THE EFFECT OF PHYSICAL DISTRIBUTION SERVICE ON CUSTOMER SATISFACTION

(THE CASE OF MOHA SOFT DRINKS INDUSTRY S.C. TEKELEHAIMNOT PLANT)

BY: Daniel Mengistu

A Thesis Submitted to the Graduate Studies of Addis Ababa University School of Commerce in Partial Fulfillment of the Requirements for the Award of Master of Arts Degree in Marketing Management

May,2018

Addis Ababa

THE EFFECT OF PHYSICAL DISTRIBUTION SERVICE ON CUSTOMER SATISFACTION

(THE CASE OF MOHA SOFT DRINKS INDUSTRY S.C. TEKELEHAIMNOT PLANT)

BY: Daniel Mengistu

Advisor: Temesgen Belayneh (Ph.D.)

A Thesis Submitted to the Graduate Studies of Addis Ababa University School of Commerce in Partial Fulfillment of the Requirements for the Award of Master of Arts Degree in Marketing Management

May,2018

Addis Ababa

Addis Ababa University

School of Commerce School of Commerce

Department of Marketing Management

The Effect of Physical Distribution Service

On Customer Satisfaction

(The case of Moha Soft Drinks Industry S.C. Tekelehaimnot Plant)

By: Daniel Mengistu

Approved by Board of examiners

Advisor	Signature	Date
Internal Examiner	Signature	Date
External Examiner	Signature	Date

Statement of Certification

This is to certify that Daniel Mengistu has carried out his research work on the topic entitled ***"The Effect of Physical Distribution Service on Customer Satisfaction: The case of Moha Soft Drinks Industry S.C Tekelehaimnot Plant"*** is her original work and is suitable for submission for the award of master's Degree in marketing management.

Advisor: Dr. Temesgen Belayneh

April, 2018

Declaration

I, Daniel Mengistu hereby declare that the thesis entitled "The Effect of Physical Distribution service on customer satisfaction: The case of Moha Soft Drinks Industry S.C. Tekelehaimnot Plant" submitted by me for the award of master's Degree in marketing management is my original work and it has not been presented for the award of any other Degree, Diploma, Fellowship or any other similar titles of any other university or institutions.

Signature_____

Name: Daniel Mengistu

Date: April, 2018

Acknowledgement

First and foremost, I would like to express my deepest gratitude to the Almighty God for his blessing and for making me accomplish this huge achievement. Next, I would like to express my sincere gratitude to my advisor, Dr, Temesgen Belayneh, for all of his professional guidance, extra comments, building ideas, cooperativeness and good advice and help from the starting to the accomplishment of this study.

Finally, I would like to acknowledge all the participants of this study who gave their time and provided their valuable information. Moreover, my heartfelt thanks goes to everyone that has contributed to this thesis directly or indirectly.

THANK YOU ALL!!!

DANIEL MENGISTU

TABLE OF CONTENTS

page

List of Tables

List of Figures

List of Abbreviations and Acronyms

PDS-Physical Distribution Service

PDS Timeliness-Physical Distribution service Timeliness

PDS Quality- Physical Distribution service Quality

PDS Flexibility- Physical Distribution service Flexibility

ANOVA-Analysis of variance

ABSTRACT

*The purpose of this paper is to investigate the effect of physical distribution service on customer satisfaction in the case of Moha Soft Drinks Industry S.C. Tekelehaimnot Plant. A structured questionnaire was adopted. A quantitative research approach was implemented, and the hypotheses were also tested on a sample of 341 customers out of 377 distributed, giving a valid response rate of 90.5% percent. The questionnaires were analyzed using Cronbach Alpha, descriptive statistics, correlation & regression. The application used to analyze and examine the hypotheses is the Statistical Package for Social Sciences (SPSS) V.20. The findings of independent variable of descriptive statistics has shown that, the mean score of Physical distribution service variables i.e Product Availability, PDS Timeliness, PDS Quality, PDS Flexibility has been 3.94, 3.75, 3.71 & 3.61 respectively. All selected dimensions of physical distribution service independent variables have a significant correlation with the dependent variable "overall customer satisfaction" with 95% confidence interval & at 0.05 p-value, by scoring a Pearson Correlation Coefficient "R-value" value of 0.667**, 0.582**, 0.544** & 0.534** respectively. In this case relatively product availability had a higher strong relationship with overall customer satisfaction than the other three independent variables & the linear combination of physical distribution service predictors' (independent variables) explains 57.3% of the variance in customers' purchases decision. In addition to correlation analysis, further regression analysis was also conducted, and the result indicates that all the selected dimensions of physical distribution service have significant relation with overall customer satisfaction. Finally, the results are useful in identifying physical distribution service focus areas to help Moha Soft Drinks Industry S.C. Tekelehaimnot Plant marketing strategy. As evident from the finding section that, Moha Soft Drinks Industry S.C. Tekelehaimnot Plant is recommended to fully implement physical distribution service dimensions effectively to attract customers that make purchase decision and to increase the sales volume. physical distribution service is one of the competitive advantage area for Moha Soft Drinks Industry S.C. Tekelehaimnot Plant to remain competitive in the soft drinks industry.*

Key words: *physical distribution service, product availability, physical distribution timeliness, physical distribution service quality, physical distribution flexibility.*

CHAPTER ONE

INTRODUCTION

This Chapter presents an overview of the entire study. It includes the background of the study, Statement of the problem, Research questions and Objectives of the study, Significance of the study, Scope and Limitation of the study and Definition of terms and Organization of the study.

1.1 Background of the study

The growth of competition, the raising of customers' expectations and the similarity of basic products that are offered make distribution system so important in determining the final demand for a product. As it becomes more difficult for companies in fast moving consumer goods (FMCG) sector, especially in soft drink industry, to compete on pure product level, creative ones are looking elsewhere for a competitive edge. An effective distribution system can give a company a significant competitive advantage (Schewe and Hiam,1998).

For most firms, distribution system is a key decision for building a successful business. Many companies have built lasting competitive advantages through their choices of distribution systems, which are integrated into coherent and well-executed business models. An excellent distribution system is critical to a company's efficient and profitable performance. In addition, companies with the highest customer retention rates earn the highest profits. (Mei Su Chen,2009).

Weiss and Gershon (2002) noted that, distribution describes all the logistics involved in delivering a company's products or services to the right place, at the right time, for the lowest cost. In the unending efforts to realize these goals, the channel of distribution selected by a business play a vital role in this process. Well-chosen channel constitutes a significant competitive advantage, while poorly conceived or chosen channel can doom even a superior product or service to failure in the market. Effective distribution provides customers with convenience in the form of availability (what, where, when - the right product, at the right place,

at the right time), access (customers' awareness of the availability and authorization to purchase), and support (e.g. pre-sales advice, sales promotion and merchandising, post-service repairs).

Customer Service is increasingly seen as fundamental for retail companies (Ellram et al.,1999), constituting the main outputs of logistics systems in supplier companies as well as the "place" component of their marketing mix (Stock and Lambert, 1994). Christopher (1992) defines "Customer services" as the consistent provision of time and place utility. It has a strong strategic component and aims to enhance "value -in-use", meaning that the product has more worth in the eyes of the customer because service has added value to the core product. In this way significant differentiation of the total offering (that is the core product plus the service package) can be achieved (Christoper,1992).

Physical distribution service is defined as the interrelated package of activities provided by a supplier which creates utility of time and place for a buyer and insures form utility. From the customer's perspectives, then, physical distribution service is the mechanism that assures goods will be available (Perreault *et al.*,1976). Physical distributions generally regarded as part of a general logistics concept, which also includes marketing customer service (Mentzer, Flint & Hult, 2001). As Xing and Grant (2006) declared, Physical distribution deals with finished products and is considered as a part of a firm's out bound logistics that incorporates a relationship between the firm and its customers. They also said that Physical distribution provides time, place and form utilities that are crucial for customer service.

Customer Satisfaction has been a central concept in marketing literature and is an important goal of all business activities. Today, companies face their toughest competition, because they move from a product and sales philosophy to a marketing philosophy, which gives a company a better chance of outperforming competition (Kotler, 2000). Overall customer satisfaction translates to more profits for companies and market share increase. According to Hansemark and Albinsson (2004) "satisfaction is an overall customer attitude towards a service provider, or an emotional reaction to the difference between what customers anticipate and what they receive, regarding the fulfillment of some need, goal or desire". Customer satisfaction is the outcome felt by those that have experienced a company's performance that has fulfilled their expectations (Angelova and Zekiri, 2011).

Customer attraction and satisfaction is highly influenced by the seller's physical distribution capabilities and decisions (Kotler 2006). Effective logistics requires proper management of the supply chain (Boone and Kurtz,2004). Uncoordinated PD is expensive. Effective logistics management can lower costs, provide better customer service and customer satisfaction which translate into competitive advantage and profit for the company.

Measuring customer satisfaction with physical distribution service is a strategic activity by organization seeking to ensure its existence in the competitive environment because one key to customer repeat purchase is customer satisfaction with overall purchase and consumption experience. Physical distribution is not only a cost, it is also a potent tool in demand creation. Companies can attract additional customers by offering better services through physical distribution. Companies lose customers when they fail to supply goods on time.

The main purpose of this research is to examine and assess the physical distribution services of Moha soft drinks industry and its effect on customer satisfaction. MOHA Soft Drinks Industry S.C was formed on the 15th of May 1996. The company was formed after acquisition of four Pepsi Cola Plants located at Addis Ababa (Nifas Silk and T/Haimanot), Gondar and Dessie which were purchased by Sheik Mohammed H. Al-Amoudi in the 18th of January 1996. Currently, with new factory In Mekele and Awassa (Hawassa Millenniums Plant). MOHA is engaged in the production of Pepsi Cola, 7up, Mirinda orange, Mirinda apple, Mirinda pineapple, Mirinda tonic and cool carbonated water. The products are available in 300ml returnable bottle, 1.5litter, 1litter, 500ml PET plastic bottle and in Keg or barrel container. In addition to this MOHA engaged in production of bottled water in 0.5liter PET plastic bottle and returnable glass bottle by the name "cool". Teklehaimanot Pepsi cola plant was established in 1961 as" SABA TEJ" S.C. but nationalized in 1975 replacing the old line and started producing Pepsi Cola, Mirinda and team brands in January 1978. Currently, Teklehaimanot plant is manufacturing Pepsi Cola, 7up, Mirinda orange, Mirinda apple, Mirinda pineapple, and Mirinda tonic in 300ml returnable glass bottle (MOHA Employees Hand Book).

1.2 Statement of the Problem

As long as repeat business is important and as long as customers have chance to go somewhere else, employees must deliver high level of customer satisfaction for a company to be successful.

In a competitive market place that offers meaningful consumer choice alternatives firms that do well by their customers are rewarded by repeat business, lower price elasticity, higher reservation prices, more cross selling opportunities, greater marketing efficiency and a host of other things that usually lead to earnings growth (Fornell et al., 1996). Customer satisfaction with a company's products or services is often seen as the key to company's success and long-term competitiveness.

Smith (2009) in a study of customer relation management (CRM) for the concept of attracting and retaining customers pointed out that organization which did not pay attention to the features and service that customers wanted were in risk of reduced profits and market share. In another study, Kumar, Lemon, and Parasuraman (2006) propose a chain of effects framework for understanding and managing customer lifetime value which affects shareholder value. They had identified econometric and data-related challenges in establishing the link of direct relation among two variables, which means longer is the customers stay, better is the value. They have also suggested directions for future research.

It is clear that an excellent product is no longer sufficient, by itself, to retain customer loyalty. Sophisticated consumers expect the "whole package", which includes distribution service (availability of stock, reliable delivery (Kumar and Sharman, 1992)). Li and Lee (1994) find that in modelling competition between two otherwise equal firms, the one furnishing better service enjoys a larger market share and a price premium. A higher-quality service is thus presumed to lead to greater sales revenue.

One major challenge facing companies is that of attracting and retaining customers in a competitive environment. Companies can attract customers by offering better customer service through physical distribution system that is sufficiently sensitive and flexible to permit timely response to customer requirements and cost effective to ensure profit. A company's failure to provide desired level of customer service leads to customer dissatisfaction and loss of customers. The strategic importance of an effective and efficient Physical distribution system cannot be over-emphasized, especially in soft drink industry where brand loyalty is not strong, but availability and price play major roles in determining the final demand for the products.

Moha Soft Drinks Industry Tekelehaimanot Plant use indirect distribution system through its Depots and Sub- Depots. The company engaged in the production and delivering the products to its Depots and Sub- Depots by its own Vehicles then the Depots distribute the product to the customers (Marketing and sales department of PCTHP).

In spite of the use of Depots there are still instances of stock outs and There is a doubt on whether these (product availability, Physical distribution service timeliness, Physical distribution service quality and physical distribution service flexibility) challenges have not significantly affect customers level of satisfaction.

This gap in the industry, therefore, entails the need to conduct a study investigating the effect of physical distribution service on customer satisfaction. This study has tried to generate empirical evidences that will be a contribution to the literature regarding the relationship between the variables of the study. Besides, to the best knowledge of the researcher, there has not been a study conducted in Ethiopia that tasted the effect of physical distribution service on customer satisfaction.

Thus, the study tried to investigate the effect of Physical Distribution Service on customer satisfaction in Moha Soft Drinks Industry S.Co Tekelehaimanot Plant.

1.3 Research questions

The research has tried to address the following basic questions while doing this research paper.

1. Is there any significant relationship between product availability and customer satisfaction?
2. What is the relationship between PDS timeliness and customer satisfaction?
3. Is there any relationship between PDS quality and customer satisfaction?
4. Is PDS flexibility related to customer satisfaction?

1.4 Objectives of the Study

This study has general and specific objectives related with the above statements and tried to achieve these objectives at the end of the study.

1.4.1 General objective of the study

The general objective of the study is to investigate the effect of Physical distribution service on customer satisfaction, a case of Moha Soft Drinks Industry S.C. Tekelehaimanot Plant.

1.4.2 Specific Objectives of the Study

Particularly, the specific objectives of the study are:

- To ascertain the relationship between product availability and customer satisfaction.
- To determine the relationship between PDS timeliness and customer satisfaction.
- To examine the relationship between PDS quality and customer satisfaction.
- To identify the relationship between PDS flexibility and customer satisfaction.

1.5 Significance of the Study

This study would help Moha soft drinks industry management team to focus on how to provide effective and efficient physical distribution services to satisfy customer. The researcher hopes that from the suggestions and recommendations the management team of Moha Soft drinks industry can make a better decision in order to become effective on handling their customer. This thesis also helps other researchers to conduct further studies on Physical distribution services and its effect on customer satisfaction. In addition to this, this thesis also helps readers to gain knowledge and better understanding in the area of physical distribution service and customer satisfaction.

1.6 Scope of the Study

This study was limited to the effect of Physical distribution services (product availability, Physical distribution service timeliness, Physical distribution service quality and physical distribution service flexibility) on customer satisfaction regarding to MOHA Soft Drinks Industry S.C., Tekelehaimanot plant. Due to the broad nature of Physical distribution, all the customers of the plant (such as hotel, restaurant, bar, Cafe and shop) were included to see the effectiveness of overall physical distribution services to improve customer satisfaction. Therefore, the research did not include other areas than the above listed areas.

1.7 Limitation of the Study

The primary limitation for this study is Moha soft drinks industry has around 8 plants all over Ethiopia. From these 3 plants are in Addis Ababa. However, the study was conducted in Tekelehaimanot plant in Addis Ababa because of time constraint and other resource limitations. This means the data was only collected within Tekelehaimnot pepsi cola plant customers which means that the findings of this questionnaire might not fit with other plants and other soft drinks industry.

The secondary limitation for this study is lack of published data or study that is conducted on physical distribution service in Ethiopia on the soft drinks industry, especially with regard to customer satisfaction. Finding measurement instruments was very difficult so that the researcher has forced to adopt foreign studies as much as possible.

1.8 Operational Definition of Terms

Physical Distribution: - According to Rushton et al. (2010) it is concerned with physical and information flows and storage from raw material through to the final distribution of the finished product.

Customer: - the buyer of the service or product of a company or organization such as hotel, Restaurant, Bar, Cafe and shop.

Customer Satisfaction: - it is the outcome felt by those that have experienced a company's performance that has fulfilled their expectations (Angelova and Zekiri, 2011).

Customer Service: - it is an augmented product feature that adds value for the buyer (Coyle et al., 1996) And also it is a consistent provision of time and place utility (Christopher,1992).

PDS (Physical Distribution Service): - it is an interrelated package of activities provided by a supplier which creates utility of time and place for a buyer, and insures form utility (Perreault et al.,1976). It includes product availability, PDS timeliness, PDS quality and PDS flexibility.

Product Availability: - is the proportion of units, order line, or orders completely filled (Mentzer et al., 1989).

PDS Timelines: - is the Order cycle performance of the entire distribution system linking buyers and sellers. Operationally, it is the time elapsed between placing and receiving an order (Mentzer et al.,1989).

PDS Quality: - According to Mentzer et al. (1989) it depends on the incidence of in-transit damage, shipment of incorrect items and incorrect shipment quantity. It is about the accuracy and quality of the order.

PDS Flexibility: - Is the ability of the physical distribution system to respond to special order and/or unexpected needs of customers (Coyle et al., 2003).

1.9 Organization of the study

The arrangement of the research paper is organized into five chapters; the first chapter deal about background of the study, statement of the problem, research question, objectives of the study, significant of the study, scope of the study and organization of the study. The second chapter of the paper was concerned on presenting the review of the related literature which described the detail theoretical aspects that support and clarify the practical aspects of the study. The third chapter focused on research design and methodology. The forth chapter discusses about data presentation and analysis. The last chapter has presented the summary, conclusion and recommendation of the study.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

This chapter demonstrates the review of related literatures which is classified in to theoretical frame work, empirical review and conceptual framework. The theoretical frame work part includes definition of physical distribution, customer service, physical distribution services, customer satisfaction. And the second part of this chapter is empirical review of previous researches and finally the last part of the chapter is conceptual framework which is about the basic framework of this study and formulation of hypothesis that this study will justify.

2. Review of Theories and Concepts

2.1 Definition of Physical Distribution

The growth in the importance of physical distribution has witnessed a corresponding growth in the number of associated names and definitions that are used. According to Rushton *et al*. (2010) some of the different names that have been applied include: physical distribution, logistics, business logistics, materials management, procurement and supply, product flow, marketing logistics, supply chain management, demand chain management and there are several more.

There is no general name or definitive definition offered, because physical distribution can and do differ dramatically from one industry, company or product to another. So, these many terms are used interchangeably in literature and in the business world. According to Rushton *et al.* (2010) Physical distribution or logistics is concerned with physical and information flows and storage from raw material through to the final distribution of the finished product. They explained that supply and materials management represent the storage and flows into and through the production process, while distribution represents the storage and flow from the final

production point through to the customer or end user. They noted that a major emphasis is now placed on the importance of information as well as physical flows and storage, and an additional and very relevant factor is that of reverse logistics – the flow of used products and returnable packaging back through the system.

Weiss and Gershon (2002) noted that, distribution describes all the logistics involved in delivering a company's products or services to the right place, at the right time, for the lowest cost. Effective distribution provides customers with convenience in the form of availability (what, where, when - the right product, at the right place, at the right time), access (customers' awareness of the availability and authorization to purchase), and support (e.g. pre-sales advice, sales promotion and merchandising, post-service repairs).

Distribution is the process of planning, implementing and controlling the physical flow of materials, final goods and related information from point of origin to point of consumption to meet customer requirements at a profit (Phillip Kotler and Armstrong ,2001). It is the marketing function responsible for movement of products to the final users. It could be said that production is not complete until the goods reach the final users and for this to be accomplished, manufactured goods have to pass through distribution channels.

According to Rushton *et al.* (2010) a supply chain consists of three types of entities, customers, a producer, and the producer's suppliers. Supply chain management oversees and optimizes the processes of acquiring inputs from suppliers (purchasing) converting those inputs into a finished product (production) and delivering those products – or outputs to customers (fulfillments).

The physical distribution systems say that all transporting, storing and product handling activities of a business and a whole channel system should be coordinated as one system that seeks to minimize the total cost of distribution for a given customer service level (Perreault *et al.*, 2010). This systems approach to physical distribution management results in lower costs and better customer service which help to increase customer value and customer satisfaction.

2.1.1 Role and Importance of Physical Distribution in Marketing Strategy

Physical Distribution (PD) primarily is moving goods from origin to destination. Marketing strategy planning is based on meeting customers' needs better than the competitors. It seeks to

create a differential advantage within target segments by which a distinct competitive position relative to other companies can be established and from which profit flows. Delivering the right goods to the buyers at the right time and at the lowest possible cost is an important aspect of every good marketing program.

Coyle *et al.* (2003) explain that Good logistics is business power …. because it helps build competitive advantage. At the end of the day if you cannot get your products to your customers, you will not stay in business very long. This is not to say that you do not need quality products and effective marketing. Both are obviously very important, but they must be combined with effective and efficient logistics systems for long run success and financial viability.

2.1.2 Customer service

Coyle *et al.* (1996) defined customer service as "an augmented product feature that adds value for the buyer. Regardless of how it is defined or perceived, customer services may be the best methods of gaining competitive advantage for many firms(Lambert,1993). It can be used to differentiate a firm's products, keep customer loyal and increase sales and profits (Tucker 1980, cited in Sharma and lambert,1994, p.50). LaLonde and Zinszer (1976) stated that customer service has three main components 1) an activity to satisfy customers' needs 2) a performance measure to ensure customer satisfaction and 3) a philosophy of firm wide commitment. LaLonde *et al.* (1988) defined customer service as a process which take place between the buyer, seller, and third party. The process results in a value added to the product or services exchanged. This value added in the exchange process might be short term as in a single transaction or longer term as in a contractual relationship. The value added is also shared, in that each of the parties to the transaction or contract are better off at the completion of the transaction than it was before the transaction took place. Thus, in a process view; Customer Service is "a process for providing significant value-added benefits to the supply chain in a cost -effective way". Kyj (1987) defines customer service as the set of activities used by an organization to "win and retain customers." The International Customer Service Association (ICSA) defines customer service as "those functions within a business that have customer satisfaction as their responsibility and provide that satisfaction through the fulfillment of sales order demand and/or information needs" (ICSA Certification).

Customer services is increasingly seen as fundamental for retail companies (Ellram *et al*.,1999), constituting the main output of logistics systems in supplier companies as well as the "place" component of their marketing mix (Stock and Lambert, 1992; Lambert,1994). Christopher (1992) defines "customer Service" as the consistent provision of time and place utility. It has a strong strategic component (O'Laughlin and Copacino, 1994; van der Veeken and Rutten,1998), and aims to: …. enhance "value-in -use", meaning that the product has more worth in the eyes of the customer because service has added value to the core product. In this way significant differentiation of the total offering (that is the core product plus the service package) can be achieved (Christopher 1992).

Christopher (2010) suggested that the role of customer service is to provide 'time and place utility' in the transfer of goods and services between buyer and seller. Put another way, there is no value in the product or service until it is in the hands of the customer or consumer. It follows that making the product or service 'available' is what in essence the distribution function of the business is all about. 'Availability' is a complex concept, impacted upon by a galaxy of factors which together constitute customer service. These factors might include delivery frequency and reliability, stock levels and order cycle time, for example. Indeed, it could be said that ultimately customer service is determined by the interaction of all those factors that affect the process of making products and services available to the buyer.

2.1.2.1 components of customer service

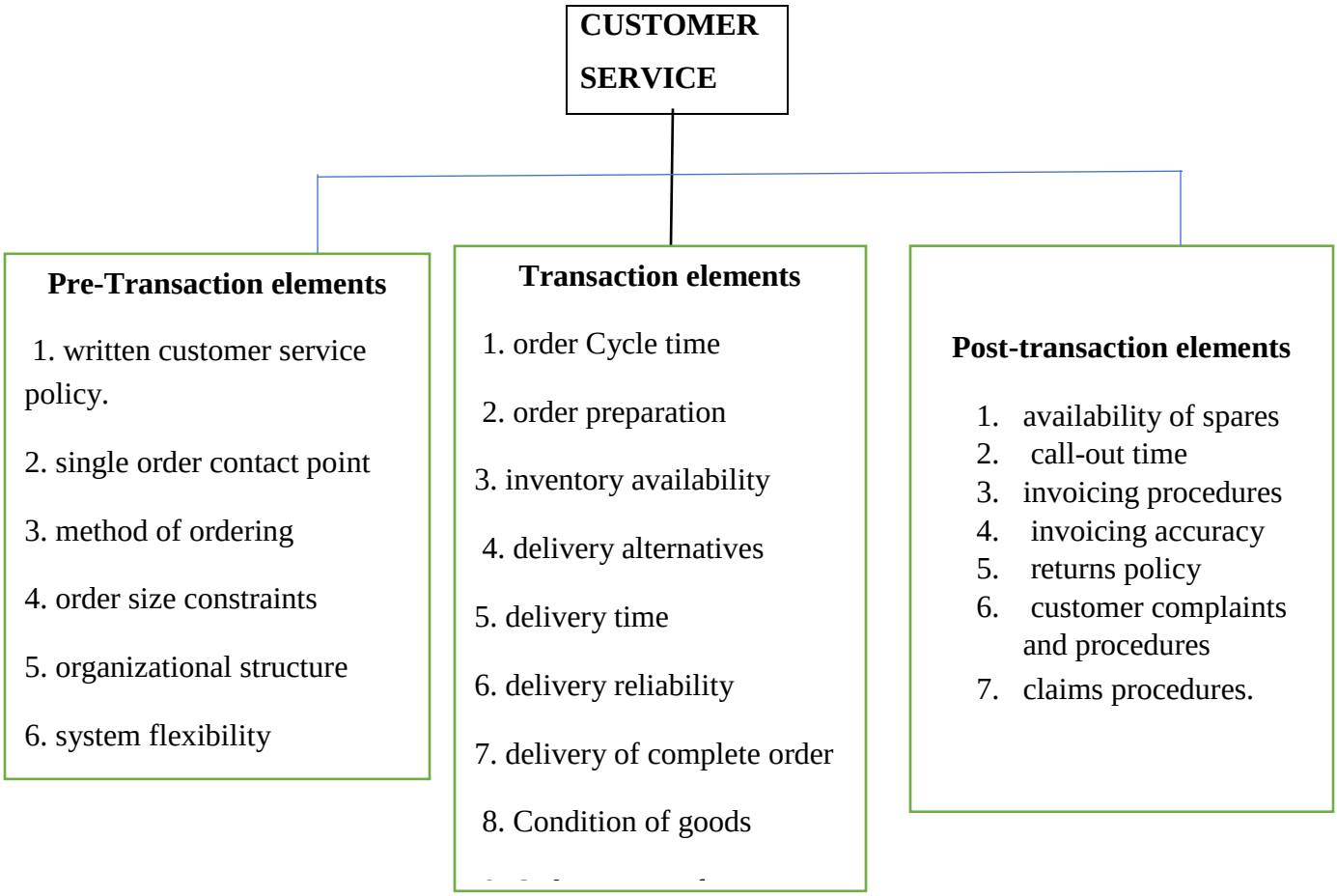
The logistics components of customer service can be classified in different ways. They may be seen as transaction-related elements, where the emphasis is on the specific service provided, such as on-time delivery, or they may be seen as functional attributes that are related to overall aspects of order fulfilment, such as the ease of order taking (Rushton, Croucher and Baker, 2010).

Transaction elements are usually divided into three categories.

1. **Pre-transaction elements**: these are customer service factors that arise prior to the actual transaction taking place.
2. **transaction elements**: these are the elements directly related to the physical transaction and are those that are most commonly concerned with distribution and logistics.

3. **Post- Transaction elements**: these involve those elements that occur after the delivery has taken place.

Elements of customer service



Source: Rushton *et al.* (2010) pp.33

Customer service elements can also be classified by multifunctional dimensions. The intention is to assess the different components of customer service across the whole range of company

functions, to try to enable a seamless service provision. The four main multifunctional dimensions are:

1. **time** – usually order fulfilment cycle time;

2. **dependability** – guaranteed fixed delivery times of accurate, undamaged orders;

3. **communications** – ease of order taking, and queries response;

4. **flexibility** – the ability to recognize and respond to a customer's changing needs.

2.1.2.2 The Importance and Measurement of Customer Service

The importance of customer service is very often affected by substitutability of products. If a product is one that is similar to other products, then consumers may be willing to substitute a competitive product if a stock out occurs. Therefore, customer service is more important for highly substitutable products than situations where customers may be willing to wait or back order a particular product. This means that the more substitutable a product is, the higher the level of customer service that is required. Products in soft drink industry are highly substitutable that higher level of customer service is required.

The growth of competition, the raising of customers' expectations and the similarity of basic products that are offered make customer service so important in determining the final demand for a product. Customer service only represents a small percentage of the cost of a product. Thus, true to pareto 80/20 rule, it is estimated that product surround (augmented product) or logistics elements represent about 80 percent of the impact of the product but only represent 20 percent of the cost (Rushton *et al.*,2010).

No matter how attractive the product may be, it is essential that the customer service elements are satisfactory. And logistics plays a crucial role in providing good customer service which is captured in the definition of PD or logistics as positioning of resources in the right place, at the right time, at the right quality, at the right cost. The definition is explained into what is called the seven "rights" of customer service. These are the right product in the right quantity to the right customer in the right place at the right time in right condition and at the right cost. All of these different aspects are key requisites of a good customer service offering. Each of them is essential

to ensure a product achieves its expected sales in the various markets where it is made available. All of these elements are affected by the standard and quality of the logistics operations that are integral part of getting a product to market. Hence, these elements can provide the basis for identifying the different aspects of logistics that should form part of any customer service offering. Also, these elements should become the basis of the key measurements that are used to monitor operational success or failure of logistics (Rushton *et al.*,2010).

2.1.3 Integration of marketing and logistics Channels

Customer service is a pervasive, boundary-spanning activity that takes place from within and beyond the firm. The key to creating a unified perspective is integration from within the firm and between the firm and the other channel members. Integration within the firm should focus on marketing and logistics activities. These are the primary functions which interface with the customer. The thrust of the firm (to obtain and service demand) occurs through marketing and logistics. Traditionally marketing and logistics have evolved separately within many corporations. Ironically, one key to resolve the role, responsibilities and scope of customer service begins with the integration of these major customer contacting functions (Harris and Stock,1985).

2.1.4 Physical Distribution Service.

Physical distribution service is defined as the interrelated package of activities provided by a supplier which creates utility of time and place for a buyer and insures form utility. From the customer's perspectives, then, physical distribution service is the mechanism that assures goods will be available. Such a definition implicitly excludes product consulting, training seminars, technical services, and similar services not directly related to the order and delivery of a product. These activities, although important, are excluded because they are not a direct concern of the physical distribution mix, rather they are part of the product mix (Perreault et al., 1976).

Physical distributions generally regarded as part of a general logistics concept, which also includes marketing customer service (Mentzer, Flint & Hult, 2001). As Xing and Grant (2006)

declared, Physical distribution deals with finished products and is considered as a part of a firm's out bound logistics that incorporates a relationship between the firm and its customers. They also said that Physical distribution provides time, place and form utilities that are crucial for customer service. Mentzer, Gomez, and Krapfel (1989) examined the evolution and development of Physical distribution and argued that its importance has grown over time; However Mentzer *et al*.(2001) claimed that attendant features of physical distribution service can be the leverage of creating competitive advantage for companies through differentiating companies with superior levels of service; the ability to deliver the right amount of the right product at the right place at the right time in the right condition at the right price with the right information is crucial in providing satisfactory customer service (Mentzer *et al.*,2001).Emerson and Grimm (1996) distinguish between marketing and logistics customer service, both of which are required to meet customer expectations. They describe logistics customer service activities as providing "place, time and form utility, by ensuring that the product is at the right place, at the time the customer wants it, and in an undamaged condition". Its activities are restricted to those that take place during the individual order cycle, from order placement to order delivery. Marketing customer services, on the other hand, are those outside the context of the order cycle. They "facilitate possession utility by creating awareness of the product, offering a mechanism such as price, by which the buyer-seller exchange can take place, and often offering follow -up service and warranty on the product" (Emerson and Grimm,1996, p.29). Physical distribution service is different from most other service industries in terms of who receives the service and the nature of the interaction and is applied to products, rather than people. The service supplier and the customer are physically separated. Contrary to other service industries where the service is intangible, Physical distribution service is somewhat "tangible", demonstrated by the condition and reception time of products that are being delivered (Xing & Grant, 2006).

2.1.5 Physical Distribution Service Versus Customer Service

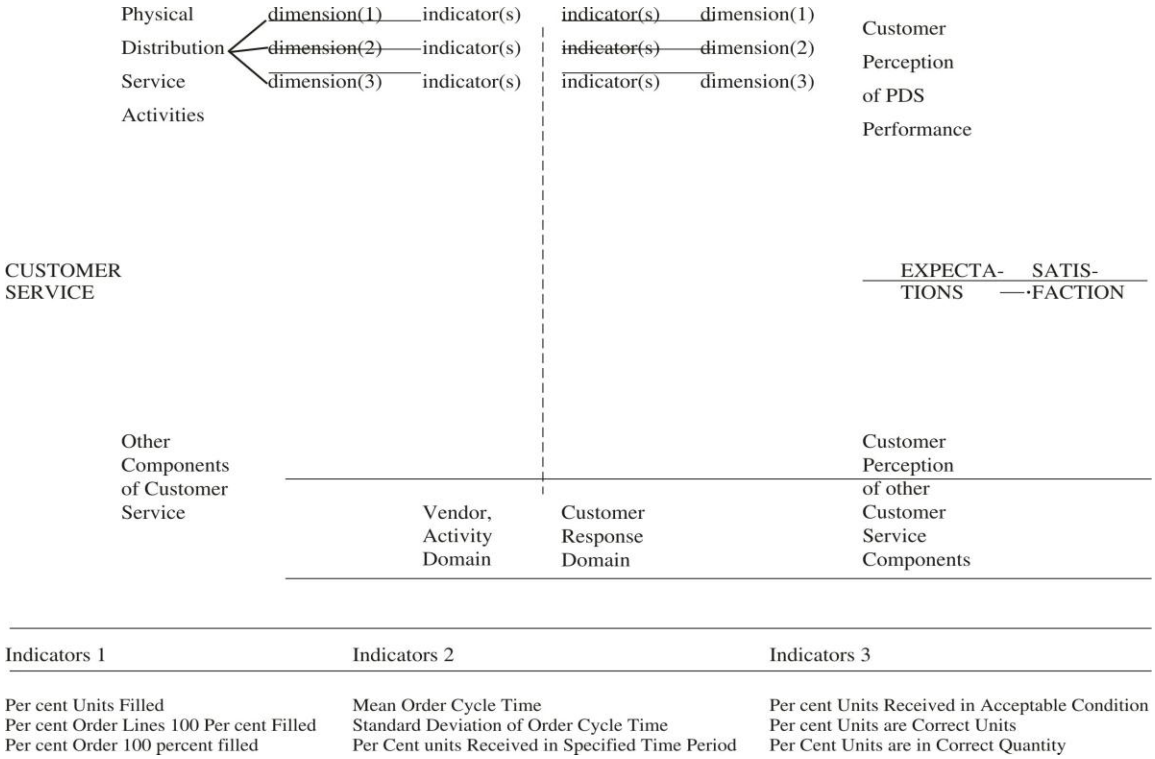
Physical Distribution Service applies only to provision of time and place, and indirectly, form utility. Conversely, customer service is a more generic term that encompasses PDS, but which also includes product design and maintenance, operator training, salesperson attitude and responsiveness, ease of customer interface with the company, guarantees, price, and numerous other activities that facilitate possession utility. Thus, customer service can be said to be

produced by all of the activities a company undertakes to satisfy the customer. Of those activities, PDS results from the subset of activities that provides time and place utility. Physical distribution service focuses on the individual order cycle, commencing with order placement and concluding with satisfactory delivery. Benefits derived from activities outside the context of the order cycle may be aspects of customer service, but they are not in the PDS domain (Mentzer *et al.*,1989).

2.1.6 Physical Distribution services Dimension

Rakowski (1982) in Mentzer et al. (1989) suggested three approaches to organizing the area of customer service (physical distribution being considered a part of overall customer service). These approaches were based on (1) time-phasing (2) operational attributes and (3) functional areas. In the operational attributes approach, Rakowski separated the more objective performance measures (speed, availability, accuracy, consistency and product performance) from the more subjective customer expectation and perception measures (convenience, flexibility, personalized attention, and information). While the performance measures may be easily measured by a selling firm, the customer's expectations and perceptions are of critical importance. Conceptually, in the Vendor Activity Domain, physical distribution service is a family of activities with associated performance measures (figure 2.1). In the customer, Response Domain, physical distribution service is a multidimensional construct with perceptual performance indicator(s) for each dimension.

FIGURE 2.1 Conceptual Customer Service/Satisfaction Model



Adopted from Mentzer et al (1989) pp. 59

Figure 2.1: Shows physical distribution service with dimensions and indicators of each dimension. The dimensions are:

1. **Product availability:** Availability is the proportion of units, order lines, or orders completely filled. Goods that are unavailable must either be backordered, causing time delays and extra costs, or the order is simply cancelled by the customer. Notably, the availability benefit is provided whenever the customer is not required to wait an abnormal length of time, or to place the order again. Thus, an order directed to a location that is stocked out, if filled in timely fashion from another location, does not produce a reduced availability level from the customer's perspective. From the retail perspective, availability is provided if the product is on the shelf for purchase when the customer arrives at the shelf to obtain it (Mentzer *et al.*,1989). Wild (2002) argues that the key objective of inventory control is reflected in attaining the preferred level of product availability as a significant aspect of customer service. According to Trautrims et al. (2009) customer service for retail consumers is manifested by product availability as the fundamental performance indicator of the entire supply chain. Securing the adequate

availability level also raises the service quality level in retail stores, which can make a positive impact on customer loyalty (Beneke et al., 2012) and the business performance of retailers and their suppliers (Mittal et al., 2005). If, however, the demand cannot be met due to insufficient amounts of products on stock, out of-stock (OOS) problem emerges, facing all supply chain members, primarily customers.

It is measured by its indicators, namely: (a) Percent units filled, (b) percent order lines 100 percent filled, and (c) percent order 100 percent filled.

2. **PDS timeliness**: Timeliness is the order cycle time performance of the entire distribution system linking buyers and sellers. For the buyer, it is the time elapsed between placing and receiving an order. Timeliness encompasses the duration of one order cycle for a single customer as well as central tendency and variability across multiple order cycles for one or more customers (Mentzer *et al.*,1989).

It is measured by its indicators, namely: (a) mean order cycle time, (b) standard deviation of order cycle time, and (c) percent units received in specified time period.

3. **PDS quality**: According to Mentzer *et al.* (1989) the quality of physical distribution service depends on the incidence of in-transit damage, shipment of incorrect items, and incorrect shipment quantity. Quality is the most heterogeneous of the constructs, yet it remains a distinct area of customer benefit, clearly within the PDS domain. PDS quality is the "form and composition of the delivery order" (Beinstock et al.,1997, p.32). It is about the accuracy and quality of the order. Research by Millen et al. (1999) identifies significantly improved customer satisfaction as a key benefit of PDSQ. On these lines, research in Spain by Va´zquez Casielles et al. (2002, p. 40) confirms that quality in supplier physical distribution activities has the greatest influence on customer satisfaction.

It is measured by its indicators, namely: (a) Percent units received in acceptable conditions, (b) Percent units are correct units, and (c) percent units are in correct quantity:

4. **PDS flexibility**: is the ability of the firm to rapidly and effectively adjust inventory, packaging, warehousing and transportation of the physical products in respond to customer requirements (Day 1994; Lambert et al.1998). Supplier flexibility should affect

the link between customer service and customer satisfaction. The extent to which a firm will adapt to a customer's needs may be characterized as flexibility (Buffa,1984; Bandyopadhyay and Robicheaux,1997). Providing Flexibility offers the firm an opportunity to meet or exceed the customer's expectations, thereby resulting in customer satisfaction (Oliver, 1980).

It is measured by its indicators, namely: (a) flexible order policies (b) expedite and substitute capacity, and (c) timely response to unexpected needs of customers. This fourth dimension is not shown in the figure, but it is being considered as critically important in modern physical distribution service.

2.1.7 Customer Satisfaction

Customer Satisfaction has been a central concept in marketing literature and is an important goal of all business activities. Today, companies face their toughest competition, because they move from a product and sales philosophy to a marketing philosophy, which gives a company a better chance of outperforming competition (Kotler, 2000). Overall customer satisfaction translates to more profits for companies and market share increase.

Oliver (1981) defined satisfaction "as a summary of psychological state resulting when the emotion surrounding disconfirmed expectations is coupled with the consumer's prior feelings about the consumption experience". Kotler (2000) defined satisfaction as: "a person's feelings of pleasure or disappointment resulting from comparing a product perceived performance (or outcome) in relation to his or her expectations". According to Hansemark and Albinsson (2004) "satisfaction is an overall customer attitude towards a service provider, or an emotional reaction to the difference between what customers anticipate and what they receive, regarding the fulfillment of some need, goal or desire". Customer satisfaction has a positive effect on an organization's profitability. The more customers are satisfied with products or services offered, the more are chances for any successful business as customer satisfaction leads to repeat purchase, brand loyalty, and positive word of mouth marketing. Customer satisfaction leads to repeat purchases, loyalty and to customer retention (Zairi, 2000). Satisfied customers are more likely to repeat buying products or services. They will also tend to say good things and to recommend the product or service to others. On the other hand, dissatisfied customers respond

differently. Dissatisfied customers may try to reduce the dissonance by abandoning or returning the product, or they may try to reduce the dissonance by seeking information that might confirm its high value (Kotler, 2000). Customer satisfaction is the outcome felt by those that have experienced a company's performance that has fulfilled their expectations. (Angelova and Zekiri, 2011).

2.1.7.1 Customer Expectations

Expectations play an important role in the satisfaction formation. The extent to which a product or service fulfills a customer's need and desire may play an important role in forming feelings of satisfaction because of the impact of confirmation or disconfirmation that have on satisfaction. Customers form their expectations from their past experience, friends' advice, and marketers' and competitors' information and promises (Kotler, 2000). Organizations in order to keep expectations from rising, they have to perform services properly from the first time (Parasuraman *et al.*,1988). Thus, customer expectations for the service are likely to rise when the service is not performed as promised.

2.1.7.2 Customer Perception

Perception is an opinion about something viewed and assessed and it varies from customers to customers, as every customer has different beliefs towards certain services and products that play an important role in determining customer satisfaction. Customer satisfaction is determined by the customers' perceptions and expectations of the quality of the products and services. In many cases, customer perception is subjective, but it provides some useful insights for organizations to develop their marketing strategies. Providing high level of quality service has become the selling point to attract customer's attention and is the most important driver that leads to satisfaction. Therefore, customer perception and customer satisfaction are very closely linked together, because if the perceived service is close to customer's expectations it leads to satisfaction. Satisfied customers provide recommendations; maintain loyalty towards the company and customers in turn are more likely to pay price premiums (Reichheld, 1996).

2.2 Review of Empirical Studies

Several studies developed a ranking of factors importance of physical distribution service in supplier evaluation and purchase decisions and also the importance of individual physical distribution elements.

Jackson, Keith, and Burdick (1986) examined the perceived relative importance of six physical distribution service components and how the importance varied across five product types and three buy classes. Purchasing agents from 25 large industrial manufacturing firms were randomly assigned to one product type and one buy class condition. and their finding are although PDS importance's varies across product type, elements such as consistency of delivery, in- stock performance, and lead time stand out as important across most products.

Luce (1982) surveyed the opinions of purchasing managers (located in two industrial areas in Brazil) on the subject of physical distribution service. Respondents were asked to rank order the five purchasing factors and the five PDS elements which they perceived as most important. Final ranking was done by a Wilcoxon matched-pairs signed test conducted for every difference between mean ranking. The rank order of the five purchasing factors were quality, price, PDS, location, and minimum order size. The five PDS elements which were mentioned most often were: accuracy in filling orders, average delivery time, rush services and billing, action on complaints, and order status information.

Levy (1978) conducted a mail survey of manufacturers and wholesalers in the over-the-counter pharmaceutical products industry. The wholesaler questionnaire requested information on the wholesalers' perceptions of their suppliers' (the manufacturers) service performance. The manufacturers' questionnaire requested information on their perception of the importance of each service to their wholesalers. Factor analysis was used to determine the underlying structure of relevant customer service elements. Discriminant analysis was used to determine which customer services are perceived differently by wholesalers and manufacturers. To determine the relative importance of customer service elements, 50 wholesaler executives were telephone surveyed and asked to rank from 1 to 9 each cell of a matrix which crossed the service levels of two customer service elements. Each respondent ranked ten combinations. Through conjoint analysis, the relative importance of the customer service variables and the perceived monetary

value of these services were investigated. The results of the rank ordering of the customer service elements in terms of perceived dollar value were fill rate, terms of sale, lead time, order placement policy, and consistent delivery.

Anderson, Jerman and Constantin (1978) investigated the relative importance of physical distribution goals (elements). In a mail survey, each respondent completed 20 paired comparisons of goals which were converted to an interval scale and the mean values used for the goal ranking. The results of the PDS rankings were order cycle time reliability, percent orders filled, minimum PDS cost, minimum order cycle time, and minimum damage in transit. For this article, the relevance of this finding is that the importance of goals (essentially PDS elements) is the same whether the respondent is top or middle management.

Gilmour (1977) examined the service provided by the major suppliers in the scientific instrument and supplies industry in Australia. Each respondent was shown a list of 17 customer service elements and asked to rank order the five most important for this industry. The average importance of each of the nine most mentioned elements was noted for all customers, for all suppliers and for each of the five types of customer organizations. The five most important purchasing elements for all customers were availability, after-sales service, delivery reliability, delivery time, and technical competence of the representatives.

Perreault and Russ (1976c) examined the role of PDS in industrial purchase decisions (i.e., the importance of PDS, the determinants of its importance, and the determinants of purchaser satisfaction with it). The aggregate results (across all products) of the top five important supplier characteristics were quality, distribution service, price, supplier management, and distance. The respondents were asked to make their replies product specific. The results showed that relative importance of supplier characteristics varied widely across the six products. Only Quality and PDS were consistent as first and second most important across all products. They went on to investigate PDS further by asking respondents to indicate their satisfaction with nine aspects of PDS received from their suppliers. The results indicated that there was most satisfaction with billing procedures, order methods, and accuracy in filling orders. The least satisfaction involved delivery time and delivery time variation. The importance of Perreault and Russ for this article is as an additional example of the importance of PDS across products and industries.

Cunningham and Roberts (1974) examined the role of customer service in influencing industrial buyer behavior. Buyers were asked to name the five most important service factors and to rank them in order. Service factors were then compared by three criteria: 1) times mentioned, 2) times ranked in top 5, and 3) times ranked first. By all three-criteria delivery reliability was indicated to be the most important. The rankings from combined results were delivery reliability, technical advice, test facilities, and replacement guarantee. It was also found that 80% of the buyers formed a favorable impression of suppliers (leading to purchase patronage) based on the suppliers' ability to meet the buyers' need for, 1) quality, 2) service, and 3) price. The nature of this market was such that suppliers had to rely on non-price factors to compete.

The above studies results suggest that across multiple products and industries, physical distribution remains an important element in supplier evaluation, customer perception and satisfaction and the resulting purchase decision. Also, the above studies results suggest that the major dimensions of PDS are availability, timeliness, and quality. These dimensions can be represented by the following indicators: in-stock rate and percent orders, units, and lines filled for the availability dimension; consistent delivery, lead time, average delivery time, order cycle time reliability, and minimum order cycle time for the timeliness dimension; and minimum damage in transit and order-filling accuracy for the quality dimension. Equivalent vendor activity domain indicators for each dimension can be developed: for availability, percent units filled, percent order lines 100% filled, and percent orders 100% filled; for timeliness, mean order cycle time, standard deviation of order cycle time, and percent units delivered in specified time period; and for quality, percent items delivered in acceptable condition, percent of units which are correct items, and percent items are in correct quantity (Mentzer 1989).

The result of this review indicates that these PDS dimensions and indicators are somewhat numerous across products and firms. The result also indicates that the conceptual model may be reduced to reflect only the three major dimensions which have been derived from the customer’s perceptive and which also have quantifiable performance indicators (Mentzer et al 1989).

Emerson and Grimm (1999) investigated the effect supplier flexibility contribute to customer satisfaction with customer service, data were collected by questionnaire from 230 power tool resellers in the USA. Finally, it was hypothesized that as supplier flexibility increased, the impact of customer service on customer satisfaction would increase. As expected, the results

confirm the hypothesis. There may be several reasons for this. For instance, if flexibility is thought of as the matching of a reseller's needs by a supplier (Kyj, 1984), then as the amount of matching increases, the amount of product availability, supplier communication and the like that is required will increase simply to continue to be flexible. For example, if a reseller goal is to carry less inventory, they will look to the supplier to provide smaller, more complete orders and thus be more flexible. Additionally, as flexibility goes to the limit, more and more service is required to get the last reseller to be satisfied (Bowen et al., 1989). Finally, when supplier flexibility is the norm, the reseller may experience rising expectations, thus requiring greater and greater amounts of service to meet them.

2.3 Conceptual Framework and Hypothesis of The Study

2.3.1 Conceptual Frame work of the study

The below diagram, shows the proposed conceptual framework to serve as foundation of this study. According to the figure, customer satisfaction the Dependent variables. Physical distribution services (product Availability, PDS Timeliness, PDS Flexibility and PDS quality) are the Independent Variables.

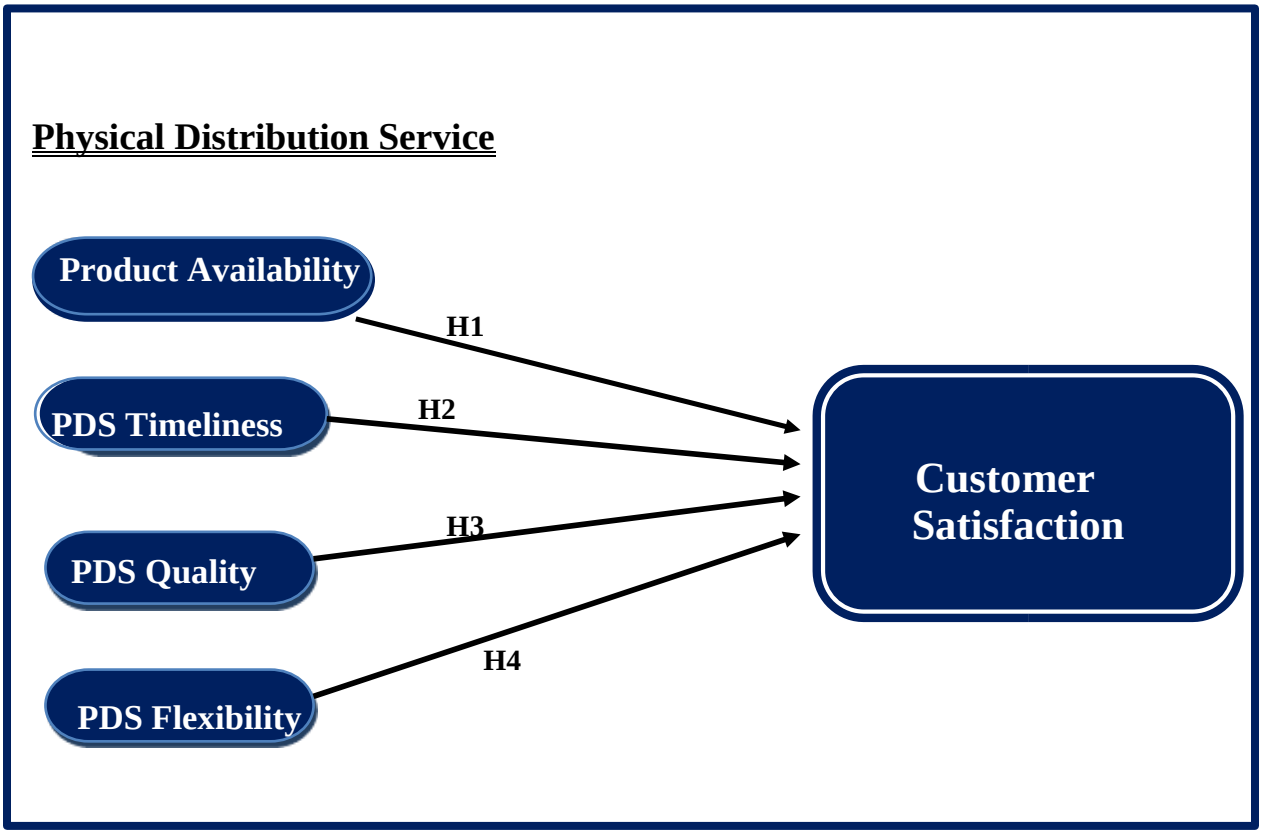


Figure 2.2: Conceptual framework

Source: Adopted from Mentzer et al (1989).

2.3.2 Hypothesis of the study

The theory which support the hypothesis formulation was discussed in the empirical review.

H1: *There is a significant and positive relationship between product availability and customer satisfaction in the case of moha soft drinks industry s.c. tekelehaimnot plant.*

H2: *There is a significant and positive relationship between PDS timeliness and customer satisfaction in the case of moha soft drinks industry s.c. tekelehaimnot plant.*

H3: *There is a significant and positive relationship between PDS quality and customer satisfaction in the case of moha soft drinks industry s.c. tekelehaimnot plant.*

H4: *There is a significant and positive relationship between PDS flexibility and customer satisfaction in the case of moha soft drinks industry s.c. tekelehaimnot plant.*

CHAPTER THREE

RESEARCH METHODOLOGY

This chapter explains the research methodologies employed. It includes description of the study area, research approach, research design, population of the study, sample size, sample techniques, source of data, instruments of data collection, and method of data analysis. It also includes validity, reliability and ethical issues to insure the quality standard of the research.

3.1 Description of the Study Area

This study was conducted in MOHA Soft Drinks Industry Taklehaimanot plant that is found in Addis Ababa city administration which is the capital city of the Ethiopia. It was selected due to the fact that it is the largest factory in terms of soft drinks production and have large number of customers (start from lideta, tekelehaimot, Piassa, addisu gebeya, burayu, kolfe, torhailoch, ayeretena, alemebank, sebeta, jemo) besides its proximity to the researcher and ease in accessing the respondents with limited financial and time resources. By appreciating the importance of Physical distribution system, this study was designed to examine the effect of physical distribution services on customer satisfaction in MOHA soft drinks industry S.C., Taklehaimanot plant. Currently the company has eight plants, namely: - Nefas silk plant, Teklehaimanot plant, Summit plant, Hawasa plant, Bure plant, Gondar plant, Dessie plant and Mekele plant. The product mixes of the company are Pepsi Cola, Mirinda, 7UP, Mirinda Orange, Mirinda Pineapple, Mirinda apple, Mirinda Tonic, and cool carbonated water.

3.2 Research Approach

This study used a quantitative research which is deductive in nature. According to (Bhattacherjee, 2012), the goal of deductive research is to test concepts and patterns known from theory using new empirical data. Hence deductive research is theory testing research which is the objective of the research is not just to test a theory, but also to refine, improve, and possibly extend it. (Saunders, et al., 2012) stated that "quantitative research is usually associated with a deductive approach as well as with positivism, where the focus is on using data to test theory.

The essence of quantitative research is to use a 'theory' to frame and thus understand the problem at hand. It is grounded in the basic attitude that knowledge about reality can also be obtained 'through the eyes of the researcher'. In order to make this happen, theory is most often translated into a conceptual model and elaborated predominantly by means of hypotheses (Kothari, 2004). For the researcher conducting quantitative research implies carefully operationalizing a theory and subsequently measuring it by means of variables and questions. The researcher needs to justify the way in which he has designed and operationalize the research methodologically and technically (Jonker, et al., 2010).

Thus, in this study, the researcher was used quantitative approach, the rationale behind using this approach was as the study is based on deductive approach where the hypotheses of the study tested and finally the relationship among variables established.

3.3 Research Design

In simple terms a research design is a plan of methods and procedures that is used by researchers to collect and analyze the data needed. Decisions regarding what, where, when, how much, by what means concerning an inquiry or a research study constitute a research design (Kothari, 2004).

The descriptive research sets out to describe and to interpret what it is. It aims to describe the state of affairs as it exists. The major purpose of descriptive research is describing the state of affairs as it exists at present. On the other hand, Explanatory research is conducted when we encounter an issue that is already known and have a description of it. The desire to know why to explain is the purpose of explanatory research(kothari,2004). Thus, explanatory research aims to understand phenomena by discovering and measuring casual relations among them.

This researcher collects data on four dimensions of PDS from customers of Moha Soft Drinks Industry S.C. Tekelehaimnot Plant to describe the effect on customer satisfaction across four dimensions. So, the researcher used descriptive research and analyze the causal relations between the dependent variable (Customer satisfaction) and the independent variables (PDS dimensions) using correlation and regression, which makes the research explanatory, and this makes the research both descriptive and explanatory.

3.4 Population and Sampling

3.4.1 Population of the study

A population is defined as the set of individuals, objectives, or data from where a statistical sample can be drawn (Saunders et al.,2007). The total population of the study comprised of customers of MOHA soft drinks industry S.C tekelehaimnot plant. Statistically, the population of the study consisted of all the customers in Taklehaimanot plant which is 6579 and includes both Hotels, Restaurants, Bars, Cafes and shops in 2016/17 G.C (Marketing and sales department of PCTHP).

3.4.2 Sample size and Sampling Techniques

3.4.2.1 Sample size

According to Taro Yamane (1967) Sample size refers to the number of items to be selected from the universe to constitute a sample. Determining sample size is a very important issue since samples that are too large may waste a lot of time, capital and other resources, while samples that are too small may lead to inaccurate results(Kothari,2004).

From the total population of 6579 types of outlets of Moha Soft Drinks Industry Telelehaimanot Plant, Sample Size was determined to be 377 by using Simplified formula developed by Taro Yamane (1967). This formula is important to calculate the sample sizes and is shown below. A 95% confidence level and P = 5% are assumed for the Equation.

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

Where n=Sample Size

N=the finite population (Population size)

e= Level of Significance (or limit of tolerable error)

1=Unity (is a constant)

$$n = \frac{N}{1 + N(e^2)}$$
$$N = 6579$$
$$e = 0.05$$

$$n = \frac{6579}{1 + 6579(0.05^2)}$$
$$n = 377$$

3.4.2.2 Sampling Technique

Sampling technique is a technique used to select suitable sample so as to represent the whole population. There are two common sampling techniques; probability and nonprobability sampling. Probability sampling is where the population has an equal opportunity of being selected but in non-probability sampling method, the probability of being selected is unknown (Bhattacherjee, 2012).

One of the probability sampling techniques, stratified random sampling was employed to draw sample respondents. The reason behind deciding to use stratified random sampling method is to ensure proportional representation of each types of outlets and to give equal chance of being included in the sample. The participants of the study were all customers of Moha Soft Drinks Industry Tekelehaimanot Plant. All customers included by employing stratified sampling techniques because of the researcher believes that it is necessary to include representative respondents from each type of outlets.

The respondents were divided into five outlet types namely; Hotels, Restaurants, Bars, cafe and shops.

The proportionate calculation of the sample: $^{377}/_{6579}$x100 % types of outlets out of total population was selected proportionately. The number of respondents from each Types of outlets a given below.

Table 3.1 Number of Samples from each types of outlets

Types of outlets	Total number	No. of sample
Hotel	561	Total Number 561x377/6579 = **32**
Bar	183	Total Number 183x377/6579= 11
Restaurant	442	Total Number 442x377/6579=**25**
Cafe	687	Total Number 687x377/6579 = 39
Shop	4706	Total Number 4706x377/6579= 270
Total	**6579**	**377**

After this, convenience sampling was used in order to peak individual respondents from each types of outlets. Convenience sampling is a type of non-probability sampling where members of the target population that meet certain practical criteria, such as easy accessibility, geographical proximity, availability at a given time, or the willingness to participate are included for the purpose of the study (Dornyei,2007). The main assumption of associated with convenience sampling is that the members of the target population are homogeneous. That is, that there would no difference in the research results obtained from a random sample, nearby sample, a co-operative sample, or a sample gathered in some inaccessible part of the population (Leiner,2014). Thus, Convenience sampling technique was used by considering proportionate stratified sampling.

3.5 Data Sources and Types

There are two types of sources when collecting data; primary and secondary data sources. Primary sources are directly related to the study purpose. Primary data consists of all the data collected throughout the study. Secondary data on the other hand, contains relevant data that has been collected for a different purpose but from which the conclusion is valuable for the purpose.

The researcher uses both primary and secondary data sources. Primary data is used through conducting questionnaire regarding PDS. Secondary data is used through a theoretical study comprised of different journals, research studies, books, articles, internet websites and report documents from the company.

3.6 Instruments of Data Collection

According to Anol Bhattacharjee (2012) Survey research is a research method involving the use of standardized questionnaires or interviews to collect data about people and their preferences, thoughts and behaviors' in a systematic manner.

Some of the advantages of survey are; first, survey is an excellent vehicle for measuring a wide variety of unobservable data such as people's preferences, traits, attitudes, beliefs behaviors or factual information. Second survey research is economical in terms of research time, effort and cost than most other methods such as experimental research and case research. Third, due to their unobtrusive nature and the ability to respond at one's convenience, questionnaire survey is preferred by some respondents (AnolBhattacherjee,2012).

A questionnaire is a research instrument consisting of a set of questions (items) intended to capture responses from respondents in a standardized manner. Structured questions ask respondents to select an answer from a given set of choices (AnolBhattacharjee,2012).

Hence, survey study was carry out to collect primary data from sample respondents through structured questionnaire. The instrument to be used in this study was a close-ended questionnaire that was developed mainly based on (Mentzer et.,1989) with slight adaptation from the review of related literature. Close-end, mainly Likert-scale, questions was used to collect data from respondents except for questions relates to demographic characteristics of the respondents. The close end questionnaire designed on a five-point Likert scale weighing as 1= Strongly Disagree, 2=Disagree, 3= Neutral, 4= Agree and 5= Strongly Agree. It is a widely used rating scale which requires the respondents to indicates a degree of agreement or disagreement with each of a series of statements or questions (Sekaran,2003). This rating scale is easy to conduct and administer and respondents readily understand how to use the scale.

The questionnaire is divided in to the following sections:

Section One: Demographic variables, the general information will be collected with closed-ended questions.

Section Two: Independent variables, this section measure PDS elements (product Availability, PDS Timeliness, PDS quality and PDS Flexibility).

Section Three: Dependent variables, this section measure customer satisfaction with respect to their last service experience to Moha soft drinks industry tekelehaimnot plant.

3.7 Method of data analysis

The data that were collected through the questionnaires from the customers it was analyzed using the Statistical Package for Social Sciences (SPSS) version 20.0 software. Both descriptive and inferential statistics were used to analyze the data based on objectives of the study.

All the descriptive information on the survey data was analyzed using descriptive statistics such as Percentage, frequency, mean and standard deviation were used.

With respect to inferential statistics, correlation analyses were conducted to check the relationship between the variables. And multiple regression analysis was done to examine weather the independent variables have any influence on the dependent variables, and to estimate magnitude of their contribution.

The multiple regression models have written with four independent variables as:

$$\mathbf{Y = a + b1X1 + b2X2 + b3X3 + b4X4 + e}$$

Where **Y** is the dependent variable- customer satisfaction.

a is the constant or y-intercept of the equation. It represents the value of Y if the independent variables are set equal to zero.

b is the regression coefficient or slope of independent variable Xi or the change in dependent variable for one unit change in independent variable, controlling for other independent variables.

X1, X2, X3, and **X4** are independent variables (Product Availability, PDS Timeliness, PDS Quality, PDS Flexibility).

e represents error term.

3.8 Validity and Reliability of the instrument

3.8.1 Validity

Validity refers to the credibility or believability of the research. The genuinely of the findings and a valid measure of intelligence. It is concerned with whether the findings are really about what they appear to be about (Sounders et al., 2003). Validity defined as the extent to which data collection method or methods accurately measure what they were intended to measure (Sounders

et al., 2003). In order to achieve this objective, the researcher was taken different steps to ensure the validity of the study:

- Data was collected from the reliable sources, from those respondents who have good understanding and experiences in using the service of the company.
- Survey questions were prepared based on pervious empirical review and literature review to ensure result validity.

3.8.2 Reliability

Reliability test was conducted to check the measuring tools employ on the study was free from error, so that the measurement instrument yield a reliable outcome. There are several different reliability coefficients. One of the most commonly used is called Cronbach's Alpha. The reliability of the two scales of measurement of physical distribution services and customer satisfaction was estimated using the Cronbach alpha technique, by which low Cronbach alpha values mean that items do not capture the same construct and high value of Cronbach alpha indicates that items effectively measure and reflect the construct. In order to produce a reliable scale, the Cronbach alpha should be more than 0.70 and any scale with Cronbach alpha less than this scale should not be considered reliable (Gaur A. and Gaur S., 2009).

3.9 Ethical Considerations

In the context of research, according to Saunders, Lewis and Thornhill (2001, p.130) "… ethics refers to the appropriateness of your behavior in relation to the rights of those who become the subject of your work or are affected by it".

The data was collected from those of willingness sample respondents without any unethical behavior or forcefully action. The results or a report of the study was used for academic purpose only and response of the participants were confidential and analyzed in aggregate without any change by the researcher. In addition, the researcher respects the work of previous investigations or study and cited appropriately those works that has been taken as a basis.

CHAPTER FOUR

RESULTS AND DISCUSSIONS

This chapter of the research paper incorporates four parts. The first part discusses about the sample characteristics of the respondents is presented using descriptive statistic. Then correlation analyses and regression analysis, as well as discussion of the result presented accordingly.

4.1 Reliability Test Result

The reliability test is an important instrument to measure the degree of consistency of an attribute which is supposed to measure. As stated by Mahon and Yarcheski (2002) the less variation of the instruments produces in repeated measurements of an attribute the higher its reliability. Reliability can be equated with the stability, consistency, or dependability of a measuring tool. Cronbach's alpha is one of the most commonly accepted measures of reliability. It measures the internal consistency of the items in a scale. It indicates that the extent to which the items in a questionnaire are related to each other. It also indicates that whether a scale is one-dimensional or multidimensional. The normal range of Cronbach's coefficient alpha value ranges between 0- 1 and the higher values reflects a higher degree of internal consistency. Different authors accept different values of this test in order to achieve internal reliability, but the most commonly accepted value is 0.70 as it should be equal to or higher than to reach internal reliability (Hair et al., 2003).

Table 4.1: Cronbach's Alpha Result

Variables	Cronbach's Alpha	N of Items
Product Availability	.799	3

PDS Timeliness	.739	4
PDS Quality	.732	4
PDS Flexibility	.721	3
Customer Satisfaction	.897	3
Overall Reliability	.900	17

Source: Survey Result 2018

Physical Distribution Service was measured using the four dimensions listed in the questionnaire, which were combined into a single scale (Cronbach's alpha = 0.900). Based on the result, all the variables in the construct namely: Product Availability (Cronbach's alpha = 0.799), PDS Timeliness (Cronbach's alpha = 0.739), PDS Quality (Cronbach's alpha = 0.732) and PDS Flexibility (Cronbach's alpha = 0.721) customer satisfaction (Cronbach's alpha = 0.897) was kept for further analyses. An alpha of 0.70 or greater should be considered as adequate to develop a new questionnaire.

4.2 Sample and Response rate

After distributing 377 questionnaires for customers, a total of 350 answered questionnaires were retrieved, which is 92.8% of the total distributed questionnaires. After checking the retrieved questionnaires, the 341 questionnaires were valid for statistical analysis. Ultimately, 90.2% of the total questionnaires distributed entered the analysis.

4.3 Demographic Analysis of Respondents

A total of 341 questionnaires were completed and used in data analysis representing 90.2 percent of response rate. In order to generally describe the characteristics of the respondent; gender, age, educational back ground and business category, product supply frequency were part of the general information questions. Majority of the respondent were males which were 65.4 % and female respondents were 34.2 %.

Table 4.2: Gender of respondents

Gender of respondents					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	223	65.4	65.4	65.4

	Female	118	34.6	34.6	100.0
	Total	341	100.0	100.0	

Source: Survey Result,2018

As to the age of the subjects (13.5 %) forty-six of them were <= 30 years; one hundred four-eight (43.4%) of them were between 31 & 40 years, one hundred one (29.6%) of them were between 41 & 50 years, forty-six (13.5%) of them were greater or equal to 50.

Table 4.3 Age of respondents

Age of respondents					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<=30	46	13.5	13.5	13.5
	31-40	148	43.4	43.4	56.9
	41-50	101	29.6	29.6	86.5
	>=51	46	13.5	13.5	100.0
	Total	341	100.0	100.0	

Source: Survey Result,2018

The educational level of respondents shows that 25.8% of respondents are primary school finished, 32.6 % of them high school completed and 20.5 % of them are diploma holder, 19.1 % of them are degree holders and the remaining 2.1 % are above degree level.

Table 4.4 Education of the respondents

Education of the respondents					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Primary	88	25.8	25.8	25.8
	High School	111	32.6	32.6	58.4
	Diploma	70	20.5	20.5	78.9
	Degree	65	19.1	19.1	97.9
	Above	7	2.1	2.1	100.0
	Total	341	100.0	100.0	

Source: Survey Result,2018

Regarding the business category of the respondents, 9.4 % of the respondents were hotel; 3.2 % of the respondents were Bar and the other 7.3 % and 11.4 % of the business category are Restaurant and Café respectively, and the rest majority were Shop which is 68.6 %.

Table 4.5 Business category of the respondents

Business category of the respondents					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Hotel	32	9.4	9.4	9.4
	Bar	11	3.2	3.2	12.6
	Restaurant	25	7.3	7.3	19.9
	Cafe	39	11.4	11.4	31.4
	Shop	234	68.6	68.6	100.0
	Total	341	100.0	100.0	

Source: Survey Result,2018

Concerning the frequency of supply the product, 64.8% were supplied once a week, 20.8% were supplied twice a week ,13.2% and 1.2 % were supplied every two weeks and monthly respectively.

Table 4.6 Frequency of supply of the products

Frequency of supply of the products					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Twice a week	71	20.8	20.8	20.8
	Weekly	221	64.8	64.8	85.6
	Every two weeks	45	13.2	13.2	98.8
	Monthly	4	1.2	1.2	100.0
	Total	341	100.0	100.0	

Source: Survey Result,2018

4.4 Descriptive Analysis of variables

Descriptive statistics were used to describe the basic features of the data in a study. It provides simple summaries about the sample and the measures. The researcher used descriptive Statistics to present quantitative descriptions in a manageable form; each descriptive statistic reduces lots of data into a simpler summary (Gelman, 2007). The mean scores have been computed for all the four physical distribution service variables by equally weighting the mean scores of all the items under each dimension. Respondents were asked to rate their insight / observation on a five-point Likert type scale ranging from 1 being strongly disagree to 5 strongly agree for physical distribution service dimensions. The result is presented in the Table below.

Table 4.7 Descriptive Statistics of Physical Distribution Service Dimensions

Descriptive Statistics			
	N	Mean	Std. Deviation
Product Availability	341	3.94	.914
Physical Distribution Service Timeliness	341	3.75	.928
Physical Distribution Service Quality	341	3.71	.962
Physical Distribution Service Flexibility	341	3.61	.936
Valid N (listwise)	341		

Source: Survey Result,2018

As it can be seen from table 4.6 above the mean score values of physical distribution services ranges between 3.94 (mean score value of Product Availability) with standard deviation of 0.914 and 3.61 (mean score value of PDS Flexibility) with standard deviation of 0.936. These scores are also the minimum and maximum mean score values of physical distribution service dimensions respectively.

Product Availability

Table 4.8: Descriptive Statistics of product availability

Descriptive Statistics			
	N	Mean	Std. Deviation
The assorted products (mix) are always in stock.	341	3.99	1.098
The units ordered are fully supplied.	341	3.98	1.101
All orders are consistently supplied.	341	3.85	1.039
Valid N (listwise)	341		

Source: Survey Result,2018

Descriptive statistics especially means, and standard deviation was used to evaluate the effect of product availability on customer satisfaction. Under product availability, there were about three specific statements in the form of Likert scale. Each statement focused on the theoretical ground of product availability and how much it influences the customer satisfaction of moha soft drinks industry tekelehaimnot plant customers. The output of the sample statistics shows that having in-stock rate score highest mean of 3.99 and having all orders are consistently has the lowest mean score of 3.85. The overall mean score of Product Availability was calculated to be (Mean=3.94) with the standard deviation (0.914) which is the highest among the other dimensions.

PDS Timeliness

Table 4.9: Descriptive Statistics of PDS Timeliness

Descriptive Statistics			
	N	Mean	Std. Deviation
The time it takes Moha soft drinks industry to supply from receipt of order is right.	341	3.84	1.204
The average delivery time is reliable.	341	3.87	1.120
The percent units delivered in specified time is consistent.	341	3.83	1.138
Products always arrives when promised.	341	3.46	1.464
Valid N (listwise)	341		

Source: Survey Result,2018

As shown in the table above, PDS Timeliness was measured by four items the mean score of which ranged between respondents who said the average delivery time is reliable 3.87 and respondents who said products always arrives when promised with a mean score of 3.46 respectively. The overall mean score of PDS Timeliness was calculated to be 3.75. Therefore, from the analyzed data it is possible to say that customers perceive that moha soft drinks industry is a company that the average delivery time to reach the customer is reliable, but the practice of products always arrives when promised do not done properly.

PDS Quality

Table 4.10: Descriptive Statistics of PDS Quality

Descriptive Statistics			
	N	Mean	Std. Deviation
The percent units received in acceptable condition is right.	341	3.73	1.147
The units that are supplied are in correct units.	341	3.71	1.245
The units that are delivered are in correct quantity.	341	3.71	1.351
The damage in transit is minimum.	341	3.69	1.404
Valid N (listwise)	341		

Source: Survey Result,2018

Under PDS Quality there are four statements which were used to test effect of PDS Quality on customer satisfaction. From the above statistics result, the customers response rate is (Mean=3.71) with the standard deviation (.962), which means the response of the respondents apt to agree up on quality statement questions. Having the percent units received in acceptable condition is right score highest mean of 3.73 and having the damage in transit is minimum has the lowest mean score of 3.69.

PDS Flexibility

Table 4.11: Descriptive Statistics of PDS Flexibility

Descriptive Statistics			
	N	Mean	Std. Deviation
Moha Soft Drinks Industry order policies are flexible enough to permit timely response to changing market demands.	341	3.83	1.034
Moha Soft Drinks Industry has expedited and substitute capacity to respond special customer requests.	341	3.49	1.307
Moha Soft Drinks Industry responds timely to special requests or unexpected needs of customers.	341	3.49	1.149
Valid N (listwise)	341		

Source: Survey Result,2018

As shown in the table above, PDS Flexibility was measured by three items the mean score of which ranged between respondents who said Moha Soft Drinks Industry order policies are flexible enough to permit timely response to changing market demands 3.83 and respondents who believed Moha Soft Drinks Industry responds timely to special requests or unexpected needs of customers with a mean score of 3.49 respectively. The overall mean score of PDS Flexibility was calculated to be 3.61. Therefore, from the analyzed data it is possible to say that customers perceive that Moha Soft Drinks Industry order policies are flexible enough to permit timely response to changing market demands but the practice of expedited and substitute capacity to respond special customer requests and to responds timely to special requests or unexpected needs of customers do not done properly.

4.5 Correlation Analysis

The correlation between independent and dependent variables was analyzed using Statistical Package for Social Science (SPSS). The below correlation matrix shows the correlation between variables in the questionnaire with a Pearson Correlation coefficient. Table 4.12 shows the relationship among the variables considered in the questionnaire.

Table 4.12: Pearson Correlation Matrix

Correlations						
		Product Availability	PDS Timeliness	PDS Quality	PDS Flexibility	Overall Customer Satisfaction
Product Availability	Pearson Correlation	1	.517**	.457**	.516**	.667**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	341	341	341	341	341
PDS Timeliness	Pearson Correlation	.517**	1	.488**	.431**	.582**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	341	341	341	341	341
PDS Quality	Pearson Correlation	.457**	.488**	1	.450**	.544**
	Sig. (2-tailed)	.000	.000		.000	.000

	N	341	341	341	341	341
PDS Flexibility	Pearson Correlation	.516**	.431**	.450**	1	.534**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	341	341	341	341	341
Overall Customer Satisfaction	Pearson Correlation	.667**	.582**	.544**	.534**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	341	341	341	341	341
**. Correlation is significant at the 0.01 level (2-tailed).						

Source: Survey Result,2018

Bivariate Correlation tests whether the relationship between two variables is linear (as one variable increases, the other also increases or as one variable increases, the other variable decreases). In addition to this the Pearson product moment correlation coefficient is a measure of the linear correlation between two variables X and Y, giving a value between +1 and −1 inclusive, where 1 is total positive correlation, 0 is no correlation, and −1 is total negative correlation (Pedhazur, 1982). To furthermore explain the Pearson's correlation; when Pearson's r is close to 1, this means that there is a strong relationship between the two variables. This means that changes in one variable are strongly correlated with changes in the second variable. When Pearson's r is close to 0, this means that there is a weak relationship between the two variables. This means that changes in one variable are not correlated with changes in the second variable (Malhotra 2007). The classification of the correlation coefficient (r) is as follows: - 0.1 – 0.29 is weak; 0.3 – 0.49 is moderate; and > 0.5 is strong (Field, 2005). On the other hand, when Pearson's r is positive (+), this means that as one variable increases in value, the second variable also increases in value. Similarly, as one variable decreases in value, the second variable also decreases in value. This is called a positive correlation. When Pearson's r is negative (-), this means that as one variable increases in value, the second variable decreases in value. This is called a negative correlation (Field, 2005).

Sig (2-Tailed) value: -This value tells that whether there is a statistically significant correlation between two variables or not. If the Sig (2-Tailed) value is greater than 0.05, the researcher can conclude that there is no statistically significant correlation between two variables. That means, increases or decreases in one variable do not significantly relate to increases or decreases in the

second variable. If the Sig (2-Tailed) value is less than or equal to .05, the researcher can conclude that there is a statistically significant correlation between two variables. That means, increases or decreases in one variable do significantly relate to increases or decreases in the second variable (Pedhazur, 1982). The above correlation matrix indicates that physical distribution service variables were positively and strongly correlated with consumer satisfaction. The highest strong coefficient of correlation in this research is between Product Availability variable and customer satisfaction ($r = 0.667$, $n = 341$, $p \leq 0.01$). It connotes that there is a significant positive relationship between Product availability and customer satisfaction. The second highest strong coefficient of correlation is between PDS Timeliness variable and customer satisfaction ($r = 0.582$, $n = 341$, $p \leq 0.01$). Hence, there is a significant positive relationship between PDS timeliness and customer satisfaction. The third highest strong coefficient of correlation is between physical distribution service quality variable and customer satisfaction ($r = 0.544$, $n = 341$, $p \leq 0.01$). Hence, there is a significant positive relationship between physical distribution service quality and customer satisfaction.

The fourth highest strong coefficient of correlation is between physical distribution service flexibility variable and customer satisfaction ($r = 0.534$, $n = 341$, $p \leq 0.01$). Hence, there is a significant positive relationship between physical distribution service flexibility and customer satisfaction. Generally, the above correlation matrix shows that all variables are positively and strongly correlates with the dependent variable.

On the above correlation table, the numbers next to Sig. (2-tailed) shows that all are (.001). The convention implies that if this value is less than .05, then the correlation is considered to be significant (meaning that the researcher can be 95% confident that the relationship between variables is not due to chance). The researcher can connote that there is a significant correlation between the physical distribution service variables and overall customer satisfaction.

4.6 Regression Analysis

Regression is a technique used to predict the value of a dependent variable using one or more independent variables (Albaum, 1997). Regression analysis is a statistical tool for the investigation of relationships between variables. Usually, the investigator seeks to ascertain the causal effect of one variable upon another. To explore such issues, the investigator assembles data on the underlying variables of interest and employs regression to estimate the quantitative

effect of the causal variables upon the variable that he/she influences. The investigator also typically assesses the "statistical significance" of the estimated relationships, that is, the degree of confidence that the true relationship is close to the estimated relationship (Malhotra, 2007).

4.6.1 Assumptions of Linear Regression Analysis

Meeting the assumptions of regression analysis is necessary to confirm that the obtained data truly represented the sample and that researcher has obtained the best results (Hair et al., 1998).

4.6.1.1 Multi-collinearity

One should check for the problem of multicollinearity which is present if there are high correlations between some of the independent variables. The study checks this with the Variance Inflation Factor (VIF) which calculates the influence of correlations among independent variables on the precision of regression estimates. The VIF factor should not exceed 10 and should ideally be close to one.

Tolerance is an indicator of how much of the variability of the specified independent variable is not explained by the other independent variables in the model and is calculated using the formula 1–R2 for each variable. If this value is very small (less than 0.10), it indicates that the multiple correlation with other variables is high, suggesting the possibility of multicollinearity.

A good regression model must not have a strong correlation among its independent variables or must not have a multicollinearity problem and that the value of variance inflation factor (VIF) must have a value between 1 and 10 and the tolerance level should be more than 0.2 (SPSS Inc,2007).

Table 4.13 Multicollinearity Test

Coefficients[a]			
Model		Collinearity Statistics	
		Tolerance	VIF
1	Product Availability	.607	1.647
	PDS Timeliness	.639	1.564
	PDS Quality	.669	1.495

	PDS Flexibility	.662	1.511
a. Dependent Variable: Overall Customer b. Satisfaction			

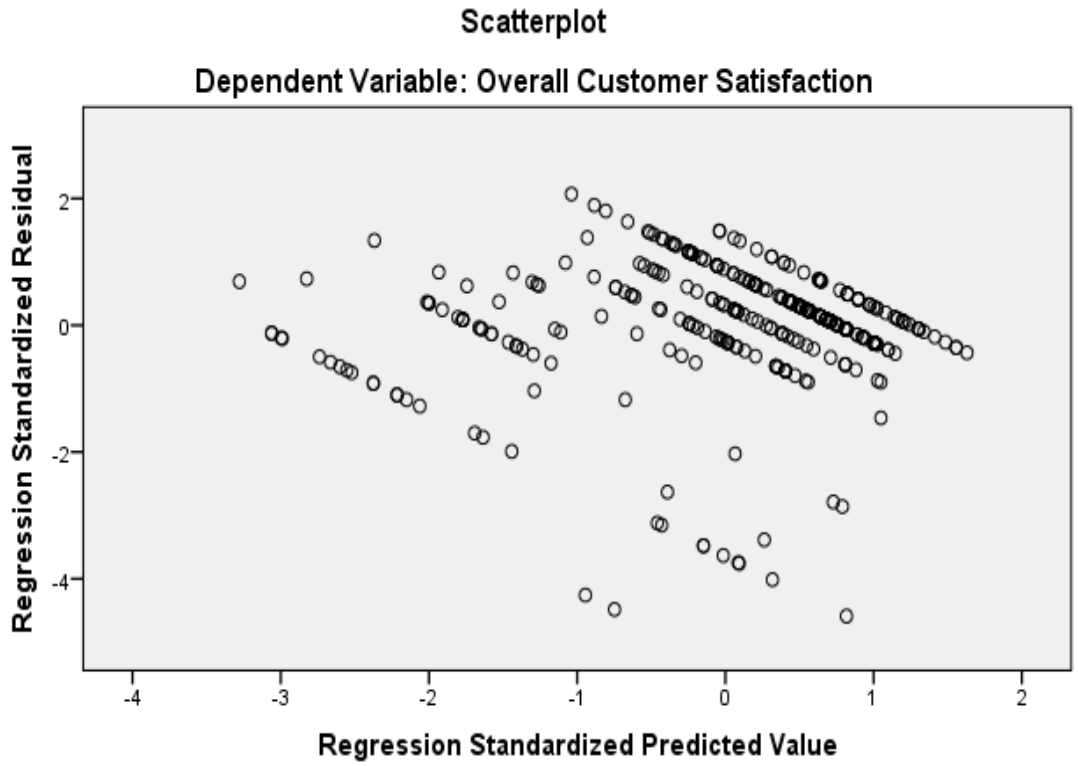
Source: Survey Result,2018

As shown on the table above, based on the coefficients output (collinearity statistics), the obtained variance inflation factor(VIF) for all independent variables was found to be between 1 and 10, which means that there is no multicollinearity problem.

4.6.1.2 Homoscedasticity

Homoscedasticity is an assumption in regression analysis that the residuals at each level of the predictor variables have similar variances. That is, at each point along any predictor variable, the spread of residuals should be fairly constant. For a basic analysis the researcher first plot *ZRESID (Y-axis) against *ZPRED (X-axis) on SPSS because this plot is useful to determine whether the assumptions of random errors and homoscedasticity have been met. The graph of *ZRESID and *ZPRED should look like a random array of dots evenly dispersed around zero. If this graph funnels out, then the chances are that there is heteroscedasticity in the data. If there is any sort of curve in this graph, then the chances are that the data have broken the assumption of linearity.

Figure 4.1 Scatter Plot



4.6.1.3 Linearity

The linearity of the relationship between the dependent and independent variable represented the degree to which the change in the dependent variable is associated with the independent variable (Hair et al., 1998). In a simple sense, linear models predict values falling in a straight line by having a constant unit change (slope) of the dependent variable for a constant unit change of the independent variable (Hair et al., 1998). The study checks for patterns in scatter plots of PDS against customer satisfaction weather they have linear relation and the assumption have met. From the graph above it can be seen that customer satisfaction and PDS have linear relation.

4.6.1.4 Independent errors

For any two observations the residual terms should be uncorrelated (or independent). This eventuality is sometimes described as a lack of autocorrelation. This assumption can be tested with the Durbin–Watson test, which tests for serial correlations between errors. Specifically, it tests whether adjacent residuals are correlated. The test statistic can vary between 0 and 4 with a value of 2 meaning that the residuals are uncorrelated (Field, 2005). In the Table 4.14 Durbin–

Watson test result value is 1.973, which is so close to 2 meaning that the residuals are uncorrelated (or independent).

4.7 Multiple Linear Regression Analysis

Linear regression estimates the coefficients of the linear equation, involving one or more independent variables that best predict the value of the dependent variable (Field, 2005). Multiple linear regression was conducted in order to determine the explanatory power of the independent variables (product availability, physical distribution service timeliness, physical distribution service quality, physical distribution service flexibility) to identify the relationship and to determine the most dominant variables that influenced the consumer satisfaction. The significance level of 0.05 with 95% confidence interval was used. The reason for using multiple regression analysis was to assess the direct effect of PDS variables on the overall customer satisfaction. The table 4.10 shows the model summary of the regression analysis.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.757[a]	.573	.568	.58945	.573	112.546	4	336	.000	1.973

a. Predictors: (Constant), PDS Flexibility, PDS Timeliness, PDS Quality, Product Availability
b. Dependent Variable: Overall Customer Satisfaction

Table 4.14: Model Summary for customer satisfaction

Source: Survey Result,2018

The above regression model presents how much of the variance in the measure of Customer Satisfaction is explained by the underlying physical distribution service variables. Furthermore, to explain R, R2, adjusted R2 and Durbin–Watson in detail: -

R – Indicates the value of the multiple correlation coefficient between the predictors and the outcome, with a range from 0 to 1, a larger value indicating a larger correlation and 1 representing an equation that perfectly predict the observed value (Pedhazur, 1982). From the model summery (R = 0.757) indicates that the linear combination of the four independent variables (product availability, physical distribution service timeliness, physical distribution service quality, physical distribution service flexibility) strongly predict the dependent variable (customer satisfaction).

R Square (R2) – indicates the proportion of variance that can be explained in the dependent variable by the linear combination of the independent variables. In another word R2 is a measure of how much of the variability in the outcome is accounted for by the predictors. The values of R2 also range from 0 to 1 (Pedhazur, 1982). The linear combination of physical distribution service variables or predictors' i.e product availability, physical distribution service timeliness, physical distribution service quality, physical distribution service flexibility explains 57.3% of the variance in customers satisfaction and the remaining 42.7 % is explained by extraneous variables, which have not been included in this regression model.

Adjusted R Square (R2) – The adjusted R2 gives some idea of how well the model generalizes and its value to be the same, or very close to the value of R2. That means it adjusts the value of R2 to more accurately represent the population under study (Pedhazur, 1982). The difference for the final model is small (in fact the difference between R2 and Adjusted R2 is (0.573 − 0.568 = 0.005) which is about 0.5%. This shrinkage means that if the model were derived from the population rather than a sample it would account for approximately 0.5% less variance in the outcome.

Durbin-Watson- the Durbin–Watson statistic expresses that whether the assumption of independent errors is acceptable or not. As the conservative rule suggested that, values less than 1 or greater than 3 should definitely raise alarm bells (Field, 2005). So that the desirable result is when the value is closer to 2, and for this data the value is 1.973, which is so close to 2 that the assumption has almost certainly been met.

Table 4.15: ANOVA of customer satisfaction

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	156.417	4	39.104	112.546	.000[b]
	Residual	116.744	336	.347		
	Total	273.161	340			
a. Dependent Variable: Overall Customer Satisfaction						
b. Predictors: (Constant), PDS Flexibility, PDS Timeliness, PDS Quality, Product Availability						

Source: Survey Result,2018

The next part of the SPSS output reports an analysis of variance(ANOVA). The summary table shows the various sum of squares described in the table above and the degrees of freedom associated with each. From these two values, the average sums of squares (the mean squares) can be calculated by dividing the sums of squares by the associated degrees of freedom. The most important part of the table is the F-ratio, which is a test of the null hypothesis that the regression coefficients are all equal to zero. Put in another way, this F statistics tests weather the R2 proportion of variance in the dependent variables accounted for by the predictors is zero and the table also shows the associated significance value that F-ratio(Field,2009). For this data, F is 112.546, which is significant at $P<.0001$(because the value in the column labeled *Sig.*is less than 0.001). This result tells us that there is less than a 0.1% chance that an F-ratio this large would happen. If the null hypothesis proposed about F- ratio were true. Therefore, we can conclude that our regression model results in significantly better prediction of customer satisfaction and that the regression model overall predicts customer satisfaction significantly well.

The regression coefficient

This study intends to identify the most contributing independent variable in the prediction of the dependent variable. Thus, the strength of each predictor (independent variable) influencing the criterion (dependent variable) can be investigated via standardized Beta coefficient.

The regression coefficient explains the average amount of change in the dependent variable that is caused by a unit change in the independent variable. The larger value of Beta coefficient an

independent variable has, brings the more support to the independent variable as the more important determinant in predicting the dependent variable.

Table 4.16: Summary of Coefficient on customer satisfaction

Coefficients[a]										
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	.664	.168		3.946	.000	.333	.994		
	Product Availability	.377	.045	.385	8.403	.000	.289	.466	.607	1.647
	PDS Timeliness	.218	.043	.225	5.047	.000	.133	.302	.639	1.564
	PDS Quality	.176	.041	.189	4.334	.000	.096	.256	.669	1.495
	PDS Flexibility	.147	.042	.154	3.513	.001	.065	.230	.662	1.511
a. Dependent Variable: Overall Customer Satisfaction										

Source: Survey Result,2018

The marked column B is the value for the intercept (a) in the regression equation on the first row, labelled (constant). The numbers below the column ‘‘βeta’’ are the values for the regression coefficients for product availability, physical distribution service timeliness, physical distribution service quality, product distribution service flexibility. In the multiple regression, this standardized regression coefficient Bate (β) is useful, because it allows you to compare the relative strength of each independent variable's relationship with the dependent variable (Pedhazur, 1982).

The above coefficient table shows the constant beta value (β) and p-value of the variables to examine the significance of the hypothesis. The significance level of each variable (P-value) is: .001, .001 .001, .05 and their standardized coefficients are 0.385, 0.225, 0.189 & 0.154 respectively. The p-value of all the independent variables is below 0.05 which implies all have a significant relationship with the dependent variable (customer satisfaction).

Based on these results, the regression equation that predicts overall customer satisfaction based on the linear combination of for product availability, physical distribution service timeliness, physical distribution service quality, product distribution service flexibility is as follows:

The regression equation of customer satisfaction

Y = .664 + 0.385 X1 + 0.225 X2 + 0.189 X3 + 0.154 X4 + e

Where: X1 = product availability

X2 = physical distribution service timeliness

X3 = physical distribution service quality

X4 = physical distribution service flexibility

E = sampling error

4.8 Hypothesis Testing

Hypothesis 1: There is a significant and positive relationship between Product Availability and Customer Satisfaction in the case of moha soft drinks industry s.c. tekelehaimnot plant.

The above result indicates, first, the intercept is 0.664, when all independent variables have a value of zero. Then, moving through the equation, holding PDS timeliness, PDS quality, PDS flexibility remain constant, the product availability increase the customer chance of making satisfaction by 0.385 for each additional product availability level increment. This implies that a one percent increase in product availability results in 38.5 percent increase in customer satisfaction. The p-value for this coefficient is statistically significant ($p<.05$), meaning that product availability is a significant predictor of customer satisfaction. Accordingly, the first

hypothesis which states there is a significant and positive relationship between Product Availability and customer satisfaction is supported by the data collected on this survey as ($P< 0.05$; $\beta=0.385$) hence, the null hypothesis is rejected.

Hypothesis 2: There is a significant and positive relationship between PDS timeliness and Customer Satisfaction in the case of moha soft drinks industry s.c. tekelehaimnot plant.

The second hypothesis which states that there is a significant and positive relation between the PDS timeliness and customers satisfaction is also supported because the P-value of PDS timeliness which is ($P<0.05$; $\beta=0.225$) hence the PDS timeliness has a significant and positive relationship with customer satisfaction, the value of beta ($\beta=0.225$) implies that a one percent increase in PDS Timeliness results in 22.5 percent increase in Customer satisfaction , others factors remaining constant. Thus, the null hypothesis is rejected.

Hypothesis 3: There is a significant and positive relationship between PDS quality and overall customer satisfaction in the case of moha soft drinks industry s.c. tekelehaimnot plant.

The third hypothesis which states, there is a significant and positive relationship between PDS quality and customer satisfaction is also supported because the P-value which is ($p<0.05$; $\beta=0.189$) hence the PDS quality has a significant and positive relationship with overall customer satisfaction; the coefficient of beta 0.189 which means that a unit change in PDS Quality has the influence to increase customer satisfaction by 18.9% assuming all other variables constant. Hence, the null hypothesis is rejected.

Hypothesis 4: There is a significant and positive relationship between PDS flexibility and overall customer satisfaction in the case of moha soft drinks industry s.c. tekelehaimnot plant.

Finally, the regression coefficient finding indicates that PDS flexibility has a significant and positive relationship on Customer satisfaction level ($P<0.05$; $\beta = 0.154$). The coefficient of PDS Flexibility was 0.154 which tell us a unit increase of variable will result an increase in customer satisfaction by 15.4 percent assuming all other variables constant. Therefore, the last hypothesis, H4, which states there is a significant and positive relationship between PDS flexibility and customer satisfaction is also supported and the null hypothesis is rejected.

4.9 Discussion of the Result

This section discusses the main findings of the research and makes comparisons with findings of previous researches.

The research finding show that there is significant and positive relationship between product availability and overall customer satisfaction supports the marketing theory, which says that customer service expectations compared to perceived customer service performance affect satisfaction. The strength of the relationship shows the extent of the impact product availability, which was measured in terms of in-stock rate and percent orders, units and lines filled will make on overall customer satisfaction. This relationship will greatly affect intention to buy.

The finding that there is a significant and positive relationship between PDS timelines and overall customer satisfaction supports Johnson and Gustatson (2000) finding that customer satisfaction is customer's overall evaluation of the purchase and consumption experience with a product, service or provider. The strength of this relationship which PDS timelines, measured in terms of order cycle time, average delivery time and consistent delivery, has with overall customer satisfaction will immensely influence purchase decisions.

The finding that there is significant and positive relationship between PDS quality and overall customer satisfaction also supports Johnson and Gustatson (2000) who found out that customer satisfaction is customers' over all evaluation of the purchase and consumption experience with a product, service or provider. The strength of relationship PDS quality measured in terms of minimum damage in transit, and order filling accuracy has with overall customer satisfaction indicates the extent of impact it makes on overall customer satisfaction.

The finding that there is significant and positive relationship between PDS flexibility and overall customer satisfaction supports substantially Manders (2009) finding that physical distribution flexibility has a significant positive impact on customer satisfaction. Manders' study took place in Netherlands with manufacturing companies producing technical products as units of analysis hence the need to confirm the study finding in a company of Fast Moving Consumer Goods (FMCGs) sector. The Strength of relationship PDS flexibility measured in terms of flexible order policies, expedite and substitute capacity, and meeting customers' special needs, has with overall customer satisfaction indicates the degree of impact it can make on customer satisfaction.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

In this chapter of the study, summary of findings, conclusion and recommendations are stated. The purpose of this study was aimed to examine the effect of physical distribution service on overall customer satisfaction. The factors that affect the overall customer satisfaction are product availability, PDS timeliness, PDS quality and PDS flexibility.

5.1 Summary of Major Findings

The study has investigated about the effect of physical distribution service on customer satisfaction. Since the essence of physical distribution service is under researched area but the most significant aspect of marketing, the researcher entertained to select this topic. Based on this, the overall findings of the research summarized and concluded as follows: -

- The average descriptive statistics for customer satisfaction (dependent variable) result has shown that, the mean score was above the midpoint (3.00) of the likert scale, which means respondents overall customer satisfaction came from the company's physical distribution service variables. Namely product availability, PDS timeliness, PDS quality and PDS flexibility were accumulated on the midpoint & inclined to agree.
- The result of independent variable of descriptive statistics has shown that, the mean score of physical distribution service variables i.e product availability, PDS timeliness, PDS quality, PDS flexibility has been 3.94, 3.75, 3.71 & 3.61 respectively. The result indicated that, the highest mean score from the independent variable is 3.94 for product

availability. Therefore, the company had a better in-stock rate, percent orders, units and lines filled.

- The correlation matrix indicates that the four physical distribution service variables: "product availability, PDS timeliness, PDS quality, PDS flexibility" were positively and strongly correlated with overall customer satisfaction with 95% confidence interval & at 0.01 p-value 2taild, by scoring a Pearson Correlation Coefficient "R-value" of 0.667**, 0.582**, 0.544** & 0.534**. The highest strong coefficient of correlation in this research between physical distribution service variables and customer satisfaction is 0.667. In this case relatively product availability had a higher strong relationship with overall customer satisfaction ($r = 0.667$, $n = 341$, $p \leq 0.01$) than the other three independent variables.
- The last major finding of the regression analysis result is, the three independent variables (product availability, PDS timeliness, PDS quality) contribute to statistically significant level at (p-value = 0.001). The score of the coefficient correlation determination (R2) is 0.573 which indicate, 57.3% of the variability of consumer satisfaction was explained by the four independent variables. The Beta weight score indicated that the effect of product availability is greater than that of other physical distribution service variables. The other variables that were not considered in this study contribute about 42.7% of the variability of overall customer satisfaction level. Accordingly, the study model fit regression equation become $Y = 0.664 + 0.385X1 + 0.225X2 + 0.189X3 + 0.154X4 + e$ and also since, p- value of product availability, PDS timeliness, PDS quality, PDS flexibility is less than 0.05, the researcher can reject the entire null hypothesis and accept all the physical distribution service dimensions.

5.2 Conclusion

The main purpose of the study was to investigate the effect of physical distribution service on overall customer satisfaction. The study was conducted on Moha Soft Drinks Industry S.C. Tekelehaimnot Plant. In order to meet the general objective, stratified random sampling followed by convenience sampling simple method was used. Questionnaire on dimensions of physical distribution service were adopted and distributed to customers of Moha Soft Drinks Industry S.C. Tekelehaimnot Plant.

The entire research objective for this study was attained; the general objective of this study was to investigate the effect of physical distribution service on customer satisfaction in the case Moha Soft Drinks Industry S.C. Tekelehaimnot Plant. All selected physical distribution service variables / dimensions have significant effect on customer satisfaction.

Correlation analysis was conducted to analyze the relationships between variables, the correlation matrix revealed that all coefficient of correlation independent variables were positive and strongly correlate with the dependent variable. Further regression analysis was also conducted to verify if the independent variables have effect on customer satisfaction.

According to the findings, product availability, PDS timeliness, PDS quality, PDS flexibility has significant impact on customer satisfaction. Therefore, all selected dimension of physical distribution service have a significant and positive relationship on the dependent variable.

5.3 Recommendation

There is a significant positive correlation between physical distribution service and customer satisfaction. The researcher forwards the following recommendations based on the research findings and the conclusion drawn in the previous sections.

Most of the mean score of the dependent & independent variable has been accumulated on the midpoint & inclined to agree. in order to have a progressive level of purchase decision by customers, the company should have a good physical distribution service to delight the customers by delivering the promised-on time; then carry out continuous customer need assessment survey to match their vigorous demand; Hence, not understanding the customer's motivations, and preferences can lead to major mistakes. The company should achieve and maintain effective and efficient performance of PDS as an essential strategy for the successful provision of overall customer satisfaction and customer retention.

- It should be important for the company measuring Customer satisfaction on a continuous base with product availability, PDS timeliness, PDS flexibility, PDS quality and their relative importance to purchase decision for necessary feedback and control.
- The company should deliver high physical distribution service as it is the most effective means of positioned in the market.

- The company should focus on efficient PDS delivery as it critical factors in the success of service-oriented business organizations.
- Particularly in the soft drinks industries, as these industries operate in a competitive business environment, it is desirable for the service providers to understand what attributes customers utilized in their assessment of overall PDS and satisfaction.
- The company should give great attention to customer satisfaction as it is becoming an essential to meet the goal of company therefore it's important to give PDS and make the customer satisfy in order to be a strong competitor and customer's choice in the industry.

5.4 Implications for Future Research

The study was conducted only on Moha Soft Drinks Industry S.C Tekelehaimnot Plant out of the eight plants throughout Ethiopia. How ever it would have been more fruitful if it considers all other plants. Therefore, the researcher suggests further researches to be made by incorporating all plant.

This study revealed that customer satisfaction is affected by other variables than the variables under study (product availability, PDS timeliness, PDS flexibility and PDS quality), therefore other variables which could affects customer satisfaction of Fast moving consumable goods(FMCG) is a potential area for further study.

Reference

Angelova, B. (2011). Measuring Customer Satisfaction with Service Quality Using American Customer Satisfaction Model (ACSI Model), International Journal of Academic Research in Business and Social Sciences, Vol. 1, No. 3.

Bandyopadhyay, S. and Robicheaux, R.A. (1997)."Dealer satisfaction through relationship marketing across cultures", Journal of Marketing Channels, Vol. 6 No. 2, pp. 35-55.

Beneke, J., Hayworth, C., Hobson, R., Mia, Z. (2012). Examining the Effect of Retail Service Quality Dimensions on Customer Satisfaction and Loyalty: The Case of the Supermarket Shopper. Acta Commercii, 12(1), 27–43.

Bhattacherjee, A., (2012). Social science research: principles, methods, and practices, 2nd ed., Global Text Project, United States of America.

Bienstock, C.C., Mentzer, J.T. and Bird, M. (1997). "Measuring physical distribution service quality", Journal of the Academy of Marketing Science, Vol. 25 No. 1, pp. 31-44.

Boone, L.E. and Kurtz, D.L. (2004). Contemporary Marketing, 11th Ed. Ohio, Southwest: Thomas Learning.

Buffa, E.S. (1984). Meeting the Competitive Challenge, Dow Jones-Irwin, Homewood, IL. Cateora, P.R. (1990), International Marketing (7th ed.), Irwin, Homewood, IL.

Coyle, J.J., Bardi, J.E., and Largely, C.J. (2003). The Management of Business Logistics: A Supply Chain Perspective 7th Ed. Canada, South Western: Thomas Learning.

Day, G. S. (1994). "The capabilities of market-driven organizations", Journal of Marketing, Vol. 58, No. 4, pp. 37.

Dornyei, Z. (2007). Research methods in applied linguistics. New York: Oxford university press.

Emerson,C.J.and Grimm,C.M.(1996).”Logistics and marketing components of customer service: an empirical test of the Mentzer,Gomes and Krapfel”,*International Journal of Physical Distribution & Logistics Management,*Vol.26 No.8,pp.29-42.

Emerson, C.J. and Grimm, C.M. (1999). "Buyer- seller customer satisfaction: the influence of the environment and customer service", Journal of Business & Industrial Marketing, Vol. 14 Issue: 5/6, pp.403-415.

Field, A., (2009). *Discovering Statistics Using SPSS Third.,* los Angeles: SAGE.

Figueiredo, K., Arkader, R., Lavalle, C., Hijjar, M.F. (2003)."Improving manufacturers’ distribution performance and customer service in grocery products supply in Brazil: a longitudinal study", Integrated Manufacturing Systems, Vol. 14 Issue: 8, pp.664-676.

Fisk, R.F., Brown, S.W. and Bitner, M.J. (1993). “Teaching the evolution of services marketing literature”, Journal of Retailing, Vol. 69 No. 1, pp. 61-103.

Fornell, C. (2001). The Science of Satisfaction, Harvard Business Review, 79 (March). 120–21.

Gaski, J. F. (1996). Distribution channels: a validation study. International Journal of Physical Distribution & Logistics Management, Vol.26, pg. 64.

Gaur, Ajai S. and Gaur, Sanjaya S. (2009). “Statistical Methods for Practice and Research”, 2nd edition; New Delhi: Response Books.

Gelman, A. (2006). Data analysis using regression and multilevel/ hierarchical models. Cambridge University Press.

Geoffrey Marczyk, David DeMatteo, and David Festinger (2005). Essentials for research design, Wileys & Sons,Inc.,Hoboken, New jersey Canada.

Hair, Joseph, Robert P. Bush, and David Ortinau (2003). “Marketing Research: Within a Changing Information Environment”, Boston: McGraw-Hill.

Hansemark, O. C. & Albinson, M., (Service Quality, Vol. 14 (1).

Jackson, Jr., Keith, J. E. and Burdick, R. K. (1986). "Examining the Relative Importance of Physical Distribution Service Elements." Journal of Business Logistics 7 (No. 2): 14-31.

Johnson, D.M. and Gusafsson, A. (2000). Improving Customer Satisfaction, Loyalty, and Profit: An Integrated Measurement and Management System, San Francisco: Jossey-Bass Inc.

Jonker, J. and Pennink, B., (2010). The essence of research methodology: A concise guide for master and PhD students in management science. Springer Science & Business Media.

Kothari C.R., (2004). Research Methodology: Methods and Techniques, 2nd ed., New Delhi: New age international limited publishers.

Kotler, P. (2001). Principles of Marketing: Physical Distribution & Logistics Management, New York: Prentice Hall.

Kotler P. (2006). Marketing Management: Analysis, Planning and Control, 5th Ed., New Jersey: Prentice Hall

Kotler, P. (2000). Marketing Management. 10th edn., New Jersey, Prentice-Hall.

Kotler, P., Armstrong G., Saunders, J. & Wong, V. (1999). Principles of Marketing: 2nd European ed.: Prentice Hall Europe

Kotler, Ph. (1997). Marketing Management: Analysis, Planning, Implementation, and Control. Ninth Edition, Prentice-hall, Inc. 1997: Prijevod, MATE, Zagreb

Kotler, Ph.; Keller, K. L. (2008). Marketing Management.12th Ed., Prentice-Hall, 2006: Prijevod, Mate, Zagreb

Kotler P. and Keller K. L. (2007). Marketing Management, New Delhi India: Practice Hall.

Kumar V., K. N Lemon and Parasuraman. A (2006). 'Managing customers for value: An overview and research agenda', Journal of Service Research, Vol. 9, No.2 pp87-94, November 1.

La Londe, B. and Zinzer, P. (1976). "Customer Service: meaning and measurement", National Council of Physical Distribution management, Chicago, IL.

Lalonde, Bernard j., Martha C. Cooper and Thomas G. Noordewier. (1988). Customer Service: A Management perspective, Chicago, IL: Council of Logistics Management, p.5.

Lambert, D. M., Cooper, M. C. and Pagh, J. D. (1998). "Supply chain management: implementation issues and research opportunities", International Journal of Logistics Management, Vol. 9, No. 2, pp. 1-19.

Leiner, D.J. (2014). Convenience samples and Respondent Pools.1-36.

Luce, F. B. (1982). Physical Distribution Service: A Comparative Study. Unpublished Ph.D. Dissertation, Michigan State University.

Mahon N.E. and Yascheski A. (2002). "Alternative theory of happiness in early adolescents: Clinical nursing research" pp.306-320.

Malhotra, N.K. and Birks, D.F., (2007). Marketing research: An applied approach. Pearson Education.

Manders,J.(2009). "Supply Chain Flexibility aspects and their impact on customer satisfaction", Open University the Netherlands.

Mei Su Chen, Gene C. Lai, (2010). "Distribution systems, loyalty and performance", International Journal of Retail & Distribution Management, Vol. 38 Issue: 9, pp.698-718.

Mentzer, J.T., Gomes, R. and Krapfel, R.E. Jr, (1989). "Physical distribution service: a fundamental marketing concept?", Journal of the Academy of Marketing Science, Vol. 17 No. 1, pp. 53-62.

Millen, R., Sohal, A. and Moss, S. (1999). "Quality management in the logistics function: an empirical study", The International Journal of Quality & Reliability Management, Vol. 16 No. 2, pp. 166-80.

Mittal, V., Anderson, E. W., Sayrak, A., Tadikamalla, P. (2005). Dual Emphasis and the Long-Term Financial Impact of Customer Satisfaction. Marketing Science, 24(4), 544–555. DOI: 10.1287/mksc.1050.0142.

Oliver, R. (1980). ``A cognitive model of the antecedents and consequences of satisfaction decisions", Journal of Marketing Research, No. 17, November, pp. 460-9.

Oliver, Richard (1981). "Measurement and Evaluation of Satisfaction Process in Retail Settings," Journal of Retailing, 57, pp 25-48.

Parasuraman, A.; Zeithaml, Valarie A.; Berry, Leonard L. (1988). SERVQUAL: a multiple-Item Scale for Measuring Consumer Perceptions of Service Quality, Journal of Retailing, Spring88, Vol. 64 Issue 1.

Pedhazur, E.J., (1982). Multiple regression and behavioral science. Explanation and Prediction, 2.

Perreault, W.D., Cannon, J.P. and McCarthy E.J. (2010). Essentials of Marketing: A Marketing Strategy Planning Approach, 12th Ed., New York: McGraw-Hill/Irwin.

Ralf Schellhase, Petra Hardock, Martin Ohlwein, (1999). "Customer satisfaction in business-to- business marketing: the case of retail organizations and their suppliers", Journal of Business & Industrial Marketing, Vol. 14 Issue: 5/6, pp.416-432,

Reichheld F, F. (1996). The Loyal Effect, Harvard Business School Press, Boston.

Rushton, A., Croucher, P. and Baker, P. (2010). The Handbook of Logistics and Distribution Management, 4th Ed., Great Britain: Kogan Page Limited.

Saunders, M. and Lewis, P. & Thornhill, A. (2012). Research methods for business students.

SPSS Inc, (2007). SPSS Statistics 17.0 Brief Guide, Chicago, IL.

Schewe, C.D. and Hiam, A.W. (1998). The Portable MBA in Marketing, 2nd Ed., New York: John Wiley & Sons, Inc.

Sekaran. U. (2003). Research methods for business.4th ed. Hoboken, NJ: John Wiley & Sons.

Shet, N., Deshmukh, S.G. and Vrat, P. (2006). “A conceptual model for quality of service in the supply chain”, International Journal of Physical Distribution & Logistics Management, Vol. 36 No. 7, pp. 547-75.

Smith A.D (2009).'Customer relationship management: a look at incentive programmes and their usefulness in selected service firms', Int.J. International culture and business management, Vol.3, No.1, pp 1-16.

Trautrims, A., Grant, D. B., Fernie, J., Harrison, T. (2009). Optimizing On-shelf Availability for Customer Service and Profi t. Journal of Business Logistics, 30(2), 231–247. DOI: 10.1002/j.2158-1592. 2009.tb00122. x.

Webster, F.E. (1976). The Role of the Industrial Distributor in Marketing Strategy. Journal of Marketing, v. 40, pp. 10-16.

Weiss, H.J and Gershon, M.E (2002). Production and Operation Management.

Wild, T. (2002). Best Practice in Inventory Management. Hoboken: John Wiley & Sons.

William D. Perreault, Jr. and Frederick A. Russ (Apr. 1976). "Physical Distribution Service in Industrial Purchase Decisions", Journal of Marketing, Vol. 40, No. 2, pp. 3-10.

Xing, Y., and Grant, D.B. (2006). Developing a framework for measuring physical distribution service quality of multi-channel and pure player internet retailers. International Journal of Retail and Distribution Management 34 (4/5),278-289.

Yamane, T. (1967). Statistics, An Introductory Analysis. *2nd edn*. New York: Harper and Row.

Zairi, M., (2000). "Managing customer satisfaction: a best practice perspective", The TQM Magazine, Vol. 12 (6), pp.389-494.

Appendixes

Appendix A: Questionnaire

Questionnaire (English)

ADDIS ABABA UNIVERISTY COLLEGE OF COMMERCE

MASTER'S DEGREE IN MARKETING MANAGEMENT

QUESTIONNAIRE FOR CUSTOMERS

Dear valued Respondent,

My name is Daniel Mengistu. I am post graduate student in Addis Ababa University School of Commerce. I am conducting a research on the topic "The effect of Physical Distribution Service on customer satisfaction the case of Moha Soft Drinks Industry Tekelehaimnot Plant" for partial fulfilment of the requirement of Master of Arts in Marketing management. Hence, the purpose of this questionnaire is to collect primary data from customers of Moha Soft Drinks Industry Tekelehaimot plant. As your valuable information is crucial for the success of the study, I kindly request you to take a few minutes to fill the questionnaire. Your response for all questions will be used only for academic purpose and will be kept confidential.

If you have any question, please call me at 0911-837466

Part I: General Information

Please put a tick (√) mark in the box of your response for the following questions.

1. Gender: Male ☐
   Female ☐

2. Age: 30 years & below ☐ 31-40 ☐
   41-50 ☐ 51 and above ☐

3. Educational Level: Primary ☐ Degree ☐
   High School ☐ Above ☐
   Diploma ☐

4. Which of these business categories do you belong?

   Hotel ☐ Restaurant ☐ Shop ☐
   Bar ☐ Cafe ☐

5. How often are you supplied with Moha Soft Drinks Industry Products?

Twice a week ☐ Every two week ☐

weekly ☐ Monthly ☐

Part II: Physical Distribution Services

Please indicate the extent to which you agree or disagree with each of the following statements by putting **"√"** in the appropriate place to choose the number from 1-5 that best represents your level of agreement with the statement.

Keys: **1= Strongly Disagree; 2= Disagree; 3=Neutral; 4= Agree; 5=Strongly Agree;**

S. №	Physical Distribution Service Elements	Measurement scales				
		Strongly Disagree (1)	**Disagree (2)**	**Neutral (3)**	**Agree (4)**	**Strongly Agree (5)**
	Product Availability					
1.	*The assorted products (mix) are always in stock.*					
2.	*The units ordered are fully supplied.*					
3.	*All orders are consistently supplied.*					
	Physical Distribution Services Timeliness					
4.	*The time it takes Moha soft drinks industry to supply from receipt of order is right.*					
5.	*The average delivery time is reliable.*					
6.	*The percent units delivered in specified time is consistent.*					
7.	*Products always arrives when promised.*					
	Physical Distribution Services Quality					

8.	*The percent units received in acceptable condition is right.*					
9.	*The units that are supplied are in correct units.*					
10.	*The units that are delivered are in correct quantity.*					
11.	*The damage in transit is minimum.*					
	Physical Distribution Services Flexibility					
12.	*Moha Soft Drinks Industry order policies are flexible enough to permit timely response to changing market demands.*					
13.	*Moha Soft Drinks Industry has expedite and substitute capacity to respond special customer requests.*					
14.	*Moha Soft Drinks Industry responds timely to special requests or unexpected needs of customers.*					

Part III. Customer Satisfaction

Overall Customer Satisfaction		**Measurement scales**				
		Strongly Disagree (1)	**Disagree (2)**	**Neutral (3)**	**Agree (4)**	**Strongly Agree (5)**
1.	*I am very satisfied with Moha Soft Drinks Industry overall physical distribution service.*					

2.	*I wish more of my suppliers were like Moha Soft Drinks Industry.*					
3.	*It is a pleasure dealing with Moha Soft Drinks Industry.*					

Thank you for your kind Cooperation

Questionnaire (Amharic)

በአዲስ አበባ ዩንቨርስቲ ንግድ ሥራ ኮሌጅ

የማርኬቲንግ ሜጀርማት ደህረ ምረቃ ማሃ ግብር

የደንበኞች ማጠይቅ

ጤፍ ይስጥልኝ ወድ የዚህ ማጠይቅ ማልስ ሰጪ

እኔ ዳንኤል መንግስቱ በአዲስ አበባ ዩንቨርስቲ የንግድ ሥራ ት/ቤት የሚኬቲንግ ሜጅመንት የድህረ ምረቃ ተማሪ ስሆን በሞሃ ለስላሳ ማጠጦች ኢንዱስትሪ ተ/ሃይማኖት ፋብሪካ ያለውን ምርት የማከፋፈል አገልግሎት የደንበኞች እርካታ ላይ የመመረቅያ ጥናቴን በማካሄድ ላይ እገኛለሁ፡፡ ይህ ማስቀቅ የተዘጋጀው ከሞሃ ለስላሳ ማጠጦች ኢንዱስትሪ ደንበኞች የመጀመርያ ደረጃ መረጃ ለማሰባሰብ ሲሆን እርስዎ የሚሰጡ መረጃ ለጥናቱ ከፍተኛ ጠቀሜታ አለው፡፡ ስለሆነም ጥያቄዎቹን በጥንቃቄ እንዲመልሱልኝ በትህትና እየጠይቅሁኝ የሚሰጡ መረጃ ለትምህርት አገልግሎት ብቻ የሚውልና ሚስጥራዊነቱም የተጠበቀ መሆኑን አረጋግጣለሁ፡፡ ማንኛውም ማብራርያ ቢያስፈልዎ እባክዎ በዚህ ስልክ ቁጥር ይደውሉልኝ +251911837466.

ስለ ትብብርዎ በቅድምያ አመሰግናለሁ፡

፡

ክፍል አንድ፡ -አጠቃላይ መረጃ

እባኮዎ ለጥያቄዎቹ ምላሽ ነው በሚሉት ሣጥን ላይ(√) ምልክት በማድረግ ይመልሱ

1. ፃታ ፡ ወንድ ☐ ሴት ☐
2. ዕድሜ 30 እና ከዛ በታች ☐ 31-40☐ 41-5☐ 51 እና ከዛ በ☐
3. የትምህርት ደረጃ፡

   አንደኛ ደረጃ ☐ ሁለተኛ ደረጃ ☐ ዲፕሎማ ☐ ዲግሪ ☐

   ከዛ በላይ☐
4. በየትኛው የንግድ ዘርፍ ወስጥ ይገኛሉ

   ሆቴል ☐ ባር ☐ ሬስቶራንት ☐ ካፌ ☐ ሱቅ☐
5. የሞሐ ለስላሳ ማጠጦችን በምን ያህል ጊዜ ያገኛሉ

   በሣምንት ሁለቴ ☐ በሣምንት ☐ በሁለት ሣምንት ☐ በወር ☐

ክፍል ሁለት፡ - የማከፋፈል አገልግሎት አሰጣጥ

ከዚህ በመቀጠል የቀረቡት ዐረፍተ ነገሮች በሞሐ ለስላሳ ማጠጦች ኢንዱስትሪ ላይ ያለዎትን አመለካከት የሚገልጹ ናቸው፡ ስለዚህ ስለ ማከፋፈያ ቤቱ የምርት ማከፋፈል አገልግሎት አሰጣጥ በእርስዎ አመለካከት ትክክለኛ ብለው የሚሙበትን ከ1-5 ከቀረቡት አማራጮች መካከል በመምረጥ የ (√) ምልክት በማድረግ ምላሽ ይስጡ፡

ተ.ቁ	የማከፋፈል አገልግሎት አሰጣጥ አይነቶች	በጣም አልስማማም (1)	አልስማማም (2)	ገለልተኛ (3)	እስማማለሁ (4)	በጣም እስማማለሁ (5)
	ምርት የማግኘት ሁኔታ					
1	*የምርት ስብጥር (በየዓይነቱ) ሁልግዜ በከምቾት ይኖራሉ፡፡*					
2	*የታዘዙ የምርት ዓይነቶች ሙሉ በሙሉ ይቀርባሉ፡፡*					

3	ሁሉም ትዕዛዞች በሚደበኛነት ቀርበዋል፡፡					
የአገልግሎት አሰጣጥ የጊዜ ገደብ						
4	በምሕ ለስላሳ ማጡኞች ኢንዱስትሪ ትእዛዝ ተቀብሎ እስከ ማቅረብ ድረስ የሚወስደው ጊዜ ትክክል ነው፡					
5	አማካይ የአቅርቦት ጊዜ አስተማማኝ ነው፡					
6	በተቀጣጠው የጊዜ ገደብ ምርት የሚረስ በመኖኛ ሲታይ ዘላቂነት ያለው እና መደበኛ ነው፡					
7	ሁልጊዜ ምርቶች የሚርሱት ቃል በተገበጠት ጊዜ ነው፡					
የአገልግሎት አሰጣጥ ጥራት						
8	ተቀባነት ባለው ሁኔታ የተወሰደው የመኖኛ ምርት መጠን ትክክል ነው፡					
9	የሚርበው የምርት መጠን ልኬት በትክክለኛው የመጠን ልኬት ነው፡					
10	የሚርበው የምርት መጠን በትክክለኛ መጠን እና ብዛት ነው፡					
11	በሚተላለፍ (በትራንዚት) ወቅት የሚርሰው ጉዳት አነስተኛ ነው፡					
የአገልግሎት አሰጣጥና ተለዋዋጭነት						
12	የምሕ ለስላሳ ማጡኞች ኢንዱስትሪ የትዕዛዝ ፖሊሲዎች እንደየ ተቀያያሪ የገበያ ፍላጎቶች የጊዜወን ሚዛን ለማጠት የሚስችል ሁኔታ ያለው ነው፡					
13	ሞሕ ለስላሳ ማጡኞች ኢንዱስትሪ የልዩ ደንበኞች ጥያቄዎችን ሚዛን ለማጠት የሚችል እና የሚጉ አቅም አለው፡					
14	ሞሃ ለስላሳ ማጡኞች ኢንዱስትሪ በየጊዜው የደንበኞችን ልዩ ጥያቄዎች ወይም ያልተጠበቁ ፍላጎቶች ሚዛን ይሰጣል፡፡					

ክፍል ሦስት፡ -የደንበኞች እርካታ

ተ.ቁ	አጠቃላይ የደንበኞች እርካታ	በጣም አልስማማም (1)	አልስማማም (2)	ገለልተኛ (3)	እስማማሁ (4)	በጣም እስማማሁ (5)
1	በአጠቃላይ በሞሃ ለስላሳ ማጠጫ ኢንዱስትሪ የሚፋፈል አገልግሎት አሰጣጥ በጣም እረከቻለሁ፡፡					
2	ከአቅራቢዎቼ እንደ ሞሃ የለስላሳ ማጠጫ ኢንዱስትሪ በአሰራር እንዲበዛልኝ እፈልጋለሁ፡፡					
3	ከሞሃ ለስላሳ ማጠጫ ኢንዱስትሪ ጋር ማሪት ያደስተኛል፡፡					

Appendix B: SPSS out Put

RELIABILITY TEST RESULT FOR INDEPENDENT VARIABLES

Case Processing Summary

		N	%
Cases	Valid	341	100.0
	Excluded[a]	0	.0
	Total	341	100.0

a. Listwise deletion based on all variables in the procedure.

Product Availability

Reliability Statistics

Cronbach's Alpha	N of Items
.799	3

PDS Timeliness

Reliability Statistics

Cronbach's Alpha	N of Items
.739	4

PDS Quality

Reliability Statistics

Cronbach's Alpha	N of Items
.732	4

PDS Flexibility

Reliability Statistics

Cronbach's Alpha	N of Items
.721	3

Customer Satisfaction

Reliability Statistics

Cronbach's Alpha	N of Items
.897	3

Over all reliability

Reliability Statistics

Cronbach's Alpha	N of Items
.900	17

Gender of respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	223	65.4	65.4	65.4
	Female	118	34.6	34.6	100.0
	Total	341	100.0	100.0	

Age of respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<=30	46	13.5	13.5	13.5
	31-40	148	43.4	43.4	56.9
	41-50	101	29.6	29.6	86.5
	>=51	46	13.5	13.5	100.0
	Total	341	100.0	100.0	

Education of the respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Primary	88	25.8	25.8	25.8
	High School	111	32.6	32.6	58.4
	Diploma	70	20.5	20.5	78.9
	Degree	65	19.1	19.1	97.9
	Above	7	2.1	2.1	100.0
	Total	341	100.0	100.0	

Business catagory of the respondents

	Frequency	Percent	Valid Percent	Cumulative Percent

Valid	Hotel	32	9.4	9.4	9.4
	Bar	11	3.2	3.2	12.6
	Restaurant	25	7.3	7.3	19.9
	Cafe	39	11.4	11.4	31.4
	Shop	234	68.6	68.6	100.0
	Total	341	100.0	100.0	

Frequency of supply of the products

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Twice a week	71	20.8	20.8	20.8
	Weekly	221	64.8	64.8	85.6
	Every two week	45	13.2	13.2	98.8
	Monthly	4	1.2	1.2	100.0
	Total	341	100.0	100.0	

Descriptive Statistics

	N	Mean	Std. Deviation
Product Availability	341	3.94	.914
PDS Timeliness	341	3.75	.928
PDS Quality	341	3.71	.962
PDS Flexibility	341	3.61	.936
Overall Customer Satisfaction	341	4.15	.896
Valid N (listwise)	341		

Descriptive statistics of Product Availability

Descriptive Statistics

	N	Mean	Std. Deviation

The assorted products (mix) are always in stock.	341	3.99	1.098
The units ordered are fully supplied.	341	3.98	1.101
All orders are consistently supplied.	341	3.85	1.039
Valid N (listwise)	341		

Descriptive statistics of PDS Timeliness

Descriptive Statistics

	N	Mean	Std. Deviation
The time it takes Moha soft drinks industry to supply from receipt of order is right.	341	3.84	1.204
The average delivery time is reliable.	341	3.87	1.120
The percent units delivered in specified time is consistent.	341	3.83	1.138
Products always arrives when promised.	341	3.46	1.464
Valid N (listwise)	341		

Descriptive statistics of PDS Quality

Descriptive Statistics

	N	Mean	Std. Deviation
The percent units received in acceptable condition is right.	341	3.73	1.147
The units that are supplied are in correct units.	341	3.71	1.245
The units that are delivered are in correct quantity.	341	3.71	1.351
The damage in transit is minimum.	341	3.69	1.404

Valid N (listwise)	341		

Descriptive statistics of PDS Flexibility

Descriptive Statistics

	N	Mean	Std. Deviation
Moha Soft Drinks Industry order policies are flexible enough to permit timely response to changing market demands.	341	3.83	1.034
Moha Soft Drinks Industry has expedite and substitute capacity to respond special customer requests.	341	3.49	1.307
Moha Soft Drinks Industry responds timely to special requests or unexpected needs of customers.	341	3.49	1.149
Valid N (listwise)	341		

Correlations

		Product Availability	PDS Timeliness	PDS Quality	PDS Flexibility	Overall Customer Satisfaction
Product Availability	Pearson Correlation	1	.517**	.457**	.516**	.667**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	341	341	341	341	341
PDS Timeliness	Pearson Correlation	.517**	1	.488**	.431**	.582**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	341	341	341	341	341
PDS Quality	Pearson Correlation	.457**	.488**	1	.450**	.544**

	Sig. (2-tailed)	.000	.000		.000	.000
	N	341	341	341	341	341
	Pearson Correlation	.516**	.431**	.450**	1	.534**
PDS Flexibility	Sig. (2-tailed)	.000	.000	.000		.000
	N	341	341	341	341	341
	Pearson Correlation	.667**	.582**	.544**	.534**	1
Overall Customer Satisfaction	Sig. (2-tailed)	.000	.000	.000	.000	
	N	341	341	341	341	341

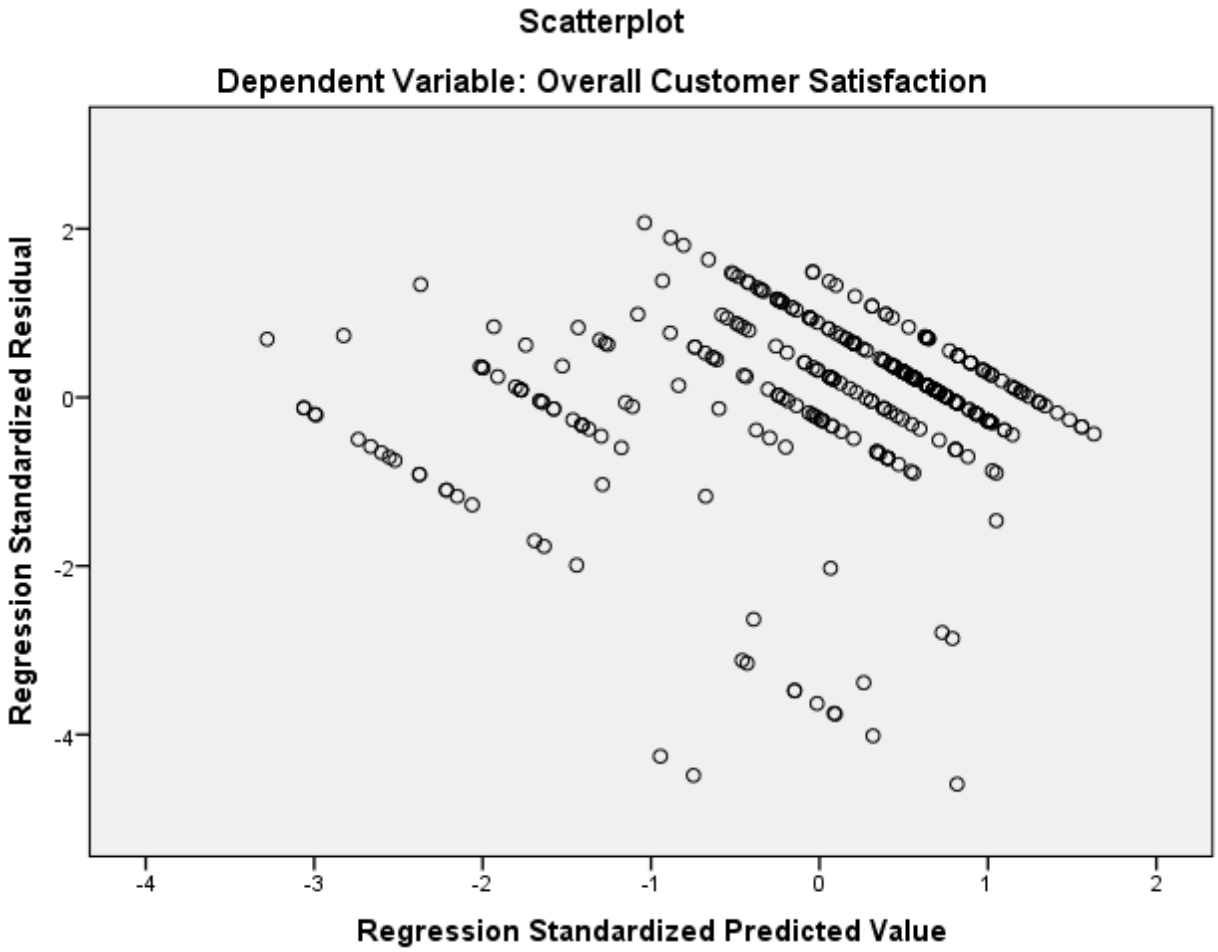
**. Correlation is significant at the 0.01 level (2-tailed).

Multicollinearity

Coefficients[a]

Model		Collinearity Statistics	
		Tolerance	VIF
1	Product Availability	.607	1.647
	PDS Timeliness	.639	1.564
	PDS Quality	.669	1.495
	PDS Flexibility	.662	1.511

a. Dependent Variable: Overall Customer Satisfaction



Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.757[a]	.573	.568	.589	.573	112.546	4	336	.000	1.973

a. Predictors: (Constant), PDS Flexibility, PDS Timeliness, PDS Quality, Product Availability

b. Dependent Variable: Overall Customer Satisfaction

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	156.417	4	39.104	112.546	.000[b]
	Residual	116.744	336	.347		
	Total	273.161	340			

a. Dependent Variable: Overall Customer Satisfaction

b. Predictors: (Constant), PDS Flexibility, PDS Timeliness, PDS Quality, Product Availability

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	.664	.168		3.946	.000	.333	.994
	Product Availability	.377	.045	.385	8.403	.000	.289	.466
	PDS Timeliness	.218	.043	.225	5.047	.000	.133	.302
	PDS Quality	.176	.041	.189	4.334	.000	.096	.256
	PDS Flexibility	.147	.042	.154	3.513	.001	.065	.230

a. Dependent Variable: Overall Customer Satisfaction