THE EFFECT OF AFTER SALES SERVICE ON CUSTOMER SATISFACTION IN ETHIOPIAN ATM VENDORS

SUBMITTED BY: MEKIAS MEKONNEN

ADVISOR: BELAYNESH TEFERA. (PHD)

ADDIS ABABA UNIVERSITY SCHOOL OF COMMERCE
MARKETING MANAGEMENT DEPARTMENT

December, 2022

ADDIS ABABA, ETHIOPIA

THE EFFECT OF AFTER SALES SERVICE ON CUSTOMER SATISFACTION IN ETHIOPIAN ATM VENDOR

A Thesis Submitted to Addis Ababa University in Partial Fulfillment for the Award of the Degree of Masters in Marketing Management

MEKIAS MEKONNEN

ADDIS ABABA UNIVERSITY

MASTER OF ARTS DEGREE IN MARKETING MANAGEMENT POST GRADUATE PROGRAM

ADVISOR: BELAYNESH TEFERA. (PHD)

December, 2022

ADDIS ABABA UNIVERSITY

Master of Arts Degree in Marketing Management Post Graduate Program

---

The effect of After Sales Service on Customer Satisfaction in Ethiopian ATM Vendors

---

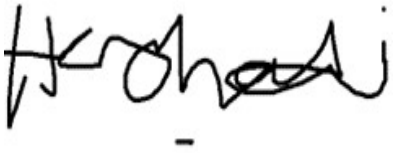
Advisor: Belaynesh Tefera. (PHD)

Signature: _____

Date: _____

Examiners

Internal Examiner: **Hailemariam Kebede. (Assistant professor)**

Signature: 

Date: **December 05, 2022**

External Examiner:

Signature: _____

Date: _____

Statement of certification

This is to certify that Mekias Mekonnen has carried out this thesis work title "**The effect of after sales service on customer satisfaction: in Ethiopian ATM vendors".**

The work is original in nature and is suitable for submission for the award of the Master of Arts Degree in Marketing Management.

Signature: _____

Date: December, 2022

Name of the Advisor: **Belaynesh Tefera (PHD)**

DECLARATION

I the under signed, hereby declare that the thesis entitled "**The Effect of After Sales Service on Customer Satisfaction: Ethiopian ATM Vendors"** is my original work and has not been submitted to any other college, institution or university other than Addis Ababa University for the award of the Degree of Master of art in Marketing management at Addis Ababa and that all sources of material used for the study have been appropriately acknowledged.

Mekias Mekonnen	_____	December 2022
Student	Signature	Date

Email- micomakenzi@yahoo.com
Phone number +251919904950

Contents

Acknowledgement

First of all, I would like to thank to God for letting me through all the difficulties. The completion of this study could not have been possible without the support of Almighty God.

I would like to acknowledge and give warmest thanks to my Advisor: **Belaynesh Tefera (PHD)** for her unreserved support and patience. Her guidance and advice carried me through all the stages of writing this project.

With great sense of gratitude, I want to thank research respondents, Different bank staff members for their motivation and dear time in completing the questionnaires.

My Last but not least thanks go to my seniors, which they have shared their past experience and skills with me. They helped me a lot in sustaining my interest in writing this project.

ABSTRACT

This research paper intended at exploring the effect of after sales service on customer satisfaction through adopting a descriptive and explanatory research design. Staffs from seven Commercial banks and working at head quarter within different departments were selected as the population of this research. The sample size of this thesis project was therefore 290 staffs of the selected banks. The study used first hand data that has been gathered through structured and close ended questionnaires. Correlation analysis was performed to determine the degree of relationship between After sales dimensions namely: installation quality, delivery quality, warranty quality, customer care, maintenance and availability of spare *and customer satisfaction. Multiple regression analysis was also done to evaluate the effect of the above stated explaining variables on customer satisfaction. The study established that at 5% level of significance, there is a positive and significant interconnection between After sales dimensions and customer satisfaction. Furthermore, the study revealed that all the developed constructs have a significant impact on customer satisfaction in the studied area. Finally, the research found that maintenance and availability of spare parts is the highest significant factor that affects customer satisfaction followed by customer care, delivery quality, installation quality and warranty quality. Hence, Moti engineering should ensure the right availability of spare parts at the right time for the buyer's needs without fail and should provide at most care for customers to boost customer satisfaction.*

Keywords: Customer satisfaction, After sales service, *installation quality, delivery quality, warranty quality, customer care, maintenance and availability of spare parts*

List of acronyms

ASS – After Sales Service

B2B – Business to Business

ME – Moti Engineering

SPSS - Statistical Package for Social Science

List of tables

List of figures

Chapter One

1. Introduction

This chapter being the first chapter of the study gives an insight about the concept of the research and deals with conceptual background of the study, statement of the problem which served as the motivation for the research, research questions and the objectives of study. This section also consists of the scope of study, significance of the study and finally organization of the study for which the research is structured. The main purpose of the study was to examine the effects of after sales service on customer satisfaction in Moti engineering P.L.C.

1.1 Background of the Study

After sales service can be termed as a "set of activity that comes after sale of product that serve as supporting service to customers to crate customer loyalty" (Saccani et. al, 2007; Rigopoulou et. al, 2008). It is true that after sales service, enable sellers to gain competitive advantage over other competitors engaged on similar business. Moreover, after sales service helps the organization to attract new customers whereby a satisfy customers will have a positive word of mouth or recommend other to buy a product from the organization (V. Nivethika, 2015)

As Posselt & Eitan, (2005) explains in this highly competitive business environment, seller and buyer relation shall not be considered as an end in buying and selling process. It has gone beyond it, becoming more challenging than ever to capitalize the advantage to the buyer as well as the seller. It is the fact that satisfied customer will establish trust over the seller and will lead to a repetitive purchase in the future. Moreover, after sales service is the new method for maintaining customer satisfaction.

The significance of after-sales service quality has been broadly recognized in all industry sectors, not limited to in pure service sectors but also in sectors where service realized as a part of an augmented product (Rigopoulou et al. 2008). Besides, Rigopoulou et al. (2008) came up with the ever-increasing relative importance of the after-sales service quality to the core products/services as a part of differentiation strategy. Most previous studies established the strongest association between after-sales service quality, customer satisfaction, customer loyalty, and profitability

(Anderson and Mittal (2000). Hence, as supported and revealed by many previous research findings studies after-sales service quality significantly affects customer satisfaction and customer loyalty. Customer loyalty is achieved only when the customers' expectation is fulfilled or exceeded with the products/services (Yang and Peterson, 2004). Excellent after-sales service quality influences both existing and potential customers(Anderson et al. 1994).

Customer is considered as backbone and should be treated as a king in every business engagement. The ultimate goal of every business should be to satisfy their existing customers and attract potential or new customers. At this point the issue of customer satisfaction should be a fundamental priority and it cannot be seen as a separate activity in business. If it is achieved, then it will be considered very significant and it shows how organization are dedicated to provide quality product or services to their customers that in due course increase customer loyalty. Actually, satisfying the customer is the primary objectives of the organization, as it is over and over again explained that customer is boss and boss is always correct, this infers that customer is always correct when he/she demands for After Sale services. To end up with, After Sales service is an emerging concept in the business community(Yuen & Chan, 2010)

Every organization or company has to deliver better After Sale services to make loyal and satisfy its customer. As it has been revealed by Kotler and Armstrong, (2010), Establishing and maintaining good relationship with customers in the process of product or service delivery is referred as Customer Relationship Management. Through customer relationship management, organizations can achieve their objective of retaining and satisfying customers. Customer satisfaction, results in increased demand of product/ service and the organization or brand reputation increases. When organizations sell products effectively it has to make effective planning for services products after sale, such planning is a part of customer relationship management. After sale service is important for organizations to compete in the market by using such extended services (Vitasek, 2005).

In Sale Services, After Sale Delivery and installation is very important for customer satisfaction (Irini R., 2008). Different customers have different needs some want the product to be delivered to their destination at the right time and at the right price, others give value to customer needs and wants, on the other hand poor distribution results in a negative impression (Kotler and

Armstrong, 2010). Such negative impressions result in a poor seller relationship with the consumer. Organizations need to improve relations with customers for effectiveness and to improve their sales turnover. Installation of a product without any error, results in improved satisfaction of the customer, this can reduce the chance of damage, error and assures the customer that the product is valuable, errorless and reliable. Installation process must be handled by an experienced professional; it should also provide a delightful post sale service to the consumer from the organization. Properly managed feedback is important for organization as they would then come to know what the customer needs from the organization, for example the types of changes the organization should be into the product or service line, so that they give more value to the customers. Therefore, services given to consumer After Sales are more valuable to satisfy customer needs, after sale service is very important for organizations to retain customers for a long time and it will generate high profitable relationship with organizations.

Further, After Sales Service involves a continuous interaction between the service provider and the customer throughout the post-purchase product life cycle. At the time, the product is sold to the customer; this interaction is formalized by a mutually agreed warranty or service contract. The exact terms of the warranty or service contract, the characteristics of the customer base, and the nature of the sold product influence the After Sales service strategy of the service provider (Cohen et al., 2006; Oliva and Kallenberg, 2003) as cited in Muhammed,et al (2011).

Goffin and New, (2001) discovered that after-sales services maximized the value extracted by customers over the entire product life cycle. Kurata and Nam, 2010; and Ahn and Sohn, (2009) agreed that after-sales services can create sustainable relationships with customers and contribute significantly to customer satisfaction by offering different after-sales services during the various stages of the primary product lifecycle, the provider can ensure product functionality and thereby customer satisfaction. This may lead to a fruitful relationship between the provider and the customer over time, allowing for more transactions.

On the other hand, in Ethiopia especially in Addis Ababa, there are number of Information technology products solution companies like Moti engineering, SSC communication which provide the After Sales services. Among these companies Moti engineering is one of the leading IT solution products providers Company in Ethiopia. Compared with the other competitors, Moti

engineering's sales turnover has been increasing for the last few years(Company profile). Moti Engineering Plc, headquartered in Addis Ababa with more than 450 employees across 11 district offices, 43 regional branch offices and 60 Point of Presence, serves its clients across the country. The company offers Information Technology (IT) products, solutions, and IT-enabled services including enterprise software solutions and services, infrastructure products and services, and ATM products to Banking & Financial Services, Insurance, Government, Manufacturing, Telecom, Utilities, Corporate and Education segments.

Further, Moti engineering provides a lot of customer services like online support services, spare parts availability, quick repairing, on time services, on lone products for service customers for the repairing period, After Sales customer relations and After Sales service to its customers. Among these services, Moti engineering aimed for providing more priority to deliver the quality After Sales services to its customers (Company Website)

Hence, this particular study has tried to examine the effects of after sales service on customer satisfaction in B2B perspective by taking Moti engineering PLC as case study.

1.2 Statement of the problem

Customer satisfaction is a well-known and established concept in several areas like marketing, consumer research, economic psychology, welfare-economics, and the most common interpretations obtained from various authors reflect the notion that satisfaction is a feeling which results from a process of evaluating what has been received against what was expected, including the purchase decision itself and the needs and wants associated with the purchase Customer satisfaction plays an important role for the success and continuous existence of the company. Customer satisfaction is critical to any product or service, because it is a strong predictor of customer retention and products repurchase (Kotler & Keller, 2012)

The contribution of service quality after sales service towards achieving customer satisfaction through attaining the growing need of customers is very crucial. However, service providers in developing countries like Ethiopia, in their quality of customer services are not like that of developed countries due to the fact that it has short history. The service sector is at its growing stage and needs continuous improvement.

These days, ensuring service quality to customers is important for service where almost similar service is provided. In the history of ATM service providers in Ethiopia, over the past two decades, five more company's were operational and there are significant number on the pipeline and expected to start operation very soon. All of these firms typically offer the same type of services. They are also competing on the same business environment. This provides customers an opportunity of getting low switching cost. Unless business organizations deliver more satisfaction than competitors, with no doubt customers will switch to service providers who can meet their expectation better (Kotler, 2003).

Several researches have been undertaken in the perspectives of After-Sales service Perspective and customer satisfaction in many countries. For instance, a study conducted by Hussain, Bhatti & Jilani (2011) showed that customer satisfaction increases with better service delivery.

Muhammad (2011) and Hawariat and Potluri (2010) are among the researchers who conducted studies on Effect of after-sales services on customer satisfaction. Armistead and Clark (1990) investigate the after sales support strategy relation with customer satisfaction, by offering different after-sales services during the various stages of the primary product lifecycle, the provider can ensure product functionality and thereby customer satisfaction. This may lead to a fruitful relationship between the provider and the customer over time, allowing for more transactions Ahn & Sohn (2009). Therefore, after-sales services have acquired a critical role as a means to satisfy and retain customers.

According to Literature review, even though various studies have been carried out on the area of after sales service and its effect on customer satisfaction, there are only a limited number of research findings on the effects of after sales service on customer satisfaction in the context of business customer satisfaction. As to the knowledge of the researcher it is hard to find researches which were undertaken pertaining to the After Sales services and customer satisfaction in the case of ATM Vendors in Ethiopia. As per the discussion made with Moti engineering management staffs, the after sales service supported by Moti engineering are Maintenance service and spare parts supply, Customer Care, product delivery (ATM), Installation and Warranty.

Having in mind the above mentioned After sales service dimensions and considering the unavailability of adequate research works in the studied area, this study was designed in such a way that focuses on the areas not addressed by the previous studies. Before deep down to the study, the researcher has conducted a preliminary discussion After sales service users of Moti Engineering, selected commercial Banks and from the discussion it was identified that there have been some complains heard from the clients of the company such as lack of support and customer care, the maintenance service takes several days to repair, spare parts are not available at a time of need, and etc.

Thus, this study focuses on theoretical, empirical and actual gaps in the application of After Sales services andwas conducted to examine the effect of After sales service dimensions includingDelivery quality, installation quality, customer care, Maintenance support and availability of spare parts andWarranty, on customer satisfaction customer satisfaction in the case of ATM vendors by Taking Moti engineering P.L.C as case study.

1.3 Research questions

1.3.1 General Research question of the study

This particular study takes into consideration the below main research question

- What are the influences of after sales service on customer satisfaction in business to business (B2B) context in Moti engineering (ME)?

1.3.2 Specific Research question of the study

Whereas the specific research questions of this study are described as follows:

- To what extent delivery quality influence customer satisfaction in ME?
- How installation quality does influences customer satisfaction in ME?
- How warranty quality does affect customer satisfaction in ME?
- To what extent customer care influences customer satisfaction in ME?
- To what extent maintenance support and availability of spare parts influences customer satisfaction in ME?
- Of after sales service dimensions which factors have a higher influence on customer satisfaction in ME?

1.4 Objectives of the Study

1.4.1 General Objectives of the Study

The aim of this study was to investigate the effects of after sales service dimensions on customer satisfaction in ME.

1.4.2 Specific Objectives of the Study

In specific terms, the objectives of this study are to:

1. Determine the effect of delivery quality on customer satisfaction in ME.
2. Know the influence of installation quality on customer satisfaction in ME.
3. Examine the influence of warranty quality on customer satisfaction in ME.
4. Ascertain the influence of customer care on customer satisfaction in ME.
5. Establish the influence of maintenance support and availability of spare parts on customer satisfaction in ME.
6. To know which factors, have a more influence on customer satisfaction in ME.

1.5 Significance of the study

The most important significance of this study was to identify after sales service dimension that possibly affects the business customer satisfaction in Ethiopian ATM vendors. All the way through developing appropriate research hypothesis and framework, this study will be able to provide a more detailed picture than before of how various dimensions of after sales service affects the business customer satisfaction in Ethiopian ATM Vendors.

This paper also fills an important gap in the literature by specifically addressing the ATM vendors in Ethiopia. This study will help managers and professional workers in the service industry to understand how after sales service may promote their business customer satisfaction.

Further, the finding of this research is supposed to add knowledge to the existing literature and will be served as reference for future researchers who have an interest to undertake research on the area of After Sales Service.

1.6. The scope of the study

Theoretically, this research was restricted to ascertain the effects of After Sales Service on customer satisfaction in B2B context in Moti Engineering.

With regards to Geographical coverage, the study is delimited within the geographic territory of Addis Ababa.

Methodologically, a more representative sample size has been determined and the influence of after sales service on customer satisfaction was analyzed using correlation and regression analysis.

1.7 Organization of the study

The other major parts of this study are structured under four sections.

Chapter two deals with literature review. In this section of the study key related literatures such as articles, journal, prior research findings and books have been thoroughly reviewed, and accordingly the research framework has been developed. Chapter three clearly presents and provides adequate justification for the selected research design, research approach, sampling technique and method of data analysis and the like. Chapter four evidently discuss about data presentation, analysis, interpretation, major findings and discussions. Reliability test, normality tests, regression assumption tests, Correlation analysis, regression analysis were carried out and the results of the research findings are interpreted and discussed in this chapter. In the last section of the study, chapter five, research findings; conclusions, recommendations and future research recommendations are discussed one after the other.

1.8. Operational Definition of Terms

After Sales Service: is all the service offered by Moti engineering PLC after the customer had agreed or signed sales agreement to buy the ATMs.

Customer Satisfaction: is the psychological feeling of after sale service customers from their experience on the after-sale service offered by Moti engineering P.L.C, which is the difference between the actual performance of the after sale service and the desire and expectation of customers on the after sale service.

Chapter 2

Review of Related Literature

Introduction

In this section of the study key related literatures such as articles, journal, prior research findings and books have been thoroughly reviewed, and accordingly the research framework has been developed.

2.1 Theoretical Literature Review

This part discusses the relevant theories which are reviewed that would be useful in supporting the researcher to carry out the research project. This study was based on the below theories which the researcher believes necessary in relation to the topic.

2.1.1after sales service

After sale service are acknowledged by many difference names. Some termed after service as "product support activities", "product support services" (Shaharudin et.al, 2011), "field services, "aftersales support, "technical support, or event "services". All these terminologies are can be found in articles and journal which referring to the after sales service. After sale service has appeared since 19th century. According to Muhammed et al (2011) explanation many studies were been conducted to understand the after salesservice. All this research and other factors such as change in business environment and technologies has change people view on after sale service (Muhammad et al, 2011).

Whereas according to Rigopoulou et al. (2008)After-sales service is service that is provided to the customer after the product has been delivered This service is intended to support customers in the use and disposal of the product (Fazlzadeh et al. 2011). After-sales service is a means to provide benefits to customers and create a business opportunity for the company (Saccani et al., 2007). After-sales service is generally applied in a manufacturing industry as manufacturing firms struggle to meet customer needs with product design, comprehensive product offerings, consumer support, and after-sales service (Lele 1997).

2.1.2After sales service Dimensions

1. Delivery quality

The availability of Delivery system benefits customers to transport brought product easier. Rigopoulou et.al, (2008) state that delivery holds the key to the after sale service in persuading the customers to understand how the organization is importantto them. The delivery quality seems like very simple, but its importance in influencing customers buying decision and satisfaction is to great extent. As per Choudhary et.al, (2011) explanation, speed and reliability are the two main points in delivery service. Delivery speed refers the ability to deliver the goods as quick as possible or on time as per the promised time. While reliability stands for the 3Rs: ability to send the purchased goods at right quantity, at right place and to the right customer. Therefore, Deliveryquality and customer satisfaction is believed to have relation. According to Shaharudin et.al, (2009) and Choudhary et.al, (2011) deliver service well-connected and enhanced customer satisfaction.

Some organization doesn't have own transportation use in delivery service. Instead, they use others third party organization to perform the delivery service to customers. It requires high mutual trust because it involves the company name. Choosing the best third parties is important because they will act as the company representative for the seller company. The representative must be able to perform as the seller organization standard.

2. Installation quality

Installation service is one of the after sale servicedimension offered by an organization to their customers. It becomes one of the important keys in influencing the customers' satisfaction (Rigopoulou et.al, 2008). Moreover, Shaharudin (2009) mentioned that installation is one of seven elements of customer support. It requires installer to deploythe purchaseditem at customer doorstep. Hence, installation quality dimension enhances the satisfaction level of customers (Shaharudin et. al., 2009). Irini R. (2008) further strongly agreed that installation and deliver are significantfactors to enhance the level of customer satisfaction.

Also, Kumar Mishram (2014) mentioned that aftersales service is significantelement because it is a means to ensure that whether customers are satisfied with their purchases and in case of any difficulty installing or setting up equipment, they can receive support. According to Rigopoulou

et.al, (2008) explanation installation quality brings up the good image and friendlinessand can be measured through:

- Accuracy in time of installation,
- proper information,
- flexibility of meeting date and time as well installer kindness,
- friendliness and politeness.

Whereas the fruits of good installation service are: high sales turn over, strong association with the customers, customersatisfaction, it helps to build good image to the organization, reduced chance of damage and error, brings reliability and value to the provider.

As Irini R., (2008) argued, in Sales Services, After Sale Delivery and Installation is vital for bringing customer satisfaction.It is obvious that different customers have different needs: some are interested the product to be delivered to their convenient locationwithin the agreed time and at the right price, others give priority to their needs and wants. on the other hand, poor installation results inadverse impression and this in turn leads to poor seller relationship with the consumer (Kotler and Armstrong, 2010). Hence, Organizations are expected tohighly work on relations with customers for effectiveness and to advance their sales turnover. This is to mean that Installation of a product without any error, results in enhanced customer satisfaction, this can reduce the chance of damage, error and assures the customer that the product is valuable, errorless and reliable.

Thus, Installation process must be handled by knowledgeable professionals; it should also provide a pleasant post sale service to the customer from the organization. Appropriately managed feedback is vital for organization as they would then come to understand what the customer desires from the organization, for example the types of changes the organization should be into the product or service line, so that they give more value to the customers. Therefore, services given to consumer After Sales are more valuable to satisfy customer needs and it is very significant for organizations to retain customers for a long time and it will generate high profitable relationship with organizations.

3. *Warranty quality*

The other dimension of aftersales service used in this particular study is Warranty quality. Warrantypermits continuous relationship between seller and buyer within the warranty period. According to Shaharudin et. al, (2009), warranty is the contractual agreements between the seller and the buyer that enables the buyer to claim remedy failure of item within the warranty period. The warranty claim comprises the seller or manufacture to repair or replace failed item in the event the product futile to meet it purpose (Shaharudin et. al, 2011). According to Shaharudin et. al, (2009) stated that warranty is an insurance policy and repair contractual agreement where the supplierrequired to bear the cost of repair and replace. With the intention to protect the seller from negligent customer, any warranty claim must be supported with terms and conditions of the agreement.

Most of the time it is perceived by customers that the longer the warranty coverage, the more quality the product is (Oumlil, 2008). This was furtherprovedby the study of Shaharudin et.al (2011) that customers more satisfy when their risk of failure item is guaranteed by warranty. The longer the warranty period, the more customer satisfactionwill be (Shaharudin et. al., 2009). The reason why many organizationsoffer warranty coverage to customersis to gain competitive advantage and increase customer satisfaction, (Shaharudin et. al, 2009).

4. *Customer Care*

Customer care is the key element in bringing customer satisfaction and can be defined as an activity which provides technical and productsupport such as warranty extension and dispute management to customers (Saccani et al., 2007). Customer care can be delivered to customers in different means:it can be provided through organized call center,through the producer'sPortal and through the local repair centers that provide technical support to customers. The customer care activity has shifted from being principally providing simple activities, such as providing information and handling orders, to beingmore complex and handling tasks, such as providing advice in financial affairs or strengthening and managing the relationship with key accounts (Kantsperger & Kunz, 2005). This has led to understanding the benefits in customer care as an effective tool towards a strategic role in terms of customer relationship.

According to Kahn, (1995), Most of the organizations are informed that it is the customers' judgement that matters and that the stiff competition among organizations have improved not

only the focus on customer Products but also to shorten the product life cycle. This has in turn pushcompanies to improve themselves through continuous improvement tostay competitive in the highly competitive environment.Especially, automotive and kitchen appliances manufacturers are famous for their high technical quality. These companies cannotstrive with their technical quality only since all products in those industries are relatively correspondingly advanced and technological. Instead, the companies have to compete with their functional service quality, which includes their service provision characteristics such as friendliness, availability and trustworthiness.

5. SPARE PARTS AVAILABILITY

Spare parts distribution is accountable fordelivery of spare parts,customer order management andinventory management, (Saccani et al., 2007). The basics point here to know is that spare parts are not final products to be sold to a customer at time of purchase of the main item (Kennedy et al., 2002). Spare parts distribution provides critical functions for the customers throughout the use of the product (Gopalakrishnan & Banerji, 2004). The manufacturer usually aims to reach a particular turnover ratio and at the same time addresses the expectations of many customers with dissimilar and relatively large value of spare parts. The provider has to choose on the level and type of spare parts they want to distribute,the level of spare parts they want to put in the warehouse both central and reginal if any, retail outlets and dealers etc. It was argued that pricing spare parts is one of the most challenging task when it comes to industrial goods. The core intention with spare parts distribution is to safeguard the right availability of spare parts at the right time for the buyer's needs and expectations given that it requires lowest possible investments from the suppliers' side. The objective is also boost customer satisfaction; this could be achieved through stable and steady spare parts availability and distribution.

The other importance for holding spare parts inventory is to provide timely repairs to customers' equipment (Hopp et al., 1999). Furthermore, spare parts inventory is held as protection against extended equipment down-time and service interruption (Kennedy et al., 2002). Obsolescence can be one of the challenges as the machines for which the spare parts were designed might become obsolete or replaced. It is difficult to determine how many units of a spare part for an obsolescent machine to stock, and it may be very challenging to replace a part that is not in stock

any longer. There are also negative implications of unplanned repairs, these consequences are production loss with significant costs, it is suggested that a kind of safety stock policy is crucial.

2.1.3. Customer Satisfaction

Customer satisfaction is perceived very important in today's stiff competition, it demonstrates how firms are devoted to provide quality product or services to their customers that ultimatelyenhance customer loyalty. Satisfying the customer is the key focus of the organization, as it is often said that customer is king, and king is always right, this implies that customers are always right when they demand for after sale services.

Customers' satisfaction is one of the vital issues in modern business and it affects many results including sales performance, company image and profitability (Anselmsson, 2006; Martenson 2007). In addition, other scholars describe customers' satisfaction as the choices that are made by the judgment andaffected by certain buying decisions (Kitapci, Dortyol, Yaman & Gulmez, 2013). More importantly, customers' satisfaction can also be explained as the level of overall pleasure perceived by the customer, and the influences of the service to meet customers' expectations(Kitapci et al., 2013).Goncalves & Sampaio, (2012) described customers' satisfaction as customer' fulfillment response.

Different customers have different needs some want that the product to be delivered to their destination at right time and right price, others give value to customers' needs and wants, on the other hand poor distribution results negative impression (Kotler & Armstrong 2010). Such negative impression results in poor seller relationship with consumer. Organizations need to improve relations with customers for effectiveness and to improve their sales turnover, installation of a product withoutany error results in improved satisfaction of customer this can reduce the chance of damage, error and assures to customer that the product is valuable, errorless and reliable.

Customer satisfaction measurement involves the collection of data that provides information about how satisfied or dissatisfied customers are with a service. This information can be collected and analyzed in many ways. Many organizations regularly check the levels of customer satisfaction to monitor performance over time and measure the impact of service improvement.

Henley center headlight vision (Anon 2007) states the research carried out in the UK with public sector organizations suggests that there are five themes that are likely to be relevant to all organizations in measuring customer satisfaction.

- Service delivery (how problems were addressed, reliability, outcome etc.…)
- Timeliness (waiting times, number of times contacted)
- Information (accuracy, enough information, kept informed)
- Professionalism (competent staff, fair treatment)
- Staff attitude (friendly, polite, sympathetic)

Hence, services given to consumer after sale are more valuable to satisfy customer needs, after sale service is very crucial for organization to retain customers for lifetime and generate strong relationship with organization. Many authors established that organization can achieve more than their turnover due to after sale service that they provide to customer during a life cycle of a product. Hence, productivity and sales turnover increase and profit generation may be more than product sale (Alexander 2002).

2.1.4. After-sales service and customer satisfaction

Aftersales service can be viewedas the customers' benefits after a sale of the item. It gives an opportunity for customers to justify the value of purchase with the aftersales services, which directly influencescustomer satisfaction and indirectly influences customer loyalty(Hussein & Hartelina, 2021; Sugianto & Sitio, 2020; Wahjudi et al., 2018). For many products, customer satisfaction greatly depends on the aftersales services (Knapp, 2021). Thus, after-sales services become a pivot point in customer relationship management (Rizaimy Shaharudin et al., 2009).

As a part of CRM, aftersales services are used as a nonprice competition tool to gain competitiveadvantage, generating additional revenue and ultimately generating customer value (Gaiardelli et al., 2007; Majava & Isoherranen,2019; Morschett et al., 2008; Sheth et al., 2020;Verstrepen et al., 1999).

It is very clear that Good after-sale service results in customer satisfaction and loyalty, resulting in customers' publicity (Verstrepen et al., 1999) through word of mouth(Fazlzadeh et al., 2011; Nasir et al., 2021).

Moreover, aftersales service can also differentiate brands (Habib & Sarwar, 2021). It creates and enhances brand equity (Ahmad & Butt, 2012). The customer tends to value brands that provide quality after-sales services tend to make more loyal customers. These loyal customers value their brands more than other brands. For example, Toyota differentiated its brand by superior after-sales services in the Philippines market (Balinado et al., 2021). Surprisingly, only two studies on Samsung and iPhone customers have been found to assess the effect of after-sales services on loyalty.

Bayu et al. (2019) studied the effect of after-sales service, brand image, and product quality on Samsung Smartphone repurchases decisions in the Indonesian market. Despite Samsung being a solid brand, customers repurchase decision has clung to product quality and after-sales services such as warranty, applicationassistance, and customer service. In another study, Hussein & Hartelina (2021) tried to find the relationship between after-sales service and customer loyalty through value co-creation for iPhone in Indonesia. After-sales service was found to have both direct and indirect influence through value co-creation on customer loyalty.

2.2. Review of Empirical Studies

Scarce empirical investigation was found within the area of after sales service on customer satisfaction in business-to-business perspective especially in ATM vendors when conducting this literature review, although the ATM service is a significant payment channel contributing to the overall economy in creating cashless society in Ethiopia. Seemingly, no adequate research findingshave been performed within this area with regards to after-sales service influence on customer satisfaction yet. Therefore, it indicates the need to investigate this sector.

Throughout this literature review chapter, a deeper and more extensive understanding about after-sales service and its effect on customer satisfaction in B2B perspective is presented thoroughly. From the empirical literature review, it is imperative to conclude that there is a research gap prevailed in the area of after-sales service dimensions and further on its influence on customer satisfaction.

Many researchers have agreed that the after sales service plays a foremost role in satisfying customers as well as increasing number of firms across industries. Among others this particular

study has reviewed in detail the underneath empirical findings which has been conducted in the area of after sales service and its influence on customer satisfaction.

Through their study of an empirical analysis of after sales service and customer satisfaction Hussain, Bhatti & Jilani (2011) proved that customer satisfaction increases with better service delivery.

Rigopoulou et al, (2008) examined the influencesof After Sales services on customer satisfaction in Greece and came up with a conclusion that After Sales service has significant and positive impact on customer satisfaction. Furter, they suggest that service marketing managers should understand the significanceinfluence of After Sales service on customer satisfaction.

Also, Goffin and New, (2001) examined and explored that after-sales services helps to maximize the value extracted by customers over the entire product life cycle.

On the other hand, Potluri and Hawariat (2010) conducted a study on assessment of after-sales service behaviors of Ethiopia Telecom customers to assess and review fixed-line telecom customers‟ perception of the quality of after-sales services provided by Ethiopian Telecom.

Likewise,Raddats, (2011) is of opinion that customers are no longer demand not only for a product but also a comprehensive solution for their problem after purchase;The study indicated that customers are progressively moving away from requesting for a specific product to requesting for a certain service package which includes the original purchase and all after sales supports or services instead.

Chien, (2005) also agreed that free basic after-salesservice plays a vital role in attracting morecustomer attention in a market with stiff brandcompetition. Offering adequate after-salesservice helps to get an advantage over competitors and has become a major source ofrevenue, profit, and competency in modern way of running business(Cohen et al., 2006; Cohen and Kunreuther, 2007) as cited in Alirezaet al, (2011).

Most importantly, Shaharudinet al (2009) explored the influences of after sales service on customer satisfaction in the electronic market of Malaysia. After sales service was determined through delivery, installation and warranty. 100 respondents were sampled through closed ended

questionnaire. The results of this particular study revealed that delivery, installation and warranty have significant and positive impact on the customer satisfaction.

Similarly, Ruben, (2012) also agreed that after sales service significantly enhance the value of the product to its users. He stressed that customers may decide to purchase a product based upon service and taking into account the after sales service.

Similarly, Kurata and Nam, 2010; and Ahn and Sohn, (2009) agreed that after-sales services helps to createlong term relationships with customers and contribute significantly to customer satisfaction by offering different after-sales services during the various stages of the primary product lifecycle, it is a means to ensure product functionality and thereby customer satisfaction. This potentially leads to a fruitful relationship between the provider and the customer over time, allowing for more transactions.

Further, Gupta and Lehmann, (2007 studied the impact of After Sales service on customer satisfaction and they explored that after-sales service is viewed as an important factor that has an influence on establishing favorable relationships with customers.

Then Alexander et al., (2002) also accepted the claim that retaining customers are the most profitable ones and requires the cheapest investment than recruiting new customers, as they require less marketing effort and relationship building. Further, they agreed that after-sales service contributes a critical role as a means to achieve customer satisfaction.

In the same way, Rosen and Surprenant (1998) studied whether After Sales service is adequate enough for the creation of long relationship with customers. Their findings proved that After Sales service is a marketing strategy that helps to create and establish a long-term relationship with customers through good communication and flexibility. In long term, it leads to customer satisfaction.

Cohen et al., (2006) and Cohen and Whang, (1997) believed that large number of extra aftersales service plans to consumers will lead to customer satisfaction and retention as well as higher profitability. This implies that excellent service may enhance the success rate of new products.

Also,Ladokun Isaac (2013) studied the impact of after sales service on customer satisfaction and retention with special reference to LG Electronics in Nigeria. The study found that customer satisfaction and retention were significantly explained by after sales service dimensions such as warranty quality, product delivery quality and installation quality.The study found that warranty quality was the highest determinant variable among after sales service dimensions followed by delivery and installationquality respectively.

Most recently, Muhammadet al., (2018) evaluated the influences of after sales service and found that there was significant relationship between installation and warranty and the customer satisfaction. It was proved that installation and warranty service play important role customer satisfaction toward the after sales service.

Finally, Rahel Tenkir (2018) examined the effect of after-sales service on customer satisfaction in the case study of lifan motors in Ethiopia and found that the after-sales service plays a major role in satisfying customer and have significant effect on customer satisfaction. Further the study found that after sales service dimensions such as maintenance service, spare part supply, installation and warrantywere significantly independent and joint predictors of customer satisfaction.

2.3.Research framework

This particular study primarily targetedonthe effects of after sales service on customer satisfaction and it has gone through research framework after making in depth literature review. In doing so after sales service dimensions have been identified from the literature but only those that are considered relevant forthe concept under the study areencompassed in theresearch framework.

The underneath research framework shows the association betweenafter sales service dimensions and customer satisfaction.

Dimensions of after sales service or factors affecting customer satisfaction

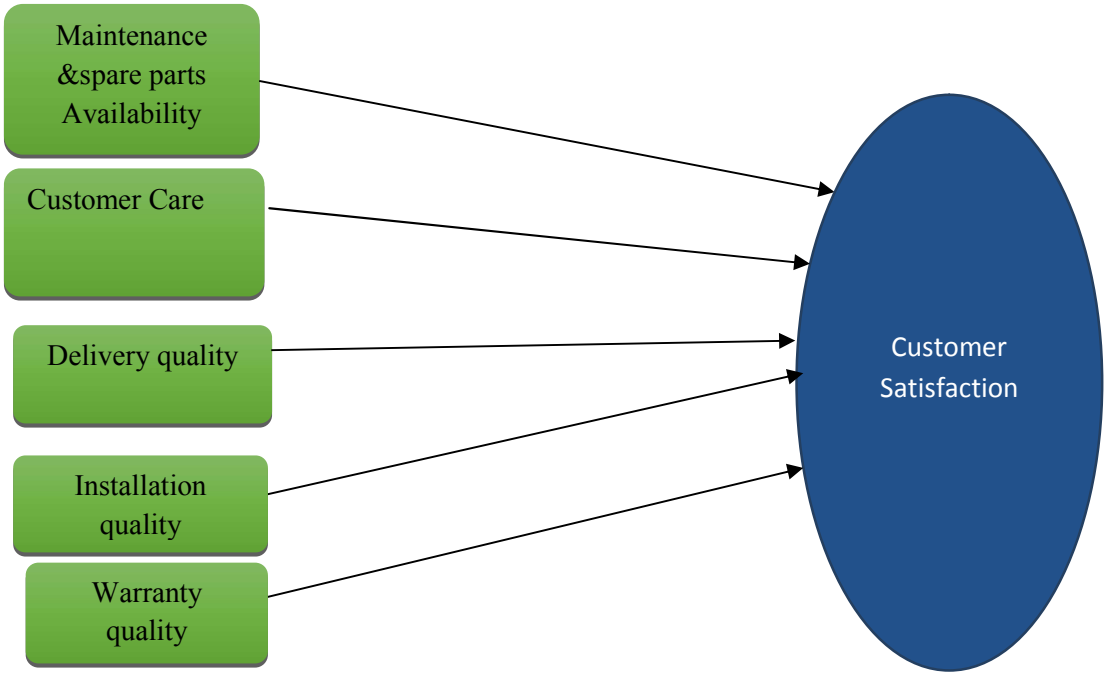


Figure 2.1:A modified researchframe work

Source: Attafar, 2011

2.4 Hypothesis Development

Taking in mind the above research framework which showed relationship between after sales service andcustomer satisfaction, the study has establishedthe following five research hypotheses.

The availability of Delivery system benefits customers to transport brought product easier. Rigopoulou et.al, (2008) state that delivery holds the key to the after sale service in persuading the customers to understand how the organization is important to them. The delivery quality seems like very simple, but its importance in influencing customers buying decision and

satisfaction is to great extent. As per Choudhary et.al, (2011) explanation, speed and reliability are the two main points in delivery service. Delivery speed refers the ability to deliver the goods as quick as possible or on time as per the promised time. While reliability stands for the 3Rs: ability to send the purchased goods at right quantity, at right place and to the right customer. Therefore, Delivery quality and customer satisfaction is believed to have relation. According to Shaharudin et.al, (2009) and Choudhary et.al, (2011) deliver service well-connected and enhanced customer satisfaction.

Therefore, H1: Deliveryquality positively and significantly affectscustomer satisfaction in Moti engineering P.L.C (ME).

Shaharudin (2009) mentioned that installation is one of seven elements of customer support. It requires installer to deploy the purchased item at customer doorstep. Hence, installation quality dimension enhances the satisfaction level of customers (Shaharudin et. al., 2009). Irini R. (2008) further strongly agreed that installation and deliver are significant factors to enhance the level of customer satisfaction. Therefore,

H2: Installation quality positively and significantlyinfluencescustomer satisfaction in ME.

The other dimension of after sales service used in this particular study is Warranty quality. Warranty permits continuous relationship between seller and buyer within the warranty period. According to Shaharudin et. al, (2009), warranty is the contractual agreements between the seller and the buyer that enables the buyer to claim remedy failure of item within the warranty period. The warranty claim comprises the seller or manufacture to repair or replace failed item in the event the product futile to meet it purpose (Shaharudin et. al, 2011). According to Shaharudin et. al, (2009) stated that warranty is an insurance policy and repair contractual agreement where the supplier required to bear the cost of repair and replace. With the intention to protect the seller from negligent customer, any warranty claim must be supported with terms and conditions of the agreement.

H3: Warranty quality has a positive and significant effect on customer satisfaction ME.

Customer care is the key element in bringing customer satisfaction and can be defined as an activity which provides technical and product support such as warranty extension and dispute

management to customers (Saccani et al., 2007). Customer care can be delivered to customers in different means: it can be provided through organized call center, through the producer's Portal and through the local repair centers that provide technical support to customers. The customer care activity has shifted from being principally providing simple activities, such as providing information and handling orders, to being more complex and handling tasks, such as providing advice in financial affairs or strengthening and managing the relationship with key accounts (Kantsperger & Kunz, 2005). This has led to understanding the benefits in customer care as an effective tool towards a strategic role in terms of customer relationship. Therefore,

H4: There is a positive and significant relationship between Customer Care and customer satisfaction in ME.

Spare parts distribution is accountable for delivery of spare parts, customer order management and inventory management, (Saccani et al., 2007). The basics point here to know is that spare parts are not final products to be sold to a customer at time of purchase of the main item (Kennedy et al., 2002). Spare parts distribution provides critical functions for the customers throughout the use of the product (Gopalakrishnan & Banerji, 2004). Hence,

H5: There is a positive and significant relationship between maintenance support and availability of spare parts and customer satisfaction in ME.

Chapter Three

Research Design and Methodology

Introduction

This subsection of the study discussesabout research design and methodology of the study. It comprises the research approach and design, target population, sample size and sampling techniques, data collection instruments, methods of data analysis, model specifications, reliability and validity checking strategies.

3.1. Research approach and Design

3.1.1 Research Design

According to Kothari, (2004) research designcan be termed as the theoreticalarrangementfor which the particular research is undertaken.Thus, this study used explanatory and descriptive research design. As explored by various authors,for the intention of examining the degree of association or relationship between dependent and explaining variables and check the hypothesis developed, explanatory research design is the best fit design for this research.In addition to, explanatory research design,thisstudyemployed a descriptive research design because it aims to extract information that describes existing phenomena by asking respondents about their perceptions,

3.1.2. Research Approach

As far as research approach is concerned, this study used quantitative approach because the first-hand data that has been gathered through questionnaire was quantitative in nature and was analyzed using Correlation and regression statistical analysis. According to Sugiyono, (2008) quantitative approach is a method by which related theories or concepts are tested through quantitative measurements where data analysis is performed with the help of statistical tools and the developed hypothesis are tested.

3.2 Population and sample of the Study

The target population of this study comprises of top 7 ATM service providing Ethiopianbanks; Namely; Commercial bank of Ethiopia, Dashen Bank, Awash Bank, bank of Abyssinia, United,

Zemen bank and Birhan Bank. These banks are selected because they have better experience in providing ATM banking services and have relatively large number of ATMs. All staffs of each selected bank who are working at headquarter within digital banking, IT infrastructure and supply chain departments were a population of this study and accordingly the number of these staffs considered in this research was 290.This total population of 290 staffs were considered appropriate because they are the ones in ATM procurement, contract management and Monitoring services. The below shows number respondents taken from each Bank.

S.N	Bank Name	Number of Participants
1	Commercial Bank of Ethiopia	75
2	Dashen Bank	52
3	Awash Bank	45
4	Abyssinia Bank	37
5	United Bank	25
6	Zemen Bank	30
7	Birhan Bank	26
	Total Target Population	**290**

3.3 Sampling techniques and sample size

3.3.1 Sampling Technique

Purposive sampling technique was employed to select the top 7 ATM service providing Ethiopian banks; Namely; Commercial bank of Ethiopia, Dashen Bank, Awash Bank, bank of Abyssinia, United, Zemen bank and Birhan Bank. These banks are selected because they have better experience in providing ATM banking services and have relatively large number of ATMs. As far as respondents of this study is concerned, the researcher selected Head office staffs from the selected banks purposely because these staffs have sufficient knowledge of the issues related to services offered by the ATM Vender within the scope of after sales service. Because the population of the study was small, it has used census method where the whole population considered as a sample.

3. 3.2 Sampling Size

Kothari, (2004) discussed a sample size as representative to be surveyed from the population and he argued that large sample size produces more reliable results than small samples because of its high representation. As discussed above, this study took the whole population as a sample.

Thus, the sample size of this particular study is 290 employees of selected Banks who are working at head quarter under different departments (Digital banking, IT infrastructure and supply chain departments).

3.4 Types and sources of data

In this particular research, the data was rooted from both primary and secondary data sources.

Primary data and their sources: The sources of the first-hand data for were different bank staffs who are working at in different Departments at Head office level.

Secondary data and their sources: whereas the secondary data that were used for supporting this study were different secondary sources such as related research findings, articles, internet sources, journals and written documents.

3.5 Data collection tools

The research instruments for this study are close ended questionnaires which are adopted from previous studies with some modifications. The questionnaires have been adapted from previous research work, Fazlzadeh et al (2011)and some questionnaires are added from comprehensive literature review related to the effect of after sale service on customer satisfaction using Likert scale rated from 1 to 5 (strongly disagree to strongly agree).

The questionnaire has two parts, part one was dealt with background information and part two was about the effects of after sales service on customer satisfaction. In order to examine the impact of installation, delivery, warranty, customer care, maintenance and availability of spare parts on customer satisfaction, respective respondents were made aware of the objectives of the research and their confidentiality was ensured.

3.6 Methods of data analysis

The very important procedure that is required to be done once the required data collection procedure is finalized is the process in which the data is analyzed. The first step in the journey of data analysis was systematically arranging the collected data in a manner that it is easy for data input. And then the gathered primary data which was collected from respondents through close ended questionnaire was analyzed and interpreted using descriptive, correlation and regression statistics with the deployment of SPSS.

Correlation analysis was employed to examine the strength of the association between after sales service dimensions and customer satisfaction. Multiple regression statistics was also applied to know the degree of explanation of after sales service dimensions on customer satisfaction in the case of Moti engineering, the top ATM vendor in Ethiopia. Moreover, tables, graphs and charts were used as a means of data presentation and analysis.

3.7 Model Specification/Assumptions

With the intention to establish the causal relationship between the dependent variable which is customer satisfaction and the explaining variables, which are after sales service dimensions, the study used multiple linear regression models as illustrated below.

$Y = a + b1x1 + b2x2 + ... b5x5$

Where, Y = Customer satisfaction

a = y intercept

b1 = the regression coefficient of Maintenance and spare parts availability

X1= Maintenance and spare parts availability

b2 = the regression coefficient of customer care

X2= Customer Care

b3 = the regression coefficient of Delivery quality

X3= Delivery quality

b4 = the regression coefficient of installation quality

X4= Installation quality

b5 = the regression coefficient of warranty quality

X5=Warranty quality

ε = error term

3.8 Validity and Reliability

3.8.1 Validity

Validity is to mean the exactness of an assessment, the ability of a scale or measuring instrument to measure what it is planned to measure.

To confirm the validity of research instrument and to know if the items used in the research target their goal or not, the researcher has gone through the underneath steps:

1. After preliminary designing of the questionnaire, questionnaires were studied carefully in a great extent,
2. Questionnaires were examined from the point of being understandable, relevant to the stetted objective.
3. Omission of the irrelevant questions through consulting individuals who has prior research expertise and more importantly taking comments from my advisor. In this regard 29 questionnaires which is 10% of the required respondents were distributed to pilot respondents.
4. Finally, the questionnaires were valid enough as for the contents after effecting the required modifications.

3.8.2 Reliability

According to Burn and Bush (2014) reliability used to know the degree to which a respective respondent is reliable in his or her answers in connection with filling questionnaires. Therefore, it is imperative to conclude that reliability is the extent that indicates if the research instrument is free from errors and offers constant data, yielding consistent results.

For this study, the internal consistencies of data were evaluated by using cronbach alpha that helps to determine the inter correlations between items that be used in the study (Sekaran, 2013).According to the author, the closer cronbach alpha value is to 1, the higher the internal consistency, and the research tool constructs are reliable. Accordingly, the results of reliability tests of this study are clearly presented and discussed in chapter four.

3.9 Research Ethics

Throughout the study all code of conducts of research are appropriately confirmed. Any relevant concept in this research has been properly quoted. Research respondents are protected; their information which was gathered via questionnaires, are kept confidential and has been only used for the envisioned purpose of this study.

CHAPTER FOUR

Data Presentation, Analysis and Interpretation

Introduction

This chapter deals with data analysis and results of the research findings. After the primary data is gathered from respondents, the next step what the researcher did was encoding and analyzing the data through the help of SPPS data analysis tool, followed by interpretation, presentation and discussions of findings.

The chapter starts with checking the reliability test results of variablesgo with descriptive statistics, correlation analysis, multiple linear regression analysis, hypotheses testing and ends with discussion of findings.

4.1 Reliability Test:

The questionnaire survey took for about ten days to get finalized. Maximum effort was exerted with the intention of achieving high response rate. As a result, from the total of 290 questionnaires distributed 268 were successfully collected and used as a basis of analysis and the remaining 22 of them were not returned. As far as response rate is concerned, this study has achieved 92.4% response rate which is good enough to carry out a study.

As it has been indicated in the preceding chapter, in this study Cronbanch's Alpha is used to check the reliability of research instruments. According to Jasra et al., (2011), the Cronbach's Alpha result must be greater than 0.60 to be considered reliable and to proceed to the next part.

As per Hair et al. (2006) explanation, Cornbach's Alpha reliability test helps to check the internal consistency of items used and allows researcher to reach with dependable results. Usually, the measurement of Cronbach's Alpha falls under a range between 0 and 1 where the variables will have a better consistency when their Cronbach's coefficient is approach to 1 and the reverse is true when the value is closer to 0.

According to George and Mallery (2003) suggestion, the internal consistency of data is found Excellent, Good, acceptable, questionable, poor and unacceptable when the Cronbach's coefficient is greater than 0.9, 0.8-Good, 0.7, 0.6, 0.5, and less than 0.5respectively.

The internal consistency of items used in this study in accordance to Cronbach's coefficient are shown in the below Table (4.1).

Table 4.1 Cronbach's Alpha Reliability test

Variable	Cronbach's Alpha	N of Items	Remark: Based on Cronbach's Alpha Value
Maintenance and Spare parts Availability	.801	8	Good
Customer Care	.767	6	Acceptable
Delivery quality	.869	5	Good
Installation quality	.869	4	Good
Warranty quality	.888	4	Good
Customer satisfaction	.962	5	Excellent

Source: Questionnaire survey, (2022)

Table 4.1 above illustrates the internal consistency of questions under each variable used in this particular research. The above table demonstrated that there is comparatively good internal consistency of data which ranges from acceptable to excellent (0.767 to 0.962).

As proved from the above table, the developed instrument is considered as reliable as Cronbach's alpha values are far greater than 0.70. Further the above table showed that, Warranty quality has the peak alpha value of 0.888 with 4 items so this means that warranty is the most consistent variable. Delivery quality and installation quality achieved the next highest alpha value of 0.869 with 5 and 4 items each, Followed by maintenance and availability of spare parts and customer care, with the alpha value of 0.801 with a total of 8 items and alpha value of 0.767 with 6 items respectively. More to the point, the variable with 4 items is customer satisfaction with alpha value of 0.962

To end up the above discussion, the internal consistency test of variables employed in this study has achieved and fulfilled the level of reliability based Cronbach's Alpha value.

4.2 Validity

To guarantee the validity of instruments, the researcher adopted instruments that their validity was checked by the previous research works. The validity of those instruments was also checked in consultation with the research advisor and different individuals who have good expertise and experience in doing research. Furthermore, with the intention to keep away from ambiguity and unclear statements, the questionnaires were checked through pilot test. The pilot questionnaires were tested using Dashen Bank selected employees. Based on respondents constructive and valid comments some amendments such as exclusion of redundancy, addressing of spelling errors, removal of some questions and addition of some questions.

4.3 Correlation Analysis

The subsequent procedure once the goodness of data is checked and the validity of instruments is ensured is conducting correlation analysis. A correlation analysis helps to show the direction and degree of the relationship between two variables, mostly the independent and the dependent.

According to Hair (2003), the correlation or the degree of linear association between two variables lies between two critical points –1.00 and +1.00, where 0 represents the existence of no relationship between two variables. Whereas coefficient of plus or minus one refers the existence of perfect relationship between two variables. From this one can understand that the greater the correlation coefficient, the stronger the level of association between two variables.

Pearson Correlation Coefficient

Sekaaran (2003) suggested that the Pearson correlation coefficient is appropriate for interval- and ratio-scaled variables, and any bivariate correlation can be obtained.

To properly evaluate the outcome of Pearson correlation coefficients of each constructs the rules of thumb as shown below are referred in this research.

Table 4.2. Rules of Thumb about the Strength of Correlation Coefficients

Range of Coefficient	Description of Strength
±.81 to ±1.00	Very strong
±.61 to ±.80	Strong
±.41 to ±.60	Moderate
±.21 to ±.40	Weak
±.00 to ±.20	None

Source: Hair (2003)

Table 4.3. Pearson Correlation coefficient for after sales service dimensions and customer satisfaction

Correlations[b]

		Maintenance and Spare parts avail.	Customer care	Delivery quality	Installation quality	Warranty quality	Customer Satisfaction
Maintenance and Spare Parts Avail.	Pearson Correlation	1	.509**	.368**	.468**	.320**	.709**
	Sig. (2-tailed)		.000	.000	.000	.000	.000
Customer Care	Pearson Correlation	.509**	1	.407**	.435**	.666**	.712**
	Sig. (2-tailed)	.000		.000	.000	.000	.000
Delivery quality	Pearson Correlation	.368**	.407**	1	.357**	.284**	.583**
	Sig. (2-tailed)	.000	.000		.000	.000	.000
Installation quality	Pearson Correlation	.468**	.435**	.357**	1	.360**	.613**
	Sig. (2-tailed)	.000	.000	.000		.000	.000
Warranty quality	Pearson Correlation	.320**	.666**	.284**	.360**	1	.530**
	Sig. (2-tailed)	.000	.000	.000	.000		.000
Customer Satisfaction	Pearson Correlation	.709**	.712**	.583**	.613**	.530**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	

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

b. Listwise N=268

Source: Questionnaire survey, (2022)

The two tailed correlations matric table illustrated above clearly showed that Maintenance and spare parts availability, customer care and installation quality yare correlated at .709, .712, and .613 respectively (which are statistically significant at the .000 level). These results further inferred that each of these three variables (Maintenance and spare parts availability, customer care and installation quality) variables are strongly associated to customer satisfaction—that is changes either in any of these variables (Maintenance

and spare parts availability, customer care and installation quality) is associated with changes in customer satisfaction.

By easily recalling correlation matrix table, it is logical to conclude that all variables or constructs are significantly linked to the dependent variable, customer satisfaction because their correlation coefficient ranges from 0.530 - 0.712, from moderate to strong relationship. As it is confirmed from the correlation matrix, the coefficients of two independent variables are found less than 0.7. Hence, Multicollinearity does not exist in these data.

Hence, in light of the rules of thumb of the Pearson correlations coefficient discussed above, the degree of association between explaining variables namely: Maintenance and spare parts availability, customer care, delivery quality, installation quality and warranty quality and the dependentvariable, customer satisfaction is clearly discussed as below.

4.6.1 Maintenance support and availability of spare parts and Customer satisfaction

Pearson correlation test was calculated for maintenance & availability of spare parts and customer satisfaction. Based on correlations coefficient result shown in the above table, maintenance & availability of spare parts and customer satisfaction are evaluated and their value, .709, is significant at the 0.00 level (2-tailed). The result tells us two variables are correlated at .709 which is statistically significant at the .000 level. And the two pair variables have strong relationship, since this coefficient value, .709, falls within the strong strength intensity level, as per the rules of thumb on the strength of relationship between the two variables. The result also proved that since the value is positive, there is positive interconnection between these two variables

4.6.2. Customer care and Customer satisfaction

Pearson correlation test was also done to know the degree of relationship between the two paired variables, which are customerand customer satisfaction. The results of the correlation between these variables are found .71 2, which showed the existence of positive and significant relationship between them at significant value of 0.000 lower than 0.05. This means that customer care dimension and customer satisfaction are related with strong relationship **(r = 0.712**).**

4.6.3 Delivery quality and customer satisfaction

With the intention to check the correlation between delivery quality and customer satisfaction, Pearson correlation test was carried out, and the results found were like discussed in the correlation coefficient table. There is a positive and significant correlation between delivery quality and customer satisfaction with a significant value of 0.000 lower than 0.05. In other explanation, delivery quality dimension and Customer satisfaction are related with moderate relationship **(r = 0.583**).**

4.6.4 Installation quality and customer satisfaction

Pearson correlation analysis was also checked to determine whether there is positive and significant association between installation quality and customer satisfaction, and the result showed that the existence of positive and a significant correlation between these two paired variables with a significant value of 0.000 lower than 0.05. The result of correlation analysis showed that installation quality and customer satisfaction are correlated with a strong relationship **(r =- 0.613**).**

4.6.5 Warranty quality and customer satisfaction

For the explaining and the dependent variables, warranty quality and customer satisfaction, also Pearson correlation analysis was considered and the results are illustrated in the correlation table. According to the result, there is a positive and a significant correlation between warranty quality and customer satisfaction with a significant value of 0.000 lower than 0.05. The result of correlation analysis revealed that warranty quality and customer satisfaction are interconnected with a moderate relationship **(r =- 0.530**)**

Table 4.4. Bivariate correlation analysis: Coefficients of the variables

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		β	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	.337	.154		2.183	.030		
	Maintenance & Spare parts availability	.307	.033	.349	9.381	.000	.649	1.541
	Customer care	.249	.039	.293	6.456	.000	.435	2.299
	Delivery quality	.186	.026	.239	7.032	.000	.777	1.286
	Installation quality	.168	.029	.208	5.812	.000	.699	1.430
	Warranty quality	.065	.033	.081	1.999	.047	.548	1.825

a. Dependent Variable: Customer Satisfaction

Source: Questionnaire survey, (2022)

As illustrated in the above table, Collinearity Statistics column, the lower tolerance value is .435 which is beyond .10 and the maximum VIF value is 2.299 which is significantly smaller than maximum value that it could. Hence, it is rational to generalize that in this particular research there are no explaining variables which are greatly interconnected among them; Thus, multicollinearity is not a challenge and will not disrupt the research findings.

4.7 Regression Analysis

The correlation coefficient helps to understand the overall strength of interconnection and the direction of the relationship between the independent and dependent variables. There are occurrences, however, when these do not provide adequate information to reach into rational decision. Hair et al. (2003) indicated regression as one of the analysis methods used to iknow the relationship in more detail. To make predictions about future effect, (1) extrapolation from past behavior of the variable; (2) simple guesses; or (3) use of a regression equation that compares information about related variables can be used. Extrapolation and guessing do not provide any means of explaining why.

Bivariate regression analysis is a statistical technique that uses information about the relationship between an independent or predictor variable and a dependent or criterion variable, and combines it with the algebraic formula for a straight line to make predictions. Particular values of

the independent variable are selected, and the behavior of the dependent variable is observed. These data are then applied to the formula for a straight line.

The first assumption behind regression analysis, just like correlation analysis, is that a linear relationship will provide a good description of the relationship between two variables. Second, even though the common terminology of regression analysis uses the labels ***dependent*** and ***independent*** for the variables, those names don't mean that we can say one variable causes the behavior of the other. Regression analysis uses knowledge about the level and type of association between two variables to make predictions. Statements about the ability of one variable to cause changes in another must be based on conceptual logic or information other than just statistical techniques.

Finally, the use of a simple regression model assumes:

(1) the variables of interest are measured on interval or ratio scales (except in the case of dummy variables);

(2) these variables come from a bivariate normal population (the same assumption made by correlation analysis); and

(3) the error terms associated with making predictions are normally and independently distributed.

Taking into consideration the above assumptions, the linear regression model is developed and discussed in detail as illustrated below.

4.7.1 Regression analysis between the determinant factors of customer satisfaction

The bivariate regression analysis in the IBM© SPSS© version 22 produce four important tables. The first table discusses the descriptive statistics result:

Table 4.5. Descriptive statistics (Mean and St. Deviation

	Mean	Std. Deviation	N
Customer satisfaction	4.7463	.39485	268

Maintenance& spare parts availability	4.6049	.44777	268
Customer care	4.5323	.46450	268
Delivery quality	4.4463	.50698	268
Installation quality	4.4487	.48857	268
Warranty quality	4.4655	.49052	268

Source: Questionnaire survey, (2022)

The Descriptive Statistics table displays the mean and standard deviation of the dependent variables (Maintenance &spare parts availability, customer care, Delivery quality, Installation quality, warranty quality) and the same measures for the independent variable Customer satisfaction.

Table 4.6 Regression analysis: Model Summary

ModelSummary[f]

					Change Statistics					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
1	.709[a]	.502	.501	.27904	.502	268.623	1	266	.000	
2	.818[b]	.669	.666	.22808	.166	133.119	1	265	.000	
3	.854[c]	.728	.725	.20691	.060	58.000	1	264	.000	
4	.873[d]	.762	.758	.19421	.033	36.674	1	263	.000	
5	.875[e]	.765	.761	.19311	.004	3.995	1	262	.047	1.583

a. Predictors: (Constant), Maintenance &spare parts availability

b. Predictors: (Constant), Maintenance &spare parts availability, customer care

c. Predictors: (Constant),Maintenance &spare parts availability, customer care, Delivery quality

d. Predictors: (Constant),Maintenance &spare parts availability, customer care, Delivery quality, Installation quality

e. Predictors: (Constant), Maintenance &spare parts availability, customer care, Delivery quality, Installation quality, warranty quality

f. Dependent Variable: Customer Satisfaction

Source: Questionnaire survey, (2022)

The above table 4.6, Model Summary, shows that the R-square for the first, second, third, fourth and fifth regression models are .502, .669, .728, .762, and .765 respectively. These R-square represent that the percentage of variation in one variable that is accounted for by another variable. Hence, Maintenance &spare parts availability account for 50.2% of the total variation in customers'satisfaction. Similarly,

customer care, Delivery quality, Installation quality, warranty quality each account for 66.9%, 72.8%, 76.2% and 76.6% respectively

Table 4.7. Regression analysis: ANOVA

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	20.915	1	20.915	268.623	.000[b]
	Residual	20.711	266	.078		
	Total	41.626	267			
2	Regression	27.840	2	13.920	267.582	.000[c]
	Residual	13.786	265	.052		
	Total	41.626	267			
3	Regression	30.324	3	10.108	236.091	.000[d]
	Residual	11.303	264	.043		
	Total	41.626	267			
4	Regression	31.707	4	7.927	210.164	.000[e]
	Residual	9.919	263	.038		
	Total	41.626	267			
5	Regression	31.856	5	6.371	170.846	.000[f]
	Residual	9.770	262	.037		
	Total	41.626	267			

a. Dependent Variable: Customer Satisfaction

b. Predictors: (Constant), Maintenance &spare parts availability

c. Predictors: (Constant), Maintenance &spare parts availability, customer care

d. Predictors: (Constant), Maintenance &spare parts availability, customer care, Delivery quality

e. Predictors: (Constant), Maintenance &spare parts availability, customer care, Delivery quality, Installation quality

f. Predictors: (Constant), Maintenance &spare parts availability, customer care, Delivery quality, Installation quality, warranty quality

Source: Questionnaire survey, (2022)

The third table shown above, the ANOVA table presents the F-ratio for each regression model that indicates the statistical significance of the overall regression model. The variance in customer satisfaction that is associated with maintenance and spare parts availability is referred to as explained variance. The remainder of the total variance in customer satisfaction that is not associated with maintenance and spare parts availability is referred to as unexplained variance.

The F-ratio is the result of comparing the amount of explained variance to the unexplained variance.

The larger the F-ratio, the more variance in the dependent variable that is associated with the independent variable. Hence, the F-ratio for first, second, third, fourth and fifth models are 268.623, 267.582, 236.091, 210.164, and 170.846 respectively which is significant at the .000 level.

Table 4.8. Regression analysis: Coefficients

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.l
		B	Std. Error	Beta		
1	(Constant)	1.868	.176		10.586	.000
	Maintenance &spare parts availability	.625	.038	.709	16.390	.000
2	(Constant)	1.022	.162		6.317	.000
	Maintenance &spare parts availability	.412	.036	.468	11.382	.000
	Customer Care	.403	.035	.474	11.538	.000
3	(Constant)	.629	.156		4.044	.000
	Maintenance &spare parts availability	.360	.034	.408	10.721	.000
	Customer Care	.334	.033	.393	10.140	.000
	Delivery quality	.213	.028	.273	7.616	.000
4	(Constant)	.414	.150		2.753	.006
	Maintenance &spare parts availability	.303	.033	.344	9.215	.000
	Customer Care	.294	.032	.346	9.286	.000
	Delivery quality	.186	.027	.239	7.003	.000
	Installation quality	.175	.029	.216	6.056	.000
5	(Constant)	.337	.154		2.183	.030
	Maintenance &spare parts availability	.307	.033	.349	9.381	.000
	Customer Care	.249	.039	.293	6.456	.000
	Delivery quality	.186	.026	.239	7.032	.000
	Installation quality	.168	.029	.208	5.812	.000

Warranty quality	.065	.033	.081	1.999	.047

a. Dependent Variable: Customer satisfaction

Source: Questionnaire survey, (2022)

The fourth table, the Coefficients table, shows the regression coefficient for each variable. The column labeled unstandardized Coefficients indicates the unstandardized regression coefficient for the corresponding variable. For instance, the unstandardized regression coefficient for Maintenance &spare parts availability in the above table is .625. The column labeled Sig. shows the statistical significance of the regression coefficient, as measured by the t-test. The t-test examines the question of whether the regression coefficient is different enough from zero to be statistically significant. The t statistic is calculated by dividing the regression coefficient by its standard error (labeled Std. Error in the Coefficients table).

The Coefficients table also shows the result for the Constant component in the regression equation. This item is the 'a' term in the equation for a straight line. If the independent `variable takes on a value of 0, the dependent measure would have a value of 1.868. Combining the results of the Coefficients table into a regression equation, thus the models for each construct is indicated below:

Model1:

Predicted value of CS = 1.868 + .625 (MS) + .27904 (avg. error in prediction) at .000 sig

Where: CS = Customer satisfaction
MS = Maintenance &spare parts availabilityModel3

In this first model the assumption is that all the independent variables are constant except Maintenance &spare parts availability. According to Hair et al. (2003) the general definition of the regression coefficient that describes the relationship between one independent variable and the dependent variable of interest is that it signifies the average amount of change in the dependent variable associated with a unit change in the independent variable, assuming all other independent variables in the equation remain the same. The other models can be handles in the same fashion by considering the coefficient from the coefficients table above.

4.7.2. Multiple regression assumption tests

1. Normality Test

I. Homoscedasticity Check and Normality of Residuals

Homoscedasticity means having the same scatter. For it to exist in a set of data the points must be about the same distance from the line and the histogram for this study is bell shaped which shows normal data distribution.

II. Durbin Watson Test

The Durbin Watson Test that is also referred as serial correlation in residuals that compute the autocorrelation from the regression analysis. According to Field (2009), test statistic believed normal in values that ranges between 1.5 and 2.5. The Durbin-Watson d = 1.583, which is between the two critical values of 1.5 and 2.5 ($1.5 < d < 2.5$), thus it can be assumed that there is no first order linear autocorrelation in the multiple linear regression data in this research. Thus, the data is assumed Normal.

2.multi-collinearity

The characteristic of the data presents situation in which the independent variables are highly connected among themselves is explained as multicollinearity (Hair et al., 2003).

As per Ary et al., (2010) explanation, multiple regressions are a co relational procedure that evaluates the relationships among variables. Specifically, this technique helps researchers to come up with the best possible weighting of two or more independent variables and to yield a maximum correlation with a single dependent variable. This study used both Tolerance limit and Variance inflation factor to check collinearity among used variables.

Both Tolerance limit and Variance inflation factor tell us the extent to which each independent variable is explained by the other independent variables. If the tolerance result of the study is

smaller than .10 or the VIF is 10 or larger, it can be concluded that multicollinearity is a problem (Hair et al., 2003).

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for β		Collinearity Statistics	
		β	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	.337	.154		2.183	.000	.033	.641		
	Maintenance &spare parts Availability	.307	.033	.349	9.381	.000	.243	.372	.649	1.541
	Customer care	.249	.039	.293	6.456	.000	.173	.325	.435	2.299
	Delivery quality	.186	.026	.239	7.032	.000	.134	.238	.777	1.286
	Installation quality	.168	.029	.208	5.812	.000	.111	.225	.699	1.430
	Warranty quality	.065	.033	.081	1.999	.000	.001	.129	.548	1.825

a. Dependent Variable: Customer satisfaction

As shown in the table above in the, collinearity Statistics column, the smaller tolerance value is 0.435 which is beyond 0.10 and the maximum VIF value is 2.299 which is much slighter than greatest value that it can. Hence, it is possible to conclude that in this research there are no independent variable which are highly correlated among them, hence multicollinearity is not a problem and will not affect the research findings.

4.7.3 Multiple Linear Regression

Multiple linear regressions were carried out to identify the relationship and to determine the highest explaining variables that affected customer satisfaction. This regression analysis was conducted to know and understand by how much each predictor (Maintenance &spare parts availability, customer care, Delivery quality, Installation quality, warranty quality) explains the dependent variable that is customer satisfaction. In order to show the level of influence that each dimension has on customer satisfaction, the study used the Standardized Coefficients. The results of the regression analysis are the following.

Table 4.9. Linear multiple regression analysis: Model Summary

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson

1	.875[a]	.765	.761	.19311	1.583

a. Predictors: (Constant), Warranty quality, installation quality, delivery quality, customer care, Maintenance &and spare parts availability

b. Dependent Variable: Customer satisfaction

Source: Questionnaire survey, (2022)

Table 4.9. Above illustrates the multiple linear regression model summary. The adjusted R^2 of the model is .761 with the R^2 = .765. This means that the linear regression model with the independent variables used in this study explains 76.5% of the variance of the dependent variable, customer satisfaction and the rest that is 23.5 of customer satisfaction is explained by other variables which are not considered in this study. The Durbin-Watson d = