used personal selling, face to face promotions, posters as aggressive promotion of pharmaceuticals products. Companies did not provide appropriate leadership through the effective use of power in their channel, less interested in knowing needs and problems of channel members, inadequate outlets in Ethiopia, and they used low-cost analyzer or defender strategy.

Sales Promotion: The majority of respondents agreed that pharmaceutical companies' interest in educating physicians on new medicine by funding their attendance at international scientific conferences influenced their decision to prescribe a specific brand.

- Extra incentives like office supplies, patient record forms, and other things had an impact on the doctor's prescription behavior.
- Cheap gifts from pharmaceutical suppliers—pens, paper weights, writing pads, etc.—that feature the medicine name didn't serve to remind them of the drug brand while prescribing presenting sample bottle brochures, posters, etc.

- Considerations include medicine behaviour, efficiency, efficacy, potency, price, etc.
- Activities in public hospitals: bulk purchase, progress evaluation, and reading

4.7 Discussion

This study used correlation analysis to establish a relationship between sales promotion and prescription decision ($r=.597, .000$), and multiple regression analysis to examine its impact on prescription decision in public health facilities (Sig, 0.0001). As a result, the regression analysis's findings show that sales promotion has a positive and significant impact on the dependent variable, confirming the validity of the hypothesis. Similar to this, a number of studies, including Samrawit (2017), May and Yusuf (2018), and Bersabeh (2018), came to the conclusion that sales promotion had a favorable, significant impact on prescription decisions.

This study's initial hypothesis was that prescription decisions in public health institutions would be positively and significantly impacted by direct advertising. Additionally, it used correlation analysis to establish a relationship between direct advertising and prescription decision ($r=.464, .000$) and multiple regression analysis to examine the impact of direct advertising on prescription decision in the health sector (Sig, 0.030). The hypothesis is confirmed by the regression analysis's finding that it has a positive and substantial impact on the dependent variable, prescription decision. Hashim (2018) and Dana et al. (2022) considered that integrated successful marketing advertisement favourably affects prescription as it is the important component of the marketing mix and it is everything that is remembered as part of a promotional mix or marketing strategy.

This study used correlation analysis to demonstrate a connection between drug branding and prescription decisions ($r=.644, .000$), and multiple regression analysis to examine the impact of drug branding on healthcare decision-making (Sig, 0.0001). As a result, the hypothesis is supported by the regression analysis's finding that the drug's branding has a positive and substantial impact on the dependent variable. This study made the claim that drug branding influences prescription decisions in public health facilities in a favourable and significant way. This outcome is in line with Samrawit's (2017) findings, May and Yusuf's (2018) findings, and Bersabeh's (2018) observation that the drug's branding influences prescription decisions favorably. It is associated to

the consumer's judgment (perception) about product's overall excellence or superiority with reference to substitutes.

This study also employed correlation analysis and established the relationship between Personal Selling and prescription decision ($r=.578, .000$), and tested the influence Personal Selling on prescription decision in health sector (*Sig, 0.0001*) by applying multiple regression analysis. As a result, the result of the regression analysis displays that Personal Selling has a positive and significant effect on dependent variable, prescription decision; this assure that the hypothesis is accepted. Several studies found similar results and it affirms other research findings, Hashim (2018) and Dana et al., (2022) perceived, to the effect that Personal Selling is the strongest element of marketing promotional mix as far as influencing prescription decision is concerned. Numerous studies indicate that the better the medical representatives' relationships with doctors, the greater the likelihood of a doctor prescribing a particular drug. Doctors play a significant role in the pharmaceutical industry, acting as the company's spokesperson and decision-makers by prescribing medications. They also exert significant influence on other doctors' prescription practices, which is crucial for pharmaceutical companies. May and Yusuf (2018) and Bersabeh (2018) also mentioned multinational pharmaceutical companies have marketing hurdles due to a shortage of medical experts with the necessary training, a decline in local producers' capability, and hefty import duties. In this study, availability of experienced and educated pharmaceutical marketing professional has statistically significance effect on the consequences of marketing outcome.

This study's initial hypothesis was that prescription decisions in public health institutions would be positively and significantly impacted by digital marketing. Additionally, it used correlation analysis to establish a connection between prescription decisions and digital marketing ($r=.670, .000$), and it used multiple regression analysis to examine the impact of digital marketing on prescription decisions in public health institutions (*Sig, 0.0001*). The hypothesis is confirmed by the regression analysis's finding that it has a positive and substantial impact on the dependent variable, prescription decision. Numerous research revealed that May and Yusuf (2018) and Bersabeh (2018) believed that prescription decisions were favourably influenced by digital marketing.

Table 15 Summary of Findings

Variables	Hypothesis	<i>r</i>	β	<i>Sig.</i>	Decision
Sales Promotion	H ₁ : Sales Promotion has a positive and significant effect on prescription decision in public health institutions	.597* *	.217	.000	<i>Supported</i>
direct advertising	H ₂ : Direct advertising has a positive and significant on prescription decision in public health institutions	.464* *	.111	.030	<i>Supported</i>
Public relations	H ₃ : Public relations has a positive and significant effect on prescription decision in in public health institutions	.644* *	.227	.000	<i>Supported</i>
Personal Selling	H ₄ : Personal Selling has a positive significant effect on prescription decision in in public health institutions	.578* *	.202	.000	<i>Supported</i>
digital marketing	H ₄ : Digital marketing has a positive significant effect on prescription decision in in public health institutions	.670* *	.263	.000	<i>Supported</i>

Survey result, 2022

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION SAND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of result and discussion of the collected data and it includes conclusion and recommendations of the study.

5.2 Summary of Study Findings

This study used correlation analysis to test the relationship between the promotion mix and the consequences of marketing challenges. The result shows that it has a significant relationship with the consequences of prescription decisions, and to make sure that it actually influences the consequences of prescription decisions, regression analysis has been conducted. The particular combination of direct marketing, personal selling, sales promotion, and advertising techniques a business employs to further its advertising and marketing objectives The mix of in-clinic advertising includes detailing aids, leave-behind materials, samples, gifts and prizes, and direct mailers. Clinical trials and studies, seminars, symposia, and roundtable discussions, sponsorships, movie screenings, commercials, public relations, free medical camps, corporate marketing, hospital and ward development initiatives, and e-marketing are all included in the out-of-clinic promotional mix. Industry professionals have been using pharmaceutical promotion tactics for decades. The study discovered using descriptive or response analysis that

Sales promotion and prescription decision ($r = .597, .000$) and confirmed its influence on prescription decision in public health institutions (Sig, 0.0001).

- The influence of direct advertising on prescription decisions in the health sector (Sig = 0.030) and the relationship between direct advertising and prescription decisions ($r = .464, .000$) were both confirmed.
- The relationship between public relations and prescription decisions ($r = .644, .000$) confirmed the influence of drug branding on prescription decisions (Sig, 0.0001).

- This study established a link between personal selling and prescription decisions ($r = .578, .000$) and confirmed the influence of Personal Selling on prescription decisions in the health sector (Sig, 0.0001).
- This study recognized the relationship between digital marketing and prescription decisions ($r = .670, .000$) and confirmed digital marketing's influence on prescription decisions in public health institutions (sig, 0.0001).

5.3 Conclusions

A pharmaceutical product's marketing is a difficult task because it deals more with people's lives. It is understood that the main feature of the pharmaceutical industry is that it is science- and technology-based. Consequently, the education of pharmaceutical sales personnel is extremely vital and should be based on scientific research and practices. Thus, this study concluded that sales promotion stimulates prescription decisions in public health institutions.

Foreign companies, including local manufacturers, have used various marketing strategies, such as forming joint ventures in manufacturing and marketing with multinational corporations to apply newer technologies, provide bulk drug products of world-class quality and amenities, conduct clinical trials, and so on. Thus, this study comes to the conclusion that direct advertising affects prescription decisions in the health sector.

Since then, Ethiopia's pharmaceutical industry has grown steadily; however, it should be noted that a global marketing, and manufacturing scenario should be developed and is critical. Currently, the marketing strategies of foreign companies and the consequences of marketing challenges have become severe and extremely complicated. Thus, it can be concluded that the public relations affects the prescription decision.

It is a big concern for the public as their marketing activities are more related to human life and the health of society. Overall, the pharmaceutical sector must focus on ensuring that people live excellent lives. To that end, the industry uses its resources more wisely and aims to fully satisfy all of its clients' needs. Thus, this study concluded that Personal selling is necessary for prescription decisions.

The use of digital channels—such as social media, search engines, mobile communication technologies, etc.—by the pharmaceutical sector has grown quickly in order to reach a wider audience of consumers. The study concluded that digital marketing highly affects prescription decisions.

5.4 Recommendations

- This study suggests that pharmaceutical businesses may be able to foresee and combat the marketing strategies of rivals based on the results of a scientific assessment of a competitive product. This is due to the fact that businesses in science-based industries promote their products through user and expert-focused marketing initiatives as well as scientific reviews.
- The research recommends that to highlight the expectations of a doctor from such promotional tools, companies make sure they have effective promotional tools and should involve doctors in the creation of marketing materials.
- The empirical analysis of doctors' prescription behavior in Addis Abeba's public institutions. Pharmaceutical managers should utilize the right promotional materials and target the group of doctors who are more influenced than the rest since they are aware that once prescribing habits are formed, it may be challenging to modify them. As a result, the pharmaceutical company maximizes its marketing expenses better than its rivals and boosts sales while spending less on promotions.
- Physicians should be made aware of and educated about the importance of balancing each of the marketing mix techniques through educational intervention and awareness campaigns. These initiatives make sense to all doctors, but especially to the high-risk groups impacted by marketing mix strategies.
- Companies may use resource materials and promotional materials in the local language as an alternative to replace restricted promotional activities, as it is forbidden to use TV and billboards. To highlight the expectations of a doctor from such promotional tools, companies make sure they have effective promotional tools and should involve doctors in the creation of marketing materials.

- The government may control and take appropriate action on media usage. Because social media has an impact on pharmaceutical marketing today, companies may use various media, which may have an adverse effect on society, particularly among young people who may be more vulnerable to its negative effects.

5.5 Recommendations for Future Studies

Future research can also fruitfully extend to add additional marketing mix variables such as processes and physical evidence, and it should also focus on market segmentation, targeting, and positioning strategies. They can assess the external predictive validity by forecasting annual transaction data in the face of a genuine future policy shift. It would also be valuable to test the strength of appropriate analysis methods by decomposing hypothetical market scenarios into different attributes. Future studies may study on the consequences of policy shifts, including several external and internal marketing challenge variables and the impact of companies' business decisions like reducing experts and withdrawing from the market.

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ANNEX

Annex I –Questionnaire

(Physicians Survey)

Greetings, Dear

I am Haimanot Girma, a post graduate student of Master of Business Administration at Addis Ababa University. I am carrying out a study on “*Effect of Promotional Tools for Pharmaceutical Products on the Prescribing Pattern of Physicians in the Case of Addis Ababa*”

It will be of great value if you can share your wealth of knowledge by completing the attached questionnaire. Your answers will be handled with highest anonymity and confidentiality; this will be achieved by no indication of names. The general objective of this research is to assess the pharmaceutical promotional tools effectiveness and their effectiveness on decision.

Please kindly return the completed questionnaire to me. Your participation will be highly appreciated.

Yours Sincerely

Haimanot Girma

Tel: 0913 268744

Part A: Personal Profile

Instruction – please tick appropriate answer you choose.

Your Age (in years)	Ages below 35 years or Young adults	☐
	Ages 36-55 years - Middle-aged adults	☐
	Older than 55 years - Older adults	☐
Your Gender - Sex	Male	☐
	Female	☐
Your Education Status	GP or First Degree	☐
	Specelality	☐
	Sub Specialist	☐
Please provide your work experience in health activities	Below 5 years	☐
	6 to 10 years	☐
	11 to 15 years	☐
	Above 16 years	☐
Please indicate or tick your most served health institution	Federal Hospital	☐
	Local Hospital	☐
	Health post	☐
	Others	☐

Part B: Main questions – Effectiveness of Promotional Tools

Instruction: For each of the following questions choose the appropriate answer.

