



**ST. MARYS UNIVERSITY  
SCHOOL OF GRADUATE STUDIES  
MARKETING MANAGEMENT PROGRAM**

**Factors Affecting the sales volume.  
of Community Pharmacies  
in Addis Ababa**

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**January 24, 2024**

**Addis Ababa, Ethiopia**

**Appendix II**  
**ST. MARYS UNIVERSITY COLLEGE**  
**SCHOOL OF GRADUATE STUDIES**  
**FACULTY OF BUSINESS**

**FACTORS AFFECTING THE SALES VOLUME OF COMMUNITY PHARMACY IN  
ADDIS ABABA**

**BY**  
**NABAYT TSEHAYE**

**APPROVED BY BOARD OF EXAMINERS**

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Internal Examiner	Signature

**Appendix III**  
**DECLARATION**

I, the undersigned, declare that this thesis is my original work, prepared under the guidance of \_\_\_\_\_ . All sources of the materials have been duly acknowledged. I further confirm that the thesis has not been submitted either in part or in full to any other higher learning institution for the purpose earning of any degree.

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St. Mary's university, Addis Ababa

\_\_\_\_\_  
Signature

January 2024

**Appendix IV**  
**ENDORSEMENT**

This thesis has been submitted to St. Mary's university college, school of graduate studies for examination with my approval as a university advisor.

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\_\_\_\_\_

Advisor

Signature

St. Mary's university college, Addis Ababa

January 2024

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## **Acronyms and Abbreviations**

DOH	Department of health.
SEP	Special enrollment period.
EFMHACA	Food medicine and healthcare Administration and control Authority.
NGO	Non-Governmental Owned.



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## ABSTRACT

*The main objective of this study was to assess the factors that affects the sales volume of community pharmacies in Addis Ababa Ethiopia by using descriptive and explanatory research design. A researcher used a stratified sampling technique which is random sampling for the study. A total of 274 questionnaire were distributed to the pharmacists, druggists, and staffs of selected pharmacies in Addis Ababa. The response rate of 261 participants was responded which is 95.26% response rate achieved. Quantitative research approach was utilized for data analysis by collecting primary data from the sample respondents by using structured questionnaire. The study used correlation analysis and multiple Regression analysis by using SPSS version 23 present and analyses the collected data and the results presented using frequencies, percentages, mean, and standard deviations using tables. The findings of the study reveal that competition, efficiency, pricing and site/location had significant effect on sales volume of community pharmacies in Addis Ababa. But selling brand products was found to have insignificant effect on sales volume. Therefore, community pharmacies should pay attention to the factors that have significant effect on sales volume. ethical competition among competitors, understanding the weakness and strength of competitors, and competitive and reasonable pricing has a crucial effect on sales volume. Site/location has also a notable influence on sales volume in the industry.*

Key words: price, brand, site/location, competitors, efficiency and sales volume.

## **Chapter One**

### **1. Introduction**

This chapter provides a general introduction, to the study covered in this research proposal and provides a summary of the following content and key research outcomes. This chapter begins with the background of the study, statement of the problem, research questions, research objectives which are general and specific objectives, scope of the study, significance of the study, limitations of the study, and organizations of the paper which are included in the study.

#### **1.1 Background of the Study**

Many businesses in the world today are faced with fierce competition. Most have resorted to engaging in marketing activities that can boost sales and increase business revenue and profitability (Shiras&Ramu,2003). Businesses exist with the aim of maximizing profits and minimizing losses. Many businesses intend to become leaders in their market share and maximize sales volume.

Since 2004, the pharmaceutical industry has consistently been in the media spotlight. Much of the focus has been on the extraordinary profits earned by pharmacies and ways in which to curb these profits in order to make medicines available to the general public at the lowest possible cost.

Community pharmacies play a critical role in providing essential healthcare services and medications to local populations (Kahn, 2008). However the success and sustainability of these pharmacies are inherently tied to their sales volume, which is influenced by a multitude of internal and external factors. Understanding the dynamics that impact (Kahn 2011) the sales performance of community pharmacies is essential for optimizing their operations, strategic planning, and overall business success.

The sales volume of community pharmacies is influenced by various factors such as price, location, demographics, competition, branding, economic trends, marketing strategies and the

availability of products and services. Additionally, advancements in technology and changes in health care policies may also have a significant impact on pharmacy sales. (Doug Chung, 2009). Despite the importance of these factors, there is a gap in comprehensive research that identifies and examines the specific factors affecting the sales volume of community pharmacies. Existing literature often focuses on high-level market trends or specific marketing strategies, overlooking the holistic understanding of the multifaceted elements that contribute to sales performance.

Given the research in this domain, the study aims to analyze and identify the key factors that significantly impact the sales volume of community pharmacies. By conducting a thorough investigation into these factors, this research aims to provide valuable insights for pharmacy owners, managers, and stakeholders, enabling them, to develop targeted strategies to increase sales, enhance customer satisfaction and maintain competitiveness within the evolving healthcare landscape.

There are four categories of pharmacy in Ethiopia. These include hospital pharmacies, private owned community pharmacies, government owned community pharmacies, and non-governmental (NGOS) owned pharmacies. These entities are defined in the regulation relating to the practice of pharmacy (Food Medicine and Health care Administration and Control Authority (EFMHACA) 661/2009). The sales volume in the pharmaceutical industry can vary significantly among different types of pharmacies. The factors that will be presented below in the research paper can affect pharmacies in different ways. It's important to note that market dynamics, consumer preferences, and regulatory factors also contribute to the variation in sales volumes among different types of pharmacies. A graphic representation of the industry is included in Figure 1.1

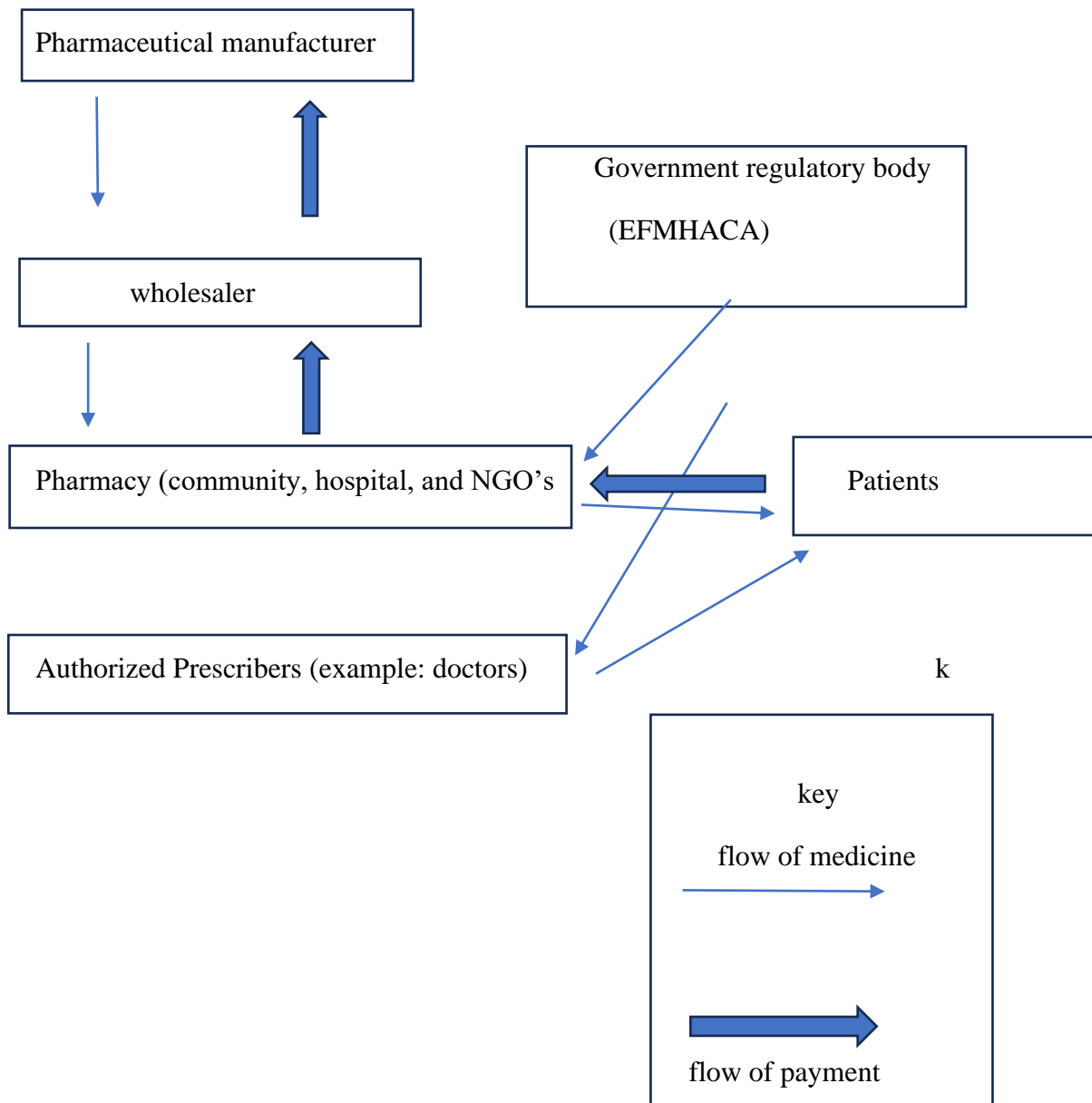


Figure 1.1 Graphical representation of the pharmaceutical industry in Ethiopia.

Source: EFMHACA annual magazine.

It is further important to note the change that took place in the pharmacy industry after the millennium of Ethiopian calendar. According to a report published by World health organization (WHO) 2019, the number of community pharmacies increased by 15% during

the period, while hospital pharmacies increased only by 2%. This is indicative of the fact that there are numerous community pharmacies entering the market, but the industry is not sufficiently attractive for new entrepreneurs due to low sales volume and high competition.

## **1.2 Statement of the Problem**

The sales volume of community pharmacies is influenced by various factors, including but not limited to location, competition, marketing strategies, customer demographics and economic trends. (M.Mayer et al. 2006). Understanding the specific factors that impact sales volume is crucial for pharmacy owners and managers to develop effective strategies for increasing revenue and remaining competitive within the market. However, limited research exists that comprehensively examines and identifies the various factors affecting the sales volume of community pharmacies. Therefore, this study aims to investigate and analyze the specific factors that significantly impact the sales volume of community pharmacies, providing valuable insights to price, site/location, brand, competitors, and efficiency of the employee.

(J. Atayeva et al. 2011) understanding the specific factors that impact sales volume is crucial for pharmacy owners and managers to develop effective strategies for increasing revenue and remaining competitive with in the market. However, limited research exists that comprehensively examines and identifies the various factors affecting the sales volume of community pharmacies. Therefore, this study aims to investigate and analyze the specific factors that significantly impact the sales volume of community pharmacies, providing valuable insights for pharmacy management and offering potential areas for improvement.

The purpose of this research paper would be to identify the economic trends factor affecting sales volume community pharmacy and to test the results relation between perceived organizational commitments, price, brand selling, , site/location of the Pharmacy, competitors, along with the other variables such as competency of the Pharmacist and so on. Most of the existing studies in this area focus on studying the services given in a community pharmacy. Hence, the central question to be addressed in this study is how significant the impact of the variables to the sales volume or profitability is.



### **1.3 Research question**

#### **1.3.1 Main Research question**

- The study will try to answer the factors that affect sales volume in a community Pharmacy.

#### **1.3.2 Sub Research question**

- what is the effect of price on sales volume of community Pharmacies?
- how does selling brand products affect the sales volume of community pharmacies?
- to what extent does the site/ location of the pharmacy affect the sales volume of the community pharmacies?
- what is the effect of employee efficiency on sales volume in community pharmacies?
- what is the effect of competitors on the sales volume in a community Pharmacies?

### **1.4 Research Objective**

#### **1.4.1 General objective**

The general objective of the study is to explore the factors that affect sales volume in community pharmacies at Addis Ababa.

#### **1.4.2 Specific Objective**

- To explain the effect of price on sales volume in community pharmacies.
- to examine the effect of selling brand products in community pharmacies.
- . To examine the effect of site/location on the sales volume of the community pharmacies.
- to investigate the effect of employee efficiency of the pharmacy on the sales volume of community pharmacies.
- To investigate the effect of competitors on sales volume in Community Pharmacies.