Question 1 - How do you perceive and rate the following the Effectiveness of Promotional Pharmaceutical Tools in Ethiopia? Please encircle the number with the answer you choose or agree or disagree with each statement and tick (√) in a box to the correspondent number. Note: - 5= Strongly Agree, 4= Agree, 3= Disagree, 2= Strongly Disagree, 1= Neutral

Variables	Dimensions	1	2	3	4	5
Sales Promotion	I am interested in has well designed Trade Promotions of pharmaceutical companies.					
	I am fascinated about well-designed short-term visitors obtaining strategy of pharmaceutical companies.					
	I have received an extra benefit or Value promotions from pharmaceutical companies.					
	I believe my patients receive price promotion from pharmaceutical companies.					
	I consider free samples from pharmaceutical companies.					
	Effective demonstrations and product rehearsals are conducted by from pharmaceutical companies.					
Direct Advertising	I am fascinated with supplying of sufficient advertising materials (posters, brochures etc) by pharmaceutical companies.					
	I am charmed with quality of advertising materials of pharmaceutical companies.					
	I am interested in message of advertising					

	materials of pharmaceutical companies.					
	I am interested in content of advertising materials of pharmaceutical companies.					
	I am fascinated with language of advertising materials presented by pharmaceutical companies.					
Public relations	I trust the quality of products from their pharmaceutical brand information I obtain from CME.					
	I associate and admire branded pharmaceutical products with the right corporate image.					
	I prefer to a brand that fulfill ethical responsibilities with physicians and country.					
	I think pharmaceutical brands have has a reputation of high quality.					
	I can recognize the brand “X” quickly among other competing brands because I get sufficient information from CME and CPD presented by pharmaceutical companies.					
	I consider myself loyal to brands of pharmaceutical products because of their corporate social responsibility.					
	I attend symposiums and workshops organized by pharmaceutical companies to be more familiar with the brand of pharmaceutical products.					
Personal Selling	I am happy with Medical Representatives’ promotional activities.					
	I am happy with the promotional opportunity presented by Medical Representatives.					
	I am happy on the relationships with Medical					

	Representatives.					
	Good Medical Representatives Involvement will intend to simplify my job.					
	Respectable Medical Representatives Involvement will intend to ease my job.					
	I am happy with Medical Representatives' marketing strategies.					
	I trust Medical Representatives.					
	Recognition for my contribution goes to Medical Representatives' cooperation.					
Digital Marketing	Pharmaceutical companies provide timely information via social media.					
	Pharmaceutical companies provide relevant information via digital system.					
	I can easily access pharmaceutical companies' information supplies via electronic media.					
	I can obtain unique pharmaceutical companies' magazines, brochures, and other materials.					
	I can obtain clear message via social media accounts about pharmaceutical information.					
Prescription Decision	I am deciding what to prescribe.					
	I maximized the effect of the treatment strategy.					
	I value the promoted drugs immensely.					
	I have complete knowledge of the situation.					
	I will have unbiased knowledge of relevant options.					
	I am deciding what to prescribe for patients.					

	I have the ability to evaluate a situation and make the best possible choice.					
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Which factors are mostly conducted in pharmaceutical promotion effective activities?

How do you perceive and rate your prescription decision?

Thank you!

Annex IV- Interview Checklist

I am Haimanot Gima, conducting a research about Effect of Promotional Tools for Pharmaceutical Products on the Prescribing Pattern of Physicians in the Case of Addis Ababa?

I have a few questions about the research which takes 30 minutes. *Can I continue?* Thank You!

1. How do you express the pharmaceutical promotion, tools and techniques in Addis Ababa?
What about sales promotion, direct advertising, public relations, personal selling drug info availability?

2. What is/are the main effective factors you considered while considering in Addis Ababa pharmaceutical promotions?

3. Have you ever encountered any problem related to pharmaceutical promotions?

4. What are the effective of pharmaceutical promotion activities in Addis Ababa?

5. How do you evaluate the experience of pharmaceutical promotion activities and physicians' decision pattern?

Thank You!