### **1.5. Significance of the Study**

The research tries to provide a clear picture on the accessing determinants of the sales volume of community pharmacies in Addis Ababa. The study is expected to identify the key factors that affect the sales volume of community Pharmacies and based on the findings of the research for those community pharmacies which are not doing well in generating the expected revenue, it suggests mechanism for improvement and intention of suggesting mechanism for enhancing and improving the sales volume.

### **1.6. Scope of the Study.**

- The study focuses on the assessment of the factors affecting the sales volume of community pharmacies in Addis Ababa. Geographically this research is carried out in Addis Ababa, specifically from all kifle ketemas. The research is done through Random sampling method, as most of the target populations with visible reality for anyone are located in these areas. The study participants will restrict to those who are community pharmacies dispensing pharmacists and druggists. This means scope of the study is limited to pharmacists and druggists who dispense at the front desk in the community pharmacies.

### **1.7. Limitations of the Study**

This study has only been performed in Addis Ababa at the selected community pharmacies. This will influence the results that it can't consider to the other towns and cities of the country. The study result doesn't represent the viewpoints of other pharmacists or druggists outside Addis Ababa. The instrument used in performing the research was a questionnaire which, based on its nature, has inherent limitations when performing research. Various limitations and challenges encountered during the study. Among these factors lack of support from respondents in filling out and returning the questionnaire which resulted in a significant delay in finalizing the study.

### **1.8. Organizations of the Study**

- The study will be structured or organized as follows: chapter one; will contain introduction to the study, chapter two; will present the previous studies /literature review/. Chapter three will explain the methodology of the study. Analysis, findings, and results will be presented in chapter four and chapter five; will present the conclusion, summary, and recommendation of the results.

## **Chapter Two**

### **Review of related literature**

#### **2.1. Introduction**

This chapter reviews the issues concerning sales volume which supplies an insight into the area of the study. In this chapter, the theoretical, empirical, and conceptual literature which concentrates on the research objective is reviewed below.

#### **2.2. Theoretical review**

##### **2.2.1. Sales volume**

Sales volume refers to the quantity or number of goods or services sold by a company or individual within a given period. It is a measure of the total units or amount of a product or service that has been sold during a specific time frame, typically expressed in terms of the number of units sold or the revenue generated. (Donny Kelwig , 2022)

Sales volume is a measure of growth embedded in the adoption of a particular marketing strategy adopted by a firm, expressed in unit or quantity of what is sold. A company's ability or its managerial power is expressed by sales volume. According to Marquis (2015) the strength of a company is expressed in sales volume among other parameters.

Some organizations measure growth (sales volume) in terms of net profit, revenue and other financial data, other business owners may use one of the following criteria for accessing their growth: sales, number of employees, physical expansion, success of a product line, or

increased market share. Sales volume is the sum total of factors including gross sales returns. Sales volume can likewise be measured in terms of margin profit, numerical distribution. Birley and Westhead (1990)

Sales volume in the context of marketing refers to the total quantity or number of products or services sold by a company within a specific period. It is a measure of the overall sales performance and indicates the level of customer demand for a particular product or services. Sales volume is typically measured in units, such as the number of items sold, or in monetary terms, such as revenue generated from sales. It provides insights into the effectiveness of a company's marketing and sales efforts, as well as the customers' response to the product or service being offered. (Atman, HJ Van Heerde 2010)

It is important to note that sales volume is just one aspect of measuring sales performance. Other metrics, such as profit margin, customer acquisition cost, and customer retention rate, should also be considered to gain a comprehensive understanding of a company's sales effectiveness and overall financial health. (RA Olivia 2006)

Monitoring sales volume is crucial for business as it helps determine the success and profitability of their marketing strategies by analyzing sales volume data, companies can identify trends, patterns, and fluctuations in consumer demand and make informed decisions regarding production, pricing, inventory management and marketing campaign. Monitoring sales volume allows business to understand their market share and compare it to competitors. It also provides insights into consumer behavior, helps forecast future sales, and assists in financial planning and budgeting. Increasing sales volume is often a key objective for business as it shows the current position of the business. (IK Suardik, Ms Dewi 2021)

Sales volume variance (also called sales quantity variance) is the variance that shows the difference between the actual number of units sold and the budgeted or expected number of

units sold. It measures the impact of the difference in sales volume on the actual revenue generated. If the sales volume is higher than the expected number of units, the sales volume variance is favorable, which means that the company generated more revenue than anticipated. On the other hand, if the sales volume variance is unfavorable, which means that the company generated less revenue than anticipated. (Malcom 1978)

### **2.2.2. Definitions of sales volume.**

Sales volume refers to the quantity or number of products or services sold within a given period. Scholars and experts in the field of business and marketing have provided various definitions of sales volume. Here are a few definitions from scholars.

- **Philip Kotler:** Philip Kotler, a renowned marketing expert, defines sales volume as “the total number of units of product or service sold by a company within a specific time period, usually measured in terms of quantity or revenue.” (Philip Kotler and Kevin Lane Keller 12<sup>th</sup> ed, 2006)
- **William J. Stanton:** according to William J. Stanton, an influential marketing scholar, sales volume is,” the total number of units of a product or service sold by a company within a specific time period, usually measured in terms of quantity or monetary value”. (William Winston, John L. Stanton, Robert E. Linneman Routledge, 2020)
- **Richard L. Sandhusen:** Richard L. Sandhusen, a marketing professor defines sales volume as “the total number of products or services sold by a company within a given period of time, usually measured in terms of physical units or revenue.” (Richard L. Sandhusen 2003)
- **Donald R. Lehmann and Russell S. Winer:** Lehmann and Winer, in their book” Analysis for marketing planning” 7<sup>th</sup>ed ISBN 0071263632 defines sales volume as

“the total number of units or the total dollar amount of sales of a specific product or service sold during a given period.”

These definitions highlight the common understanding that sales volume represents the quantity of products or services sold by a company over a specific time frame, often measured in terms of physical units or revenue generated.

- Donny Kelwig defines sales volume as “the number of units sold during a specific reporting period. It could be a month, a quarter, or a year.” (DonnyKelwig , 2022)

Sales volume is a term commonly used in business and marketing to refer to the total number of units of a product or service sold within a given period. While there, may not be specific definitions of sales volume by different departments, I can provide you with general explanations and interpretations of sales volume from various perspectives.

- **Business and Economics:** in the field of business and economics, sales volume is the total quantity of goods or services sold by a company during a specific period, typically measured in units or dollars. It represents the aggregate demand and reflects the overall performance and market share of a business. (Haslindah and Hamdat 2021)

- **Marketing:** in marketing, sales volume refers to the total number of units sold of a particular product or service within a specific period.

It helps marketers assess the success of their marketing strategies, measure market penetration, and evaluate consumer demand for their offerings. (Ataman and Van Heerde 2010)

- **Accounting:** from an accounting standpoint, sales volume represents the revenue generated by a business through the sales of its product or services. It is typically calculated by multiplying the quantity of units sold by the price per unit. (Hertati, L Pusputawi and R Ganitino 2021)

- **Retail and wholesale:** in the retail and wholesale sectors, sales volume refers to the total quantity of products sold by a retailer or wholesaler during a given period. It is a metric for evaluating inventory turnover, analyzing product performance, and determining the profitability of the business. (VR Kamat, M Nichter 1998)
- **Supply chain management:** in the context of supply chain management, according to (S. Thomassey 2010) sales volume can be understood as the amount of goods or services sold by a company within a specified time frame. It plays a crucial role in forecasting demand, managing inventory levels, and optimizing production and distribution processes. -It's worth noting that while the concept of sales volume remains consistent across different disciplines, the specific calculations and measurements may vary depending on the industry, company, or analytical approach used.

### 2.2.3. Approaches to sales volume Analysis.

Sales volume analysis involves studying and analyzing the factors that impact the quantity of products and services sold by a business within a given period. (KB Walker, CF Bain journal of management accounting 1989). It helps organizations understand sales patterns, identify trends, and make informed decisions to improve sales performance.

- **Historical analysis:** this approach involves analyzing past sales data to identify trends, patterns, and seasonality. By examining historical sales volumes, businesses can identify peak periods, sales fluctuations, and any long-term growth or decline trends.
- **Comparative analysis:** comparative analysis involves comparing sales volumes across different periods of time, regions, or products. By comparing sales data, organizations can identify variations and spot areas of opportunity or concern. For

example, comparing sales volumes between different regions can help identify high performing markets or areas that need improvement.

- **Market segmentation analysis:** this approach involves dividing the market into distinct segments based on characteristics such as demographics, geographic location, or customer behavior. Analyzing sales volume within each segment allows business to understand which customer groups contribute the most to sales and tailor their strategies accordingly. (Philip Kotler and Kevin Lane 12<sup>th</sup> ed.)
- **Product analysis:** product analysis involves examining sales volumes for individual products or product categories. This analysis helps organizations understand which products are driving sales and identify any underperforming products that may require attention. It can also inform decisions related to product development, pricing, and marketing strategies.
- **Sales channel analysis:** business often sell their products through multiple channels such as brick-and-mortar stores, online platforms, or third-party distributors. Analyzing sales volume by channel helps identify the most effective distribution channels and optimize resource allocation. It can also reveal opportunities for channel expansion or improvement.
- **Competitive analysis:** studying sales volumes of competitors can provide valuable insights into the market landscape. By comparing sales volumes with competitors, businesses can assess their market share, identify areas of competitive advantage or weakness, and adjust their strategies accordingly.
- **External factors analysis:** sales volume can be influenced by various external factors such as economic conditions, industry trends, consumer behavior, or marketing campaigns. Analyzing these external factors in conjunction with sales data can help



businesses understand their impact on sales volume and make informed predictions and adjustments.

- **Forecasting and predictive analysis:** using historical sales data and incorporating relevant variables, organizations can develop predictive models to forecast future sales volumes. These models can help businesses plan inventory, set sales targets, and make data-driven decisions. (Cheriyana, S. Ibrahim, S Mohanan 2018)

These approaches are not exhaustive, and businesses may combine multiple methods or tailor them to their specific industry and objectives. The goal is to gain actionable insights from sales volume analysis to drive business growth and improve overall sales performance.

#### **2.2.4. Sales volume models.**

Sales volume models are mathematical or statistical models that aim to predict the future sales volume of a product or service. These models are typically developed using historical sales data and other relevant factors that may influence sales. The goal is to analyze past patterns and trends in sales data to make predictions about future sales performance. There are various models that businesses use to estimate and predict sales volume. These models can help organizations make informed decisions regarding production, inventory management, and overall business planning. The choice of models depends on various factors, such as the nature of the business, available data, and the level of accuracy required. Here are a few commonly used models:

- **Time series models:** time series models, such as ARIMA (Auto regressive integrated moving average) or SARIMA (seasonal ARIMA), are often used to analyze and forecast sales volume overtime. These models consider historical sales data and account for trends, seasonality, and other patterns in the data. (B Predic N Radosavljevic 2020)

- **Regression models:** regression analysis can be used to understand the relationship between sales volume and various factors that influence it, such as price, advertising expenditure, and market size. Multiple regression models, such as linear regression or logistic regression, can help estimate the impact of these variables on sales volume. (X Lu, Z Geng 2011)
- **Machine learning models:** machine learning algorithms, such as random forests, gradient boosting, or neural networks, can be used to predict sales volume based on historical data and a wide range of input features. These models can capture complex relationships and non-linear patterns in the data. (Cadavid, S Lamouri, and B Grabat 2018)
- **Market research models:** market research techniques, such as conjoint analysis or choice modeling, can be employed to understand customer preferences and predict sales volume based on different product attributes and market conditions. (S Klein, GL Frazier, VJ Roth 1990)
- **Hybrid models:** hybrid models of sales volume typically refer to approaches that blend different methodologies or models to forecast or analyze sales volumes. These models leverage the strength of various techniques to improve accuracy and account for different factors impacting sales. For example, a hybrid model may incorporate elements of time series analysis with external variables, ensemble models, statistical with machines (regression analysis and machine learning algorithms), qualitative and quantitative models and rule based with predictive models to capture different aspects of sales volume dynamics.

It's important to note that the selection and effectiveness of a particular model depends on the specific context and data available. Often, a combination of models or an iterative

approach may be required to obtain the most accurate predictions of sales volume. (Jemur and Yildiz 2021)

### **2.2.5. Dimensions of sales volume in retail.**

An understanding of the dimensions of sales performance which indicates performance level of each salesperson is essential for both managers and researchers in sales and marketing.

(Damnjanovic, V, and Kulj, D, 2005) believe that, according to method of evaluation, there are two types of criteria: qualitative and quantitative performance criteria. Quantitative criteria are numeric, and they relate to number of new customers obtained, sales volume, average sales calls per day, gross profit by product /customer, sales order. Many organizations use qualitative performance criteria because they represent the salesperson's major job activities, and they indicate why the quantitative measures look as they do. Qualitative performance criteria are characteristics, behavior or results of a salesperson which can't be expressed in numbers and quality of these criteria may depend on subjective evaluation of reviewer.

In retail, sales volume refers to the quantity of goods or services sold during a specific period. It is an important metric that helps retailers understand the scale of their business activities and measure their performance. Sales volume is typically analyzed in various dimensions to gain deeper insights into the retail operations. Here are some common dimensions of sales volume in retail:

- **Time dimension:** Sales volume can be analyzed over different time periods, such as daily, weekly, monthly, quarterly, or annually. This analysis helps retailers identify sales trends, seasonal patterns, and measure the impact of marketing campaigns or promotions.

- **Product dimensions:** sales volume can be examined for individual products or categories of products. By analyzing sales volume by product, retailers can identify top-selling items, assess product performance, and make informed decisions about inventory management, pricing, and assortment strategies.
  - **Store dimensions:** sales volume can be measured for individual stores or groups of stores. Retailers can compare Sales volume across different store locations to identify top-performing stores, assess the impact of store size or location on sales, and allocate resources effectively.
  - **Customer dimension:** sales volume can be analyzed based on customer segments or individual customers. By understanding sales volume per customer, retailers can identify their most valuable customers, analyze purchasing behavior, personalize marketing efforts, and implement customer retention strategies.
  - **Geographic dimension:** sales volume can be analyzed based on geographic regions, such as countries, cities, or even a specific area within a city. This analysis helps retailers identify regional sales patterns, tailor marketing strategies to local preferences, and optimize distribution and logistics operations.
  - **Channel dimension:** sales volume can be examined across different sales channels, including brick- and-mortar stores, e-commerce websites, mobile apps, or third-party platforms. Analyzing sales volume by channel helps retailers understand channel performance, allocate resources appropriately, and optimize multichannel strategies.
- By analyzing sales volume in these dimensions, retailers can gain valuable insights into their business performance, identify growth opportunities, and make data-driven decisions to drive sales and profitability.

### **2.3. Empirical literature review**

In many countries, health reform has been ongoing agenda (Hermanseyah, Sansubury and Kras 2018). pharmacists is crucially needed to change the current pharmacy practice (Atiyah et al., 2019). In order to create a more professional climate for pharmacy practice, some fundamental and entrenched barriers to practice will need to be overcome. (Hermansyah, Sainsbury and Krass, 2018) several challenges are hampering the sustainability of pharmacy services delivery in the setting of primary care (Hermanseyah et al., 2020). Therefore, the need to strengthen pharmacy competitiveness is pivotal in terms of business perspectives.

Pharmacies are a place of a service for the pharmacists' profession, have social function as well as a business function. The tight competition, changes in consumer tastes, technological advances, price, employee efficiency, and socio-economic changes also require pharmacies to make more improvements in order to carry out both business and social function properly.

The social function of the pharmacy can't run well without the support of smooth business function. One of the measuring tools for the success of a pharmacy in carrying out its business function is the amount of sales volume (turnover). There are strong positive relationships between total sales, company efficiency and profitability.

(Alarussi and Alhaderi, 2018; Nasutien, 2020).

Employees in community pharmacies play a far significant and distinct role since employee performance of a community pharmacy influences customer loyalty (Rabbane Burform and Ramaseshan, 2015). Trust in pharmacists leads to satisfaction and finally affects store loyalty (Castaldo et al.; 2016; Nitadpakorn Farris and Kittisopee, 2017). Loyalty will increase along sales advocacy and improve pharmacy competitiveness (Dung, 2019). Customer loyalty can be achieved through the high efficiency of the employee working in the pharmacy especially the pharmacists and pharmacy technicians.

The function of pharmacies dominantly shifts to business orientation (Novianita, Sutarsa and Adiputra, 2016) it is necessary to be conscious of the factors that affect the success of the pharmacies as business units in order for pharmacy owners to maintain their pharmacies growth as business units.

One of the major factors of pharmacy profitability is prescribing and purchasing patterns in which for any patented or branded medication that is produced there is usually an active ingredient in the medicine and is used within the same therapeutic class as the patented (branded) medicine. The main difference is that the price of a generic one is less than the branded or patented medicine. To hold all medicines, both generic and branded, would have a major impact on the holding cost of the pharmacies. This would, in turn, have an impact on the average inventory holding of the pharmacy. Thus, studying the prescribing and purchasing patterns of the customers may give competitive advantage in making large sales volume (Pioch and Schmidt, 2001)

Most of the existing studies explain the influence of internal factors on the social side of pharmaceutical services, such as customer satisfaction, customer loyalty, quality of pharmacies (Nitadpakron Farris and Kittisopee, 2017; Dung 2019; Salen et al., 2020) according to authors studies on various relevant original articles, there has been no research directly explains the factors that influence pharmacy sales turnover as an indicator of business success. This study aims to determine the factors that affect pharmacy sales turnover as an indicator of business success. This study aims to determine the factors that affect pharmacy sales turnover, assuming the pharmacies included in this study have the same facilities and management standards. Factors studied include price, selling branded or patented drugs, site of the pharmacy, employee efficiency (pharmacist and pharmacy technicians), and customer preference.

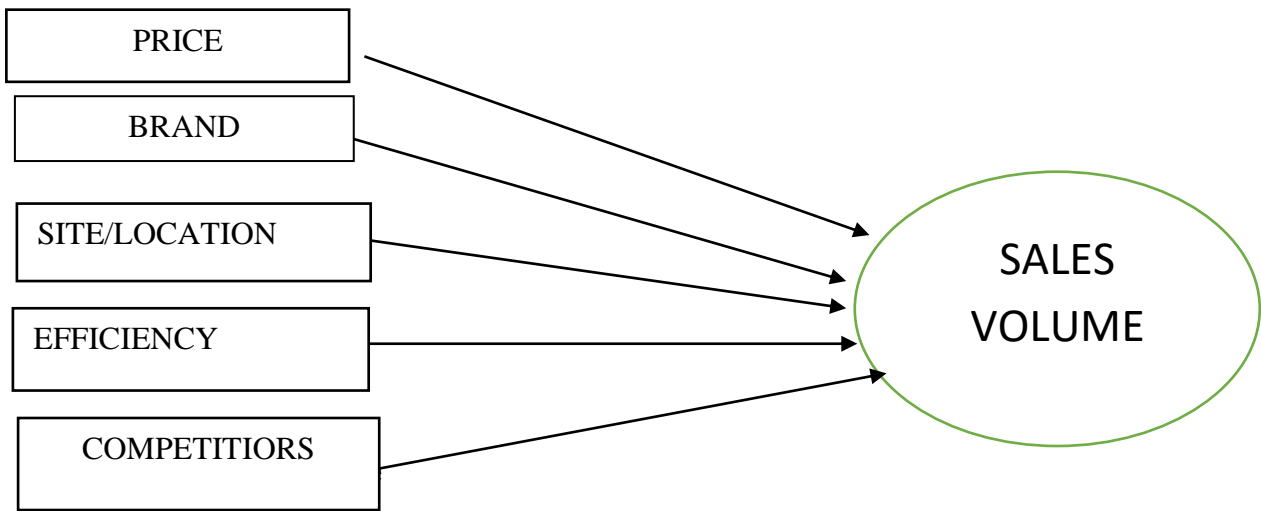
Thus, the study result can be used as a reference for pharmacy managers or owners to increase sales volume (turnover) through improved pharmaceutical services.

## **2.4. Conceptual framework and hypothesis development**

### **2.4.1. Conceptual framework**

The researcher designed this framework based on the theories in the literature review. Sales volume has been defined as the quantity or number of goods or services sold by a company or individual within a given period. It is a measure of the total units or amount of a product or service that have been sold during a specific time frame, typically expressed in terms of the number of units sold or the revenue generated. (Donny Kelwig, 2022).

This research tries to assess the sales volume of the community pharmacy in the case of Addis Ababa. The dependent variable in the research is sales volume which this research study intends to examine effectiveness of each of the independent variables and their facets on the sales volume and the independent variables are price, brand, site/location of the pharmacy, efficiency of employee, and competitors. The study tries to find out the gap which is seen in the community pharmacies.



**Fig 2.1 conceptual framework of the study.**

**Source: modified and adapted from (wansink, chandon& Laurent,2000)**

#### **2.4.2 Hypothesis development**

In order to attain the motive of this study the following hypothesis are observed to be tested

H<sub>1</sub>-Price has a positive and significance influence on sales volume.

H<sub>2</sub>-Selling brand medicine and cosmetics has a positive and significant influence on sales volume.

H<sub>3</sub>- Site of the pharmacy has positive and significant influence on sales volume.

H<sub>4</sub>- Employee efficiency has a positive and significant influence on sales volume.

H<sub>5</sub>-Competitors have a positive and significant influence on sales volume.



## **Chapter Three**

### **Research Design and Methodology**

#### **3.1 Introduction**

This chapter will describe the purpose of developing an appropriate research methodology and will consider the research design to determine how the data links to the research questions proposed. Subsequently, a description of the population will be provided together with the associated sample and the sampling technique used. The process of data collection will then be considered as well as the development of the research instrument. The methods applied to analyze the variables and test the research hypotheses will be provided. Finally, the validity and reliability of the testing instrument will be considered.

#### **3.2 Research methodology**

Research methodology normally forms part of three broad categories: quantitative research, qualitative research, and mixed methods approach. Quantitative research is a method that is used when the researcher intends to quantify a specific phenomenon and measure specific values or variables. Qualitative research is used in research where the problem cannot be easily reduced to numerical values and the item being tested is complex in nature (Leedy & Ormrod, 2010). In contrast, a mixed methods approach makes use of elements of both of these broad categories to develop a complete picture of a situation where it is possible to decompose the research question into numerical elements and qualitative elements.

In order to perform the research a method needs to be constructed in order to collect the appropriate data. This data must then be linked appropriately to the research question. This will allow for conclusions to be drawn (Rowley, 2002).

An adequate understanding of one's research design is important for answering the research questions posed. Firstly, it allows the researcher to understand whether the design is adequate for addressing the research questions. Secondly, as with all research methods, there are

inherent limitations to a specific approach which need to be considered when drawing conclusions on any findings identified. Lastly, each research design has certain advantages and disadvantages associated with it. This may relate to the ease of execution, the target group, and the availability of literature.

### **3.3 Research design**

There are a number of different methods that exist under quantitative research. These include experimental research, grounded theory, action research, case study research and survey research to name a few (Leedy & Ormrod, 2010).

This paper is not a paper on research design, however, and, as a result, only the research method selected under quantitative methodology has been explained.

The research method used is survey research. Although survey research is often misunderstood in the literature, this specific research method is intended to obtain information from a group of people by making use of a list of questions. Surveys can be conducted using pen-and-paper questionnaires or face-to-face interviews or can be administered online. Accordingly, a questionnaire can then be administered to the sample that is willing to participate in the research. The nature of survey research is such that it takes a snapshot of the state of a phenomenon at a certain point in time. This snapshot is then used to draw conclusions and these conclusions are then assumed to represent a longer period of time (Leedy & Ormrod, 2010).

However, it should be noted that such assumptions or inferences can be dangerous as, owing to the nature of the sample and the time period, there may have been external factors which were not considered as part of the research and that might have affected the ability to infer the conclusions to the population or time period.

Quantitative data will be used in designing the research. The proposed study is casual and exploratory in nature. A survey questionnaire will be conducted to determine the factor that affects the sales volume of community pharmacies.

### **3.4 Research Approach**

To achieve the purpose of this study, a quantitative research approach was adopted. Saunders, Lewis, and Thornhill (2003) asserted that the quantitative research approach is used for testing objective theories by examining the relationships between variables.

The objectives of quantitative research are to answer the proposed pre-determined research questions/hypotheses and to produce general results about a given population in a given academic research area. A survey was used in order to gather information. According to (Opoku, Ahmed, & Akotia, 2016), this survey method allows for the collection of quantitative data from a large population, which can be used to suggest possible reasons for specific relationships between variables of interest.

### **3.5 Population**

#### **3.5.1 Source Population**

All community Pharmacy employees and who are working in a community pharmacy in Addis Ababa town will be the source population for the study.

#### **3.5.2 Target Population**

The target populations are pharmacists who are at the front desk /dispensers/ of the community pharmacy. Currently in Addis Ababa there are around 308 community pharmacies (Getahun Asmamawe, Nahu Ejigu and Woundime Ayenew 2022) with 871 pharmacists and druggists available (Fikreselam Habte and Mekdes Shifa 2023). Of all pharmacies available in Addis Ababa town, from each 11 administrative zones, using google maps to track down the pharmacies, simple random sampling technique will be used to gather the data.

### **3.6 Sample size and sample Technique**

A sample represents a subset of the population as it is usually not possible to test the entire population. The sample should be sufficiently representative of the population so that inferences can be made to the population (Leedy & Ormrod, 2010). The population sample focused on community pharmacies in Addis Ababa.

In order to determine the appropriate sample size (Yemane Taro, 1967) simplified formulas were used. This formula helps to determine the sample size of a finite population. If the population is finite, it should be corrected to a desired level of precision. Researchers say that the choice of the sample size is made after considering available resources like money costs and time. Because of this the researcher wants to take the sample size from the staff of pharmacies who are the major participants in the research paper.

N = standard target

Accordingly, the formula is  $n = \frac{N}{1 + N(e)^2}$

N= Population Size

n=sample size

e= the desired level of precision (in this case 0.05)

Questionnaire will be distributed to the Pharmacists of different community pharmacies . The method of sampling used will be simple Random Sampling (Probability Sampling Technique). The pharmacists who work in the same Pharmacies work into shifts, morning, and night shifts so the questionnaire will be distributed to these groups accordingly.

### **3.7. Data Type and source of population.**

Quantitative data will be gathered through primary data collection methods. All community pharmacy employees especially who pharmacists and druggists are working in a community pharmacy at Addis Ababa will be the source population for the study.

### **3.8 Method of data collection**

The study will employ primary and sources of data to meet the desired objective. Primary data will be gathered using structured questionnaire.

The use of multiple data collection techniques will increase the quality and validity of the data. Secondary data will constitute previous studies literature in the area which would inform and enrich the present study. Data collection will be completed within the 5-10 days period. Before starting to distribute the questionnaire, the respondents will be briefed about the purpose of the study and get their informed consents.

### **3.8 Data Analysis**

In the study, the information was gathered through primary source using quantitative method, by distributing questionnaire will be analyzed. The data which is collected through questionnaires from the staff of community pharmacies, will be analyzed by quantitative tools such as tables and percentages.

### **3.9. Ethical issues**

Ethical consideration (issues) is a set of principles that guide your research designs and practices. Scientists and researchers must always adhere to a certain code of conduct when collecting data from people (Pritha Bhandari, 2021)

The study is ethically clear form St. Mary university school of graduate studies department of marketing management. The researcher uses data which is collected through a questionnaire; permission is obtained from the respondents (pharmacists and druggists). To maintain the confidentiality of the information provided by the respondents, the respondents instructed not to write their names on the questionnaire and assured of that the responses are used only for academic purpose and kept confidential. Finally, respondents are included in the study based on their free will.

### **3.10. Validity and reliability**

When performing research using a questionnaire, the validity and reliability of the data obtained can be threatened. One reason for this is the fact that if the questionnaire is not appropriately designed, it is possible that the data obtained will not be reliable. This can happen when the constructs being used to collect the data are not applied consistently (Wagner et al., 2012). However, if the research instrument is valid, the questions included in the questionnaire will address the proposed hypothesis (Leedy and Ormrod, 2010) although there are various types of validity and reliability measures, only those that are appropriate instrument used in this study will be considered here.

#### **3.10.1 Validity**

There are four main types of validity: Face validity, Content validity, Criterion validity and Construct validity. The questionnaire in this study appears to have some degree of face validity as the questions were developed from the research questions proposed. The questionnaire also has a level of content validity too. In order to attain this validity, certain elements were verified with my colleagues prior to the questionnaire being administered to a larger sample.

#### **3.10.2. Reliability**

Reliability refers to the consistency of the results produced by the research instrument. For example, a test is reliable if the same results are produced for the test when performed by the same people on a different day (Leedy and Ormrod, 2010). This type of reliability is referred to as test and re-test reliability. The research tool in this study, however, makes use of an internal measure of reliability. Accordingly, the questions at the end of the questionnaire request percentage data relating to where the pharmacist and drugist believes the revenue in the pharmacy is earned and the number of scripts and the value of these scripts. The use of this data, that is, average turnover of the pharmacy for a year and a month, can be compared

to the answers provided in the tick-box questions. Hence, if there is a high correlation, this would indicate reliability.

In addition, in order to enhance the reliability of the tool, it will be administered to each participant in the same standard way. Accordingly, it will be presented to the pharmacists and druggists responsible for its completion who then completed the questionnaire without any help from or guidance from the researcher.

## **Chapter Four**

### **Results and Discussions**

#### **4.1 Introduction**

This chapter presented the data analysis, presentation, and interpretation of the findings on the data collected from the staffs of selected community pharmacies in Addis Ababa. The main objective of the study is assessing the factors that affect community pharmacy sales volume in Addis Ababa.

The study took 274 samples from the staffs of selected community pharmacies in Addis Ababa. From these the result was based on 261 returned questioners from staff. The rest of the questionnaires were not returned the responses of the staff gathered by questionnaires were encoded in SPSS version 23 software. Each response collected from respondents was given a particular code. After the descriptive analysis made, the results are presented using frequencies, percentages, mean, and standard deviations using tables.

#### **4.2 Response Rate**

The researcher distributed 274 questionnaires for selected staff of selected community pharmacies in Addis Ababa and collects back 95.26% of the questionnaires returned, the rest of 4.74% were not returned back. Based on the above information the analyses are done using 261 returned and complete questionnaires.

### 4.3 Reliability of the survey

Reliability is a measure of construct that outcomes are assessed with relatively little measurement error. To test the reliability of the questionnaire a pilot survey was used. In the pilot test 274 questionnaires were approached and 261 were collected from the staffs of selected community pharmacies in Addis Ababa. The internal consistency (the reliability of the constructs) of each of the attribute dimensions or factors affecting the sales volume of community pharmacies in Addis Ababa are tested. The researcher applied Cronbach's Alpha reliability analysis. Cronbach Alpha is a coefficient of reliability used to measure the internal consistency of the scale. The results showed that the Cronbach Alpha coefficients for all the dimensions are more than 0.7 indicating that the reliability of the instrument is high.

**Table 4.1 Reliability test**

<b>Dimensions</b>	<b>Cronbach's Alpha</b>	<b>N of Items</b>
price	.966	6
Brand	.959	5
Site/location	.980	4
Efficiency	.981	3
Competitors	.972	4

Source: survey 2024

The results showed that the Cronbach Alpha coefficient for price is 0.966 indicating that the reliability of the instrument is high. The results indicated as the Cronbach Alpha coefficient brand is 0.959 indicating that the reliability of the instrument is high. The results showed that the Cronbach Alpha coefficient for site/location is 0.980 indicating that the reliability of the instrument is high. The results showed that the Cronbach Alpha coefficient for efficiency process is 0.981 indicating that the reliability of the instrument is high. The results showed that the Cronbach Alpha coefficient for competitors is 0.972 indicating that the reliability of the instrument is high.



#### 4.4 Demographic Characteristics of Samples

This part pointed out the respondent's gender, age, education level and working experience of the staffs those who were participating in the responding of questioners.

**Table 4.2 Demographic Characteristics of Samples**

Variables	Categories	Frequency	Percent (%)
Gender	Male	173	66.3
	Female	88	33.7
	Total	261	100
Age	18-25 years	32	12.3
	26-30 years	80	30.7
	31-35 years	56	21.5
	36-40 years	62	23.8
	Above 41 years	31	11.7
	Total	261	100
Educational Level	Under diploma	4	1.5
	Diploma	16	6.2
	Degree	201	77.0
	2 <sup>rd</sup> degree and above	40	15.3
	Total	261	100
Experience	1 - 5 years	89	34.1
	6-10 years	66	25.3
	Above 11 years	106	40.6

	Total	261	100
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Source: survey 2024

According to the above table 4.2 among the participants on the responding of the questioner 173 (66.3%) were males and the rest 88 (33.7%) of the respondents were also females. It indicates that most of the respondents were males.

As indicated in the above table the age of the respondents 18-25 years' experience has covers 32 (12.3%) from the respondents, 80 (30.7%) of the respondents were within the age of 26.30 years, 56 (21.5%) of the respondents were within the age of 31.35 years, 62 (23.8%) of the respondents were within the age of 36.40 years and the rest respondents 31 (11.7%) above the age of 41 years. It shows that the staffs those who are working in the pharmacies were adults.

As shown the above table 4.2 the education levels of the respondents under diploma were 1.5% (4), diploma holders were 6.2% (16), 1<sup>st</sup> degree holders were 77.0% (201) of the whole respondents and 2<sup>nd</sup> and above degree holders also 15.3% (40). It indicates the majorities of the staffs in the pharmacies are educated and have better understanding levels.

Finally, as indicated in the above table the experiencing level of the respondents less than 1-5 years' experience has covers 89 (34.1%) from the respondents, 66 (25.3%) of the respondents were within the experience of 6-10years, 106(40.6%) of the respondents were above the experience of 11years. It shows that the staffs those who have working in the pharmacies were well experienced.

#### **4.5 Descriptive Analyses**

This part of the paper describes the finding of the respondent's perception towards the factors affecting the sales volume of community pharmacies in Addis Ababa. Descriptive statistics is

done in the form of Frequency, Percentage, mean and standard deviation for the collected data and it is presented as follows.

#### 4.5.1 Descriptive analyses related to price.

**Table 4 .3 Analysis related to price**

Price	Cate.	SA	A	N	DA	SDA	Mean	S.D
Competitive and reasonable prices can affect sales volume	Freq.	13	118	58	57	15	2.78	1.028
	Perce.	5.0	45.2	22.2	21.8	5.8		
Offering generic alternatives at a lower price can affect sales volume	Freq.	11	97	101	37	15	2.80	.936
	Perce.	4.2	37.2	38.7	14.1	5.8		
Perception of fair pricing and value for money can affect sales volume	Freq.	3	39	33	155	31	3.66	.913
	Perce.	1.1	14.9	12.6	59.4	12.0		
Purchasing decision of a customer can be influenced by pricing which in return affects sales volume	Freq.	45	127	34	40	15	2.44	1.117
	Perce.	17.2	48.7	13.0	15.3	5.8		
The Prices of the pharmaceutical products are reasonable.	Freq.	12	65	46	59	79	3.49	1.279
	Perce.	4.6	24.9	17.6	22.6	30.3		
The Prices of the Pharmaceutical Products are not volatile.	Freq.	66	140	39	12	4	2.03	.852
	Perce.	25.3	53.6	14.9	4.6	1.6		

Source: filed survey 2024

According to the above table 4.3 shows that the competitive and reasonable prices can affect sales volume. The researcher tries to study on price of the pharmacies, 13 (5.0%) of the respondents were strongly agree, as of the respondents 15 (5.8%) were strongly disagree,

118(45.2%) of the respondents were agree, 57(21.8%) were also disagree and the rest of the respondents 58 (22.2%) were neutral on the issue. The mean and standard deviations also 2.78& 1.028, it indicates that majority of the respondents were agree on the statement.

The researcher tries to study the offering generic alternatives at a lower price can affect sales volume,11 (4.2%) of the respondents were strongly agree, as of the respondents 15 (5.8%) were strongly disagree, 97(37.2%) of the respondents were agree, 37(14.1%) were also disagree and the rest of the respondents 101 (38.7%) were neutral on the issue. The mean and standard deviations also 2.80&.936, it indicates that majority of the respondents were agree on the statement.

Related to the perception of fair pricing and value for money can affect sales volume, 3 (1.1%) of the respondents were strongly agree, 31 (12.0%) were strongly disagree, 39(14.9%) of the respondents were agree, 155(59.4%) were also disagree and the rest of the respondents 33 (12.6%) were neutral on the issue. The mean and standard deviations also 3.66& .913, it indicates that majority of the respondents were disagree on the statement.

Regarding on the purchasing decision of a customer can be influenced by pricing which in return affects sales volume,45 (17.2%) of the respondents were strongly agree, 15 (5.8%) were strongly disagree, 127(48.7%) of the respondents were agree, 40 (15.3%) were also disagree and the rest of the respondents 34 (13.0%) were neutral on the issue. The mean and standard deviations also 2.44& 1.117, it indicates that majority of the respondents were agree on the statement.

Based on the above table On the Prices of the pharmaceutical products are reasonable, 12 (4.6%) of the respondents were strongly agree, 79 (30.3%) were strongly disagree, 65(24.9%) of the respondents were agree, 59(22.6%) were also disagree and the rest of the respondents

46 (17.6%) were neutral on the issue. The mean and standard deviations also 3.49& 1.279, it indicates that majority of the respondents were strongly disagree on the statement.

Finally, the researcher tries to study The Prices of the Pharmaceutical Products are not volatile,66 (25.3%) of the respondents were strongly agree, as of the respondents 4 (1.6%) were strongly disagree, 140(53.6%) of the respondents were agree, 12(4.6%) were also disagree and the rest of the respondents 39(14.9%) were neutral on the issue. The mean and standard deviations also 2.03&.852, it indicates that majority of the respondents were agree on the issue.

From the analysis, it is evident that pricing has a significant impact on sales volume in the pharmaceutical industry. The statement, perception of fair pricing and value for money can affect sales volume received the highest mean score of 3.66, indicating that the perception of fair pricing and value for money has a substantial influence on sales volume. Additionally, the statement, the prices of the pharmaceutical products are reasonable also received a relatively high mean score of 3.49, suggesting that reasonable prices have a positive impact on sales volume. On the other hand, the statement, the Prices of the Pharmaceutical Products are not volatile received a lower mean score of 2.03, indicating that the stability of prices may have a less pronounced effect on sales volume compared to other pricing-related factors. Overall, the analysis indicates that competitive and reasonable pricing, as well as the perception of fair pricing and value for money, play a crucial role in influencing sales volume in the pharmaceutical industry. The findings could be valuable for pharmaceutical companies in understanding the importance of pricing strategies in driving sales and customer purchasing decisions.

#### 4.5.2 Descriptive analyses related to brand.

**Table 4.4 Analysis related to brand.**

Brand	Cate.	SA	A	N	DA	SDA	Mea	S.D
Exceptional efficiency of the staff including knowledgeable staff can affect sales volume	Freq.	83	146	17	12	3	1.87	.811
	Perce.	31.8	55.9	6.5	4.6	1.1		
The brand of drugs can enhance customer satisfaction and sales volume	Freq.	63	118	65	11	4	2.14	.884
	Perce.	24.1	45.2	24.9	4.2	1.5		
Selling generic products instead of brand ones can affect sales volume	Freq.	86	114	34	19	8	2.04	1.015
	Perce.	33.0	43.7	13.0	7.3	3.0		
The choice of customers is on the brands of drugs	Freq.	37	113	35	20	38	2.58	1.249
	Perce.	14.2	50.2	13.4	7.7	14.5		
Pharmaceutical importers fulfill customer needs	Freq.	20	60	54	106	21	3.18	1.111
	Perce.	7.7	23.0	20.7	40.6	8.0		

Source: filed survey 2024

The researcher tries to study on the exceptional efficiency of the staff including knowledgeable staff can affect sales volume, 12(4.6%) of the respondents disagreed on the statement, 146(55.9%) of the respondents were agreed, 3(1.1%) of the respondents were strongly disagree on the issue, 83(31.8%) of the respondent were also strongly agree the rest of the respondents 17(6.5%) were neutral. The mean and standard deviations also 1.87&.811,

it indicates that majority of the respondents were agree on the knowledgeable staff can affect sales volume.

Related to the study on the brand of drugs can enhance customer satisfaction and sales volume, 11(4.2%) of the respondents were disagree on the statement, 118(45.2%) of the respondents were agree, 4(1.5%) of the respondents were strongly disagree on the issue, 63(24.1%) of the respondent were also strongly agree the rest of the respondents 65(24.9%) were neutral. The mean and standard deviations also 2.14&.884, it indicates that majority of the respondents were agree on the statement.

Regarding to the selling generic products instead of brand ones can affect sales volume, 19(7.3%) of the respondents were disagree on the statement, 114(43.7%) of the respondents were agree, 8(3.0%) of the respondents were strongly disagree on the issue, 86(33.0%) of the respondent were also strongly agree the rest of the respondents 34(13.0%) were neutral. The mean and standard deviations also 2.04&1.015, it indicates that majority of the respondents were agree on the issue.

On the study of the choice of customers are on the brands of drugs, 20(7.7%) of the respondents were disagree on the statement, 113(50.2%) of the respondents were agree, 38(14.5%) of the respondents were strongly disagree on the issue, 37(14.2%) of the respondent were also strongly agree the rest of the respondents 35(13.4%) were neutral. The mean and standard deviations also 2.58&1.249, it indicates that majority of the respondents were agree on the choice of customers are on the brands of drugs.

The researcher tries to study on the pharmaceutical importers fulfill customer needs, 106(40.6%) of the respondents were disagree on the statement, 60(23.0%) of the respondents were agree, 21(8.0%) of the respondents were strongly disagree on the issue, 20(7.7%) of the respondent were also strongly agree the rest of the respondents 54(20.7%)

were neutral. The mean and standard deviations also 3.18&1.111, it indicates that majority of the respondents were disagree on the statement.

Based on the analysis, it is evident that brand-related factors have a significant impact on sales volume in the pharmaceutical industry. The statement "The choice of customers is on the brands of drugs" received the highest mean score of 2.58, indicating that customer preference for specific brands significantly influences sales volume. The pharmaceutical importers fulfill customer needs also received a relatively high mean score of 3.18, suggesting that the ability of pharmaceutical importers to meet customer needs has a positive impact on sales volume. Generally, the analysis indicates that customer preference for specific brands and the ability of pharmaceutical importers to fulfill customer needs play a crucial role in influencing sales volume in the pharmaceutical industry. The findings could be valuable for pharmaceutical companies in understanding the importance of brand-related strategies in driving sales and customer satisfaction.

#### 4.5.3 Descriptive analyses related to site/location.

**Table 4.5 Analysis on related to site/location.**

Site/location	Cat.	SA	A	N	DA	SD	Mean	SD
Conveniences of the location of the pharmacy can affect sales volume.	Freq.	133	95	9	9	15	1.77	1.072
	Perce.	51.0	36.4	3.4	3.4	5.6		
The presence of other pharmacies and healthcare providers in the vicinity can affect sales volume.	Freq.	50	98	52	46	15	2.53	1.155
	Perce.	19.2	37.5	19.9	17.8	5.6		
High foot traffic areas, easily parking and increased customer visits affect sales volume.	Freq.	37	95	52	53	24	2.74	1.200
	Perce.	14.2	36.4	19.9	20.3	9.2		
Proximity to the residential areas,	Freq.	50	98	52	46	15	2.5	1.1



medical facilities and accessibilities affects sales volume.	Perce.	19.2	37.5	19.9	17.8	5.6		
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Source: filed survey 2024

According to the above table conveniences of the location of the pharmacy can affect sales volume, based on the respondents 36.4%(95) of the respondents were agree, 3.4% (9) of the respondents saying disagree, 51.0% (133) of the respondents were strongly agree,5.6% (15) of the respondents were strongly disagree and the rest of the respondents 3.4% (9) also answered neutral. The mean and standard deviation also 1.77 and 1.072, it indicates that the majority of the respondents strongly agree on the statement.

Related to the presence of other pharmacies and healthcare providers in the vicinity can affect sales volume,37.5%(98) of the respondents were agree, 17.8% (46) of the respondents saying disagree, 19.2% (50) of the respondents were strongly agree, 5.6% (15) of the respondents were strongly disagree and the rest of the respondents 19.9% (52) also answered neutral. The mean and standard deviation also 2.53 and 1.155, it indicates that the majority of the respondents were agreed on the statement.

Regarding to the high foot traffic areas, easily parking and increased customer visits affect sales volume,36.4%(95) of the respondents were agree, 20.3% (53) of the respondents saying disagree, 14.2% (37) of the respondents were strongly agree, 9.2% (24) of the respondents were strongly disagree and the rest of the respondents 19.9% (52) also answered neutral. The mean and standard deviation also 2.74 and 1.200, it indicates that the majority of the respondents were agreed on the statement.

According to the proximity to the residential areas, medical facilities and accessibilities affects sales volume, 37.5%(98) of the respondents were agree, 17.8% (46) of the respondents saying disagree, 19.2% (50) of the respondents were strongly agree, 5.6% (15) of the

respondents were strongly disagree and the rest of the respondents 19.9% (52) also answered neutral. The mean and standard deviation also 2.53 and 1.155, it indicates that the majority of the respondents were agreed on the issue.

The presence of pharmacies and healthcare providers in the vicinity was found to have a more pronounced impact, with a mean score of 2.53, suggesting that this factor significantly influences sales volume. Similarly, high foot traffic areas, easy parking, and increased customer visits were also identified as influential factors, with a mean score of 2.74. The proximity to residential areas, medical facilities, and accessibility received a mean score of 2.53, indicating that this factor also plays a significant role in affecting sales volume. Overall, the analysis indicates that various site/location-related factors such as the presence of other pharmacies and healthcare providers, high foot traffic areas, and proximity to residential areas and medical facilities have a notable impact on sales volume in the pharmaceutical industry. This understanding could be valuable for pharmaceutical companies in making informed decisions about the location of their pharmacies to maximize sales potential and customer accessibility.

#### 4.5.4 Descriptive analyses related to efficiency.

**Table 4.6 Analysis related to efficiency.**

Efficiency	Cat.	SA	A	N	DA	SDA	Me	SD
The efficiency of the distribution of pharmaceutical Products in the market are without any difficulties.	Freq.	29	63	70	53	46	2.53	1.155
	Per.	11.1	24.1	26.7	20.3	17.8		
The efficiency of the Ordering system of Pharmaceutical Products from wholesalers is convenient for retailers.	Freq.	37	95	52	53	24	3.09	1.262
	Per.	14.2	36.3	19.9	20.3	9.1		
Offering or selling a diverse range of brand	Freq.	31	91	43	48	48	2.9	1.3

products can affect sales volume	Per.	11.9	34.9	16.6	18.3	18.3		
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Source: filed survey 2024

According to the above table, the efficiency of the distribution of pharmaceutical Products in the market are without any difficulties,63 (24.1%) of the respondents were agree, 53(20.3%) of the respondents saying disagree, 29(11.1%) of the respondents were strongly agree, 46(17.8%) of the respondents were strongly disagree and the rest of the respondents 70(26.7%) also answered neutral. The mean and standard deviation are also 2.53 and 1.155; it indicates that most respondents were neutral.

About the efficiency of the Ordering system of Pharmaceutical Products from wholesalers is convenient for retailers, 95 (36.3%) of the respondents were agree, 53(20.3%) of the respondents saying disagree, 373(14.2%) of the respondents were strongly agree, 24(9.1%) of the respondents were strongly disagree and the rest of the respondents 52(19.9%) also answered neutral. The mean and standard deviation are also 3.09 and 1.262.It indicates that most respondents were agreeing with the statement.

Regarding to the offering or selling a diverse range of brand products can affect sales volume, 91(34.9%) of the respondents were agree, 48(18.3%) of the respondents saying disagree, 31(11.9%) of the respondents were strongly agree, 48(18.3%) of the respondents were strongly disagree and the rest of the respondents 43(16.6%) also answered neutral. The mean and standard deviation are also 2.97 and 1.322.It indicates that most respondents were agreeing with the statement.

Based on the analysis indicates that the efficiency of the distribution process may need improvement, while the ordering system from wholesalers is viewed more positively. Additionally, offering a diverse range of brand products is perceived to have a moderate impact on sales volume in the pharmaceutical industry. This understanding could be valuable

for pharmaceutical companies in addressing potential areas for improvement in their distribution processes and product offerings to enhance overall efficiency and sales volume.

#### 4.5.5 Descriptive analyses related to competitors.

**Table 4.7 Analysis related to competitors.**

Competitors	Cat.	SA	A	N	DA	SDA	Mean	SD
Pharmaceutical competitors compete in the market based on ethical way.	Freq.	80	121	39	8	13	2.05	1.014
	Perce.	30.6	46.4	14.9	3.1	5.0		
Availability of the computations of suppliers on pharmaceutical products is an important to consumers.	Freq.	55	123	45	25	13	2.30	1.062
	Perce.	21.1	47.1	17.2	9.6	5.0		
Pharmacies available pharmaceutical Products on time to Customers	Freq.	22	120	63	40	16	2.65	1.037
	Perce.	8.4	46.0	24.1	15.3	6.2		
Analyzing competitors' strength and weakness is crucial to affect the sales volume of the pharmacy.	Freq.	30	155	44	23	9	2.33	.916
	Perce.	11.5	59.4	16.9	8.8	3.4		

Source: filed survey 2024

According to the above table, the pharmaceutical competitors compete in the market based on ethical way, 121(46.4%) of the respondents were agree, 8(3.1%) of the respondents saying disagree, 80(30.6%) of the respondents were strongly agree, 13(5.0%) of the respondents were strongly disagree and the rest of the respondents 39(14.9%) also answered neutral.

The mean and standard deviation are also 2.05 and 1.014; it indicates that majority of respondents were agreeing with statement.

About the Availability of the computations of suppliers on pharmaceutical products is an important to consumers, 123(47.1%) of the respondents were agree, 25(9.6%) of the respondents saying disagree, 55(21.1%) of the respondents were strongly agree, 13(5.0%) of the respondents were strongly disagree and the rest of the respondents 45(17.2%) also answered neutral. The mean and standard deviation are also 2.30 and 1.062. It indicates that most respondents were agreeing with the statement.

Regarding to the pharmacies available pharmaceutical Products on time to Customers, 120(46.0%) of the respondents were agree, 40(15.3%) of the respondents saying disagree, 22(8.4%) of the respondents were strongly agree, 16(6.2%) of the respondents were strongly disagree and the rest of the respondents 63(24.1%) also answered neutral. The mean and standard deviation are also 2.65 and 1.037. It indicates that most respondents were agreeing with the statement.

Related to the analyzing competitors' strength and weakness is crucial to affect the sales volume of the pharmacy, 155(59.4%) of the respondents were agree, 23(8.8%) of the respondents saying disagree, 30(11.5%) of the respondents were strongly agree, 9(3.4%) of the respondents were strongly disagree and the rest of the respondents 44(16.9%) also answered neutral.

The mean and standard deviation are also 2.33 and .916, it shows that majority of the respondents were learning towards agree.

The analysis, it is evident that the perception of ethical competition among pharmaceutical competitors is relatively low. The availability of computations of suppliers on pharmaceutical products was found to be important to consumers, with a mean score of 2.30, suggesting that this aspect is viewed more positively compared to ethical competition. Pharmacies providing pharmaceutical products on time to customers received a mean score of 2.65, indicating that

this aspect is perceived more positively compared to the previous two statements. The analysis also suggests that analyzing competitors' strengths and weaknesses is considered crucial to affect the sales volume of the pharmacy, as indicated by a mean score of 2.33. Finally, the analysis indicates that ethical competition among pharmaceutical competitors may need improvement. However, the availability of computations of suppliers on pharmaceutical products and the timely provision of pharmaceutical products to customers are viewed more positively. Additionally, understanding competitors' strengths and weaknesses is perceived as crucial for affecting sales volume in the pharmaceutical industry. This understanding could be valuable for pharmaceutical companies in addressing potential areas for improvement in their competitive practices and customer service to enhance their market position and sales volume.

#### 4.5.6 Descriptive analyses related to sales volume.

**Table 4.8 Analysis related to sales volume.**

Sales volume	Cat.	SA	A	N	DA	SDA	Mean	SD
Pharmacists play a fundamental role in supporting to increase sales volume of the pharmacies.	Freq.	41	117	45	48	10	2.50	1.080
	Per.	15.7	44.8	17.4	18.3	3.8		
The company uses the different strategy to promote new product and existed product in the market for better sales.	Freq.	22	120	63	40	16	2.65	1.037
	Per.	8.4	46.0	24.1	15.3	6.2		
The company use different strategy to promote and distribute drugs and prescribed drugs	Freq.	30	155	44	23	9	2.33	.916
	Per.	11.5	59.4	16.9	8.8	3.4		
Overall sales volume of the pharmacies increased based on the way of widening the delivery of its services	Freq.	41	144	28	38	10	2.36	1.034
	Per.	15.7	55.2	10.7	14.6	3.8		

Source: filed survey 2024

Regarding to study on the pharmacists play a fundamental role in supporting to increase sales volume of the pharmacies, 41 (15.7%) of the respondents were strongly agree, 10 (3.8%) were strongly disagree, 117(44.8%) of the respondents were agree, 48(18.3%) were also disagree and the rest of the respondents 45(17.4%) were neutral on the issue. The mean and standard deviations also 2.50 & 1.080, it indicates that majority of the respondents were agree on the statement.

On the study of the company uses the different strategy to promote new product and existed product in the market for better sales, 22(8.4%) of the respondents were strongly agree, as of the respondents 16(6.2%) were strongly disagree, 120(46.0%) of the respondents were agree, 40(15.3%) were also disagree and the rest of the respondents 63(24.1%) were neutral on the issue. The mean and standard deviations also 2.97 & 1.360, it indicates that majority of the respondents were agree on the statement.

Related to the company use different strategy to promote and distribute drugs and prescribed drugs, 30 (11.5%) of the respondents were strongly agree, as of the respondents 9(3.4%) were strongly disagree, 155(59.4%) of the respondents were agree, 23(8.8%) were also disagree and the rest of the respondents 44(16.9%) were neutral on the issue. The mean and standard deviations also 2.33 & .916, it indicates that majority of the respondents were agree on the statement.

Based on the study related to the overall sales volume of the pharmacies increased based on the way of widening the delivery of its services, 144(55.2%) of the respondents were agree, 38(14.6%) of the respondents saying disagree, 41(15.7%) of the respondents were strongly agree, 10(3.8%) of the respondents were strongly disagree and the rest of the respondents 28(10.7%) also answered neutral. The mean and standard deviation are also 2.36 and 1.034, it is indicating that most of respondents are learning towards agrees.

Pharmacists are seen as playing a fundamental role in supporting the increase of sales volume for pharmacies. The statement "Pharmacists play a fundamental role in supporting to increase sales volume of the pharmacies" received a mean score of 2.50, indicating that this aspect is viewed more positively compared to the other statements. The use of different strategies to promote new and existing products in the market for better sales was also perceived positively, with a mean score of 2.65. The use of different strategies to promote and distribute drugs and prescribed drugs received a mean score of 2.33, indicating a positive perception but slightly lower than the previous statement. The overall sales volume of pharmacies increasing based on widening the delivery of their services was also viewed positively, with a mean score of 2.36. The analysis suggests that various strategies and factors contribute to the increase in sales volume for pharmacies. Pharmacists' role, different promotional strategies, and widening the delivery of services are all perceived as important in driving sales volume within the pharmaceutical industry. This understanding could be valuable for pharmaceutical companies in developing and implementing effective strategies to enhance their sales volume and overall market performance.

#### 4.6 Inferential Analysis

To establish the relationship between the independent variables and the dependent variable the study conducted inferential analysis which involved coefficient of correlation and multiple regression.

##### 4.6.1 Descriptive statistics

**Table 4.9 descriptive statistics**

	Mean	Std. Deviation	N
Price	2.50	1.080	261
Brand	2.78	1.028	261
Site/location	1.87	.811	261
Efficiency	3.18	1.111	261



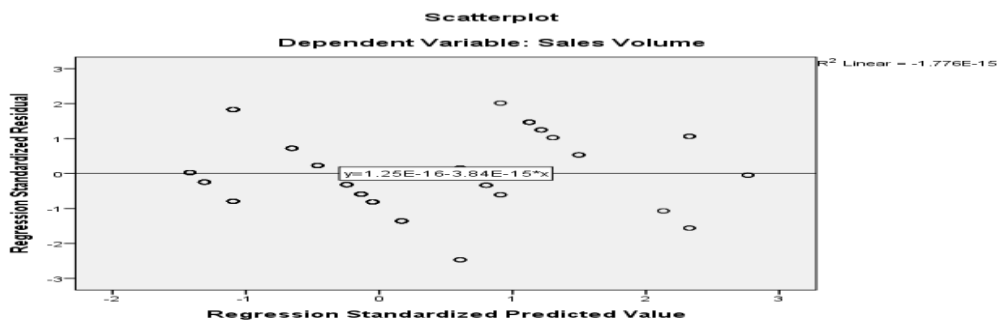
Competitors	2.53	1.155	261
Sales Volume	2.05	1.014	261

Source: filed survey 2024

Based on the provided descriptive statistics, the average price of the products is \$2.50 with a standard deviation of \$1.08, indicating that the prices vary quite a bit around the mean. The average brand rating is 2.78 with a standard deviation of 1.03, suggesting that there is some variability in how the brands are perceived. The average rating for site/location is 1.87 with a standard deviation of 0.81, indicating that there is some variability in the ratings for different sites/locations. The average efficiency rating is 3.18 with a standard deviation of 1.11, indicating that there is some variability in the efficiency ratings. The average rating for competitors is 2.53 with a standard deviation of 1.16, suggesting that there is some variability in how the competitors are perceived. The average sales volume rating is 2.05 with a standard deviation of 1.01, indicating that there is some variability in the sales volumes reported. Overall, these descriptive statistics provide insight into the central tendency and variability of the variables in the dataset, which can help in understanding the distribution and characteristics of the data.

#### 4.6.2 Linear regression

Figure 4.1 linear regression analyses



Source: filed survey 2024

The above graph shows the residuals on the vertical axis and the independent variable on the horizontal axis, according to the studies the researcher used random sampling techniques. Based on this the figure shows a linear regression model is fulfilled on the study.

It indicates that the variables price, brand, site/location, efficiency, and competitors are linear with the dependent variable of sales volume.

### 4.6.3 Normality test

**Table 4.10 normality test**

	N	Skewness		Kurtoses	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
Price	261	.491	.151	-.691	.300
Brand	261	.987	.151	1.433	.300
Site/location	261	-.352	.151	-.847	.300
Efficiency	261	.456	.151	-.702	.300
Competitors	261	.885	.151	.107	.300
Valid N (listwise)	261				

Source: filed survey 2024

Normality test is used to show if the data is normally distributed or not, there by almost the data is proportionally distributed. Since the skewedness and kurtoses values fall in the range of (+or-) 1, the data is assumed to be normally distributed. The sales volume of the pharmacies for the independent variables price, brand, efficiency and competitors are positively skewed, but site/location are negatively skewed, and overall sales volume of the pharmacies is positively skewed.

### 4.6.4 Collinearity statistics

**Table 4.11 Collinearity statistics**

Model	Collinearity statistics	
	Tolerance	Variance Inflation Factor

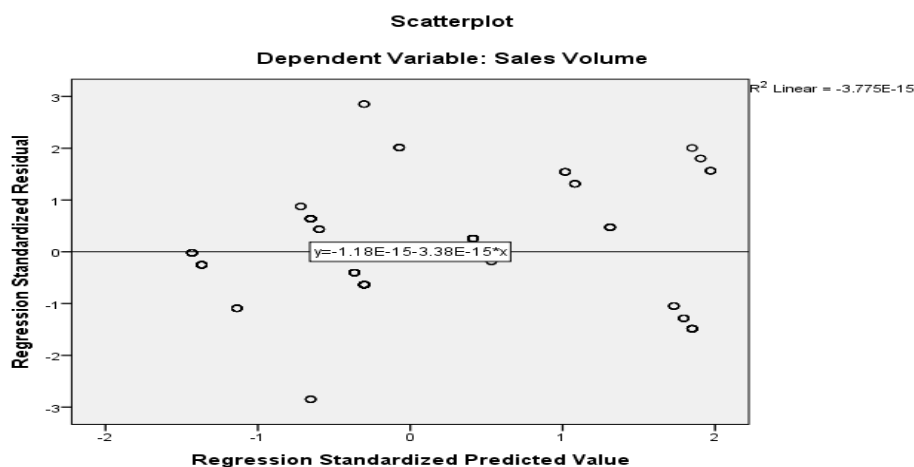
1 constant		
Price	.119	8.415
Brand	.109	9.153
Site/location	.175	3.710
Efficiency	.095	6.478
Competitors	.073	8.705

Source: filed survey 2024

Multicollinearity refers to a situation in which there is exact (or nearly exact) linear relation among two or more of the input variables. The VIF (Variance Inflation Factor) for each term in the model measures the combined effect of dependence among the regressors on the variance of that term. One or more large VIF indicate multicollinearity. Practical experience indicates that if any of the VIF results exceeds 5 or 10, it is an indication that the associated regression coefficients are poorly estimated because of multicollinearity. Collinearity Statistics shows that the VIF value of price 8.415, brand 9.153, site/location 3.710, efficiency 6.478 and competitors 8.705 which is less than 5 or 10 and no collinearity is observed on this data. The independent variables that contribute to variance of the dependent variable are explained by standardized beta coefficient.

#### 4.6.5 Homoscedasticity

Figure 4.2 homoscedasticity test



Source: Source: filed survey 2024

Homoscedasticity is a property of the residuals i.e. the differences between observed and predicted values in a regression analysis. Specifically, it pertains to the assumption that the variance of the residuals is constant across all levels of the independent variables. Homoscedasticity implies that the spread of the residuals remains consistent as the values of the independent variables change. Based on the assumptions of homoscedasticity the above scatter plot shows that there is homoscedasticity.

Homoscedasticity is an important consideration when conducting regression analyses, as violations of this assumption can lead to biased parameter estimates and incorrect inferences. Related to the biasedness of the distribution of data as shown in the figure 4.1 there is no biased distribution of information.

#### 4.6.6 Autocorrelation

**Table 4.12 autocorrelation**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin Watson
1	.945	.892	.890	.304	.234

Source: filed survey 2024

Autocorrelation can show if there is a momentum factor associated with a stock. The Durbin-Watson statistic will always have a value ranging between 0 and 4. A value of 2.0 indicates there is no autocorrelation detected in the sample. Values from 0 to less than 2 points to positive autocorrelation and values from 2 to 4 mean negative autocorrelation. Based on the above table the Durbin-Watson statistic shows .234 it indicates that the negative autocorrelation between the variables.

#### 4.6.7 Model summary

The coefficient of determination was carried out to measure how well the statistical model was likely to predict future outcomes.

The coefficient of determination,  $r^2$  is the square of the sample correlation coefficient between outcomes and predicted values. As such it explains the extent to which changes in the dependent variable can be explained by the change in the independent variables or the percentage of variation in the dependent variable (sales volume) that is explained by all the four independent variables (price, brand, site/location, efficiency, and competitors).

**Table 4.15 Model summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.945	.892	.890	.234

Source: filed survey 2024

The four independent variables that were studied (price, brand, site/location, efficiency, and competitors) explain only 89.2% of sales volume in the community pharmacies as represented by the  $R^2$ . This therefore means the five independent variables only contribute about 89.2% to the formation of sales volume in the community pharmacies while other factors not studied in this research contribute to 10.8% of sales volume in the community pharmacies.

**Table 4.16 ANOVA**

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	281.624	5	56.325	664.171	.000
	Residual	21.625	255	.085		
	Total	303.249	260			

Source: filed survey 2024

The ANOVA test table shows, it is noticed that F value of 664.171 is significant at 0.000 levels. Therefore, from the result, it can be concluded that with 89.2% of the variance (R-Square) price, brand, site/location, efficiency, and competitors are significant effect on sales volume.

#### 4.6.8 Coefficient of Correlation

**Table 4.15 Coefficient of Correlation**

		Sales volume	Price	Brand	Site/location	Efficiency	Competitors
Sales volume	Pearson correlation	1					
	Sig (2-tailed)						
Price	Pearson correlation	.915	1				
	Sig (2-tailed)	.000					
Brand	Pearson correlation	.720	.780	1			
	Sig (2-tailed)	.000	.000				
Site/location	Pearson correlation	.905	.893	.777	1		
	Sig (2-tailed)	.000	.000	.000			
Efficiency	Pearson correlation	.901	.869	.832	.832	1	

	Sig (2-tailed)	.000	.000	.000	.000	.000	
Competitors	Pearson correlation	.835	.892	.816	.910	.789	1
	Sig (2-tailed)	.000	.000	.000	.000	.000	.000

Source: filed survey 2024

To compute the correlation (strength) between the study variables and their findings the study used the Karl Pearson's coefficient of correlation (r). From the findings, it was clear that there was a positive correlation between sales volume and price as shown by a correlation figure of 0.915, it was also clear that there was a positive correlation between sales volume and brand with a correlation figure of 0.720, it was also clear that there was also a positive correlation between sales volume and site/location with a correlation value of 0.905, it was clear that there was appositive correlation between sales volume and efficiency with a correlation value of 0.901and also it was clear that there was appositive correlation between sales volume and competitors with a correlation value of 0.835. This shows that there was positive correlation between sales volume and price, brand, site/location, efficiency, and competitors.

#### **4.6.9 Multiple Regression Analysis**

The researcher further conducted a multiple regression analysis so as to the factors of community pharmacies on sales volume in related to price, brand, site/location, efficiency, and competitors. Multiple regressions are a statistical technique that allows the study to predict a score of one variable on the basis of their scores on several other variables.

The main purpose of multiple regressions is to learn more about the relationship between several independent or predictor variables and a dependent or criterion variable. The

researcher applied the statistical package for social sciences (SPSS) to code, enter and compute the measurements of the multiple regressions for the study.

**Table 4.16 Coefficients multiple regression Analysis**

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.212	.062		3.408	.001
	Price	.142	.051	.135	2.787	.006
	Brand	-.127	.067	-.095	-1.879	.061
	Site/location	.043	.039	.044	1.110	.268
	Efficiency	.750	.051	.802	7.812	.000
	Competitors	.179	.066	.168	2.713	.007

Source: filed survey 2024

Dependent variable: sales volume

The regression equation,  $Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \alpha$  becomes:

$$Y = .212 + .142X_1 - .127X_2 - .043X_3 + .750X_4 + .179X_5$$

Where Y is the dependent variable (sales volume), X1 is price, X2 is brand, X3 is site/location, X4 is efficiency and X5 is competitors. From the regression equation established, taking all other factors (price, brand, site/location, efficiency, and competitors) constant at zero, sales volume within the community pharmacies would be 0.212. Further, if



all the other variables are kept constant, a unit increase in price will lead to 0.142 increases in sales volume within the pharmacies. A unit decrease in brand will lead to a -0.127 decrease sales volume within the pharmacies. A unit decrease in site/location will lead to a -0.043 decrease sales volume within the pharmacies. A unit increases the efficiency will lead to a 0.750 increases sales volume within the pharmacies. While a unit increases the competitors will lead to a 0.179 increases sales volume within the pharmacies.

### **Results and Discussions**

On the survey responses of the staff's community pharmacies in Addis Ababa, related to the factors of sales volume, the researcher reaches on the findings which were used to make conclusion and related recommendation.

From the analysis, it is evident that pricing has a significant impact on sales volume in the pharmaceutical industry. The statement, perception of fair pricing and value for money can affect sales volume received the highest mean score of 3.66, indicating that the perception of fair pricing and value for money has a substantial influence on sales volume. Additionally, the statement, the prices of the pharmaceutical products are reasonable also received a relatively high mean score of 3.49, suggesting that reasonable prices have a positive impact on sales volume. On the other hand, the statement, the Prices of the Pharmaceutical Products are not volatile received a lower mean score of 2.03, indicating that the stability of prices may have a less pronounced effect on sales volume compared to other pricing-related factors. Overall, the analysis indicates that competitive and reasonable pricing, as well as the perception of fair pricing and value for money, play a crucial role in influencing sales volume in the pharmaceutical industry. The findings could be valuable for pharmaceutical companies in understanding the importance of pricing strategies in driving sales and customer purchasing decisions.

Based on the analysis, it is evident that brand-related factors have a significant impact on sales volume in the pharmaceutical industry. The statement "The choice of customers is on the brands of drugs" received the highest mean score of 2.58, indicating that customer preference for specific brands significantly influences sales volume.

The pharmaceutical importers fulfill customer needs also received a relatively high mean score of 3.18, suggesting that the ability of pharmaceutical importers to meet customer needs has a positive impact on sales volume. Generally, the analysis indicates that customer preference for specific brands and the ability of pharmaceutical importers to fulfill customer needs play a crucial role in influencing sales volume in the pharmaceutical industry. The findings could be valuable for pharmaceutical companies in understanding the importance of brand-related strategies in driving sales volume.

The presence of pharmacies and healthcare providers in the vicinity was found to have a more pronounced impact, with a mean score of 2.53, suggesting that this factor significantly influences sales volume. Similarly, high foot traffic areas, easy parking, and increased customer visits were also identified as influential factors, with a mean score of 2.74. The proximity to residential areas, medical facilities, and accessibility received a mean score of 2.53, indicating that this factor also plays a significant role in affecting sales volume. Overall, the analysis indicates that various site/location-related factors such as the presence of other pharmacies and healthcare providers, high foot traffic areas, and proximity to residential areas and medical facilities have a notable impact on sales volume in the pharmaceutical industry. This understanding could be valuable for pharmaceutical companies in making informed decisions about the location of their pharmacies to maximize sales potential and customer accessibility.

Based on the analysis indicates that the efficiency of the distribution process may need improvement, while the ordering system from wholesalers is viewed more positively. Additionally, offering a diverse range of brand products is perceived to have a moderate impact on sales volume in the pharmaceutical industry. This understanding could be valuable for pharmaceutical companies in addressing potential areas for improvement in their distribution processes and product offerings to enhance overall efficiency and sales volume.

The analysis, it is evident that the perception of ethical competition among pharmaceutical competitors is relatively low. The availability of computations of suppliers on pharmaceutical products was found to be important to consumers, with a mean score of 2.30, suggesting that this aspect is viewed more positively compared to ethical competition. Pharmacies providing pharmaceutical products on time to customers received a mean score of 2.65, indicating that this aspect is perceived more positively compared to the previous two statements. The analysis also suggests that analyzing competitors' strengths and weaknesses is considered crucial to affect the sales volume of the pharmacy, as indicated by a mean score of 2.33. Finally, the analysis indicates that ethical competition among pharmaceutical competitors may need improvement. However, the availability of computations of suppliers on pharmaceutical products and the timely provision of pharmaceutical products to customers are viewed more positively.

Additionally, understanding competitors' strengths and weaknesses is perceived as crucial for affecting sales volume in the pharmaceutical industry. This understanding could be valuable for pharmaceutical companies in addressing potential areas for improvement in their competitive practices and customer service to enhance their market position and sales volume.

Finally, pharmacists are seen as playing a fundamental role in supporting the increase of sales volume for pharmacies. The statement "Pharmacists play a fundamental role in supporting to increase sales volume of the pharmacies" received a mean score of 2.50, indicating that this aspect is viewed more positively compared to the other statements. The use of different strategies to promote new and existing products in the market for better sales was also perceived positively, with a mean score of 2.65. The use of different strategies to promote and distribute drugs and prescribed drugs received a mean score of 2.33, indicating a positive perception but slightly lower than the previous statement. The overall sales volume of pharmacies increasing based on widening the delivery of their services was also viewed positively, with a mean score of 2.36. The analysis suggests that various strategies and factors contribute to the increase in sales volume for pharmacies. Pharmacists' role, different promotional strategies, and widening the delivery of services are all perceived as important in driving sales volume within the pharmaceutical industry.

This understanding could be valuable for pharmaceutical companies in developing and implementing effective strategies to enhance their sales volume and overall market performance.

**Table 4.17 hypothesis summary**

Hypothesis	Beta Value , T Value And P Value	Accept Or Reject
H <sub>1</sub> -Price has a positive and significant influence on sales volume.	B= .135 T= 2.787 P= .006	Accepted
H <sub>2</sub> -Selling brand medicine and cosmetics has a positive and significant influence on sales volume.	B= -.095 T= -1.879 P= .061	Accepted
H <sub>3</sub> - Site of the pharmacy has positive and significant influence on sales volume.	B= -.044 T= -1.110	Accepted

	P=	.268	
H4- Employee efficiency has positive and significant influence on sales volume.	B=	.802	Rejected
	T=	7.812	
	P=	.000	
H5 - Competitors have positive and significant influence on sales volume.	B=	.168	Accepted
	T=	2.713	
	P=	.007	

Source: filed survey 2024

According to the above table No significant change in sales volume due to the availability of price. This is because of the P-value/Sig. value is 0.006, which is more than the acceptable limit of 0.05.No significant change in sales volume due to the availability of brand. This is because of the P-value/Sig. value is 0.061, which is more than the acceptable limit of 0.05.No significant change in sales volume due to the availability of site/location. This is because of the P-value/Sig. value is 0.268, which is more than the acceptable limit of 0.05.

The significant change in sales volume due to the efficiency, because of the P-value/Sig. value is 0.000, which is less than the acceptable value of 0.05. With a 1% increase in the efficiency, the sales volume will increase by .750% (B value).

Finally, no significant change in sales volume due to the availability of competitors, this is because of the P-value/Sig. value is 0.007, which is more than the acceptable limit of 0.05.

## **Chapter Five**

### **Summary, Conclusions and Recommendations**

#### **5.1 Introduction**

This chapter tried to summarize the outcomes of the study or findings and to provide possible solutions or recommendations in order to solve the problems. The first section of this chapter is dedicated to the conclusion part and based on these summarized findings recommendations are given.

#### **5.2 Summary of findings**

The analysis indicates that ethical competition among pharmaceutical competitors may need improvement. However, the availability of computations of suppliers on pharmaceutical products and the timely provision of pharmaceutical products to customers are viewed more positively. Additionally, understanding competitors' strengths and weaknesses is perceived as crucial for affecting sales volume in the pharmaceutical industry. This understanding could be valuable for pharmaceutical companies in addressing potential areas for improvement in their competitive practices and customer service to enhance their market position and sales volume.

The analysis reveals varying perceptions among respondents regarding the impact of pricing on sales volume, with agreement on some aspects such as competitive and reasonable prices and offering generic alternatives at a lower price, but disagreement on others, such as the perception of fair pricing and value for money. Additionally, there is a negative perception regarding the reasonableness of pharmaceutical product prices, while there is general agreement that the prices are not volatile.

### **5.3 Conclusion**

In the preceding section of this paper, the issue of the assessing of the factors that affect community pharmacies sales volume in Addis Ababa, the analysis indicates that competitive and reasonable pricing, as well as the perception of fair pricing and value for money, play a crucial role in influencing sales volume in the pharmaceutical industry. The findings could be valuable for pharmaceutical companies in understanding the importance of pricing strategies in driving sales and customer purchasing decisions. The analysis indicates that customer preference for specific brands and the ability of pharmaceutical importers to fulfill customer needs play a crucial role in influencing sales volume in the pharmaceutical industry. The findings could be valuable for pharmaceutical companies in understanding the importance of brand-related strategies in driving sales volume.

The analysis indicates that various site/location-related factors such as the presence of other pharmacies and healthcare providers, high foot traffic areas, and proximity to residential areas and medical facilities have a notable impact on sales volume in the pharmaceutical industry. This understanding could be valuable for pharmaceutical companies in making informed decisions about the location of their pharmacies to maximize sales potential and customer accessibility. Based on the analysis indicates that the efficiency of the distribution process may need improvement, while the ordering system from wholesalers is viewed more positively. Additionally, offering a diverse range of brand products is perceived to have a moderate impact on sales volume in the pharmaceutical industry. This understanding could be valuable for pharmaceutical companies in addressing potential areas for improvement in their distribution processes and product offerings to enhance overall efficiency and sales volume. The overall sales volume of pharmacies increasing based on widening the delivery of their services was also viewed positively, with a mean score of 2.36. The analysis suggests that various strategies and factors contribute to the increase in sales volume for pharmacies.

Pharmacists' role, different promotional strategies, and widening the delivery of services are all perceived as important in driving sales volume within the pharmaceutical industry. This understanding could be valuable for pharmaceutical companies in developing and implementing effective strategies to enhance their sales volume and overall market performance.

#### **5.4 Recommendation**

In this section, the possible remedies are directed in order to solve or reduce some problems.

The following recommendations are given to the community pharmacies:

- Competitive and reasonable prices have a significant impact on sales volume, as indicated by the frequency and percentage of responses. It is recommended to continue maintaining competitive and reasonable pricing strategies to drive sales.
- The prices of pharmaceutical products are perceived as non-volatile, which is beneficial for customer confidence and loyalty. The company should continue to monitor market conditions and adjust prices prudently to maintain stability.
- On the other hand, from the beta value, we have seen that site/location was the highest influencer of sales volume. So that, in order to attract new customers and also satisfy and make their customers stay long as a consumer in the pharmacies should work on the availability of the pharmacy's location.
- The company should continue to focus on competitive and reasonable pricing, offer generic alternatives, address any concerns related to perceived value for money, and carefully manage pricing strategies to align with customer preferences. Additionally, maintaining stable pricing is essential for customer satisfaction and loyalty.
- Brand has a significant negative impact on sales volume, as indicated by the negative unstandardized coefficient ( $B = -0.127$ ) and the standardized coefficient (Beta =  $-0.095$ ). This suggests that higher brand value may lead to lower sales volume.



The company should evaluate its branding strategies and consider potential adjustments to increase sales.

- Efficiency has a highly significant positive impact on sales volume, as indicated by the strong positive unstandardized coefficient ( $B = 0.750$ ) and the large, standardized coefficient ( $Beta = 0.802$ ). This suggests that improving efficiency leads to a substantial increase in sales volume. The company should prioritize and invest in measures to enhance operational efficiency.
- Competitors have a significant positive impact on sales volume, as indicated by the positive unstandardized coefficient ( $B = 0.179$ ) and the standardized coefficient ( $Beta = 0.168$ ). This suggests that increased competition positively affects sales volume. The company should monitor and respond to competitive pressures effectively to maintain or increase sales.

### **5.5 Limitations and directions of the research**

- The limitations of the research may include constraints in resources, such as time, budget, or access to data and also the scope of the research may be limited by the specific population or sample size being studied.
- As for the directions of the research, these could include suggestions for further study or areas for future research. This might involve exploring related topics, expanding the study to different populations, or conducting longitudinal studies to track changes over time.
- The research could provide recommendations for practical applications or interventions based on the findings.

## REFERENCE

- How after-sales service quality dimensions affect customer satisfaction.  
Alireza Fazlazadeh, Fatemeh Bagherzadeh, Pegah Mohamadi  
Africa journal of business Management 5(17) 7658, 2011
- A multidimensional subjective scale development for measuring sales performance of retail sales personnel.  
IOSR journal of business and Management 16(4), 39-47,2014
- A multivariable intelligent decision-making model for retail sales forecasting.  
ZXGUO, Wai Keung Wong, Min Li decision support systems 55(1), 274 -255,2013
- A prediction study on e-commerce sales based on structure time series model and web search data.  
Dai Wei, Peng Geng, Liu Ying, Li Shuaipeng  
The 26<sup>th</sup> Chinese control and decision conference (2014 CCDC) 5546-5351,2014
- The performance differences between high and low sales turnover of community pharmacies.  
NI Putu UdayanaAntari, Ni Putu Dewi Agustini, Ni Made Dharma journal  
Administrasi Kesehatam Indonesia 9(2) 2021, 135-149, 2021.
- Factors affecting the profitability of Pharmacies.  
Graham Pampel. University of the Witwatersrand faculty of commerce, Law and Management school of accountancy, Doi 10(2) 42-47, 2013
- Saunders. M, Lewis P, Thornhill, A, (2009) Research Methods for business students
- Kotler P, (2003) Marketing Management, 14<sup>th</sup> edition New York: Prentice Hall
- Bhasin, H (2018) factors affecting sales of a product available accessed.12(4) 658-675
- Gonzalez-Benito,O (2005) Spatial competitive interaction of retail store formats: Modeling proposal of empirical Results. Journal of business Research, 58, 457-466.
- Avlonitis, G, J, and Indonus , K.A (2004). The impact of market structure on pricing objectives of service firms. Journal of product and brand Management, 13(5), 343-358
- Kennedy E., and Moody, M., Pioch (2000). An investigation of the factors affecting community pharmacies selection of over-the-counter preparations, pharmacy world and science, 22 (2) 47-52
- IASB, (2010). The IFRS framework. International financial reporting standards from <http://WWW.Iasplus.com/en/standards/standards4>
- Kotler P, and Keller, K.L. (2011) marketing Mnagement , 14<sup>th</sup> edition, New Jersey; Prentice hall
- Gasper, (2014) international journal of Economics and Management science vol 6, issue 9, 402-411
- Kotler P., Armstrong, G., Wong V and Saunders, J (2010) principle of marketing 2<sup>nd</sup> edition.
- Creswell, J.W. (2005) Educational Research: planning conducting and evaluating quantitative and Cooper and Klein Schmidit.(1985) product market strategy on Organizational performance.14<sup>th</sup> edition, ISBN-13: 978 and ISBN- 10.
- Guy, C. (1995). Retail store development at the margin. Journal of Retailing and Consumer Services, 2(1), 25 - 32.



**St. MARY'S UNIVERSITY  
SCHOOL OF GRADUATE STUDIES**

**MARKETINGMANAGEMENTPROGRAM**

Appendix: 1

Dear Respondents

The purpose of this questionnaire is to collect data for these works in requirement on the title of “factors affecting the sales volume of community pharmacies in Addis Ababa”. I would like to emphasis that your response is extremely valuable for the successful completing of this paper and we would immediately appreciate your response for all questions genuinely. I can assure you that the information you provide will be completely anonymous and will not be used for any other purpose, it will use only for academic purpose. I thank you very much in advance for your cooperation and for sacrificing your invaluable time.

N.B: please put a tick mark in the appropriate answer box.

**Part I: Personal Information:**

1. Gender     Male                       Female
2. Age                       18-25 years                       26-30 years  
                                  31-35 years                       36-40 years  
                                  above 41 years
3. Educational level     Under Diploma                       Diploma  
                                  1st Degree                               Master's& above
4. Working experience                       1-5 years                       6-10 years                      Above 11 years

**Part II: Questionnaires related to price, brand, site/Location, efficiency, competitors & sales volume.**

The following questions are prepared to get your views regarding to the sales volume of community pharmacies. Please put mark (√) indicate Strongly Agree (SA), Agree (A), Neutral (N), Disagree (DA) and Strongly Disagree (SDA)

	SA	A	N	DA	SDA
<b>Price</b>					
Competitive and reasonable prices can affect sales volume					
Offering generic alternatives at a lower price can affect sales volume					
Perception of fair pricing and value for money can affect sales volume					
Purchasing decision of a customer can be influenced by pricing which in return affects sales volume					
The Prices of the pharmaceutical products are reasonable.					
The Prices of the Pharmaceutical Products are not volatile.					
<b>Brand</b>					
Exceptional efficiency of the staff including knowledgeable staff can affect sales volume					
The brand of drugs can enhance customer satisfaction and sales volume					
Selling generic products instead of brand ones can affect sales volume					
The choice of customers are on the brands of drugs					
Pharmaceutical importers fulfill customer needs					
<b>Site /Location</b>					
Conveniences of the location of the pharmacy can affect sales volume					
The presence of other pharmacies and healthcare providers in the vicinity can affect sales volume					
High foot traffic areas, easily parking and increased customer visits affects sales volume					
Proximity to the residential areas, medical facilities and accessibilities					

affects sales volume					
Efficiency					
The efficiency of the distribution of pharmaceutical Products in the market are without any difficulties.					
The efficiency of the Ordering system of Pharmaceutical Products from wholesalers is convenient for retailers.					
Offering or selling a diverse range of brand products can affect sales volume					
Competitors					
Pharmaceutical competitors compete in the market based on ethical way.					
Availability of the computations of suppliers on Pharmaceutical products is an important to consumers					
Pharmacies available pharmaceutical Products on time to Customers					
Analyzing competitors' strength and weakness is crucial to affect the sales volume of the pharmacy.					
Sales volume					
Pharmacists play a fundamental role in supporting to increase sales volume of the pharmacies.					
The company uses the different strategy to promote new product and existed product in the market for better sales.					
The company use different strategy to promote and distribute drugs and prescribed drugs					
Overall sales volume of the pharmacies increased based on the way of widening the delivery of its services					

Thank you for your cooperation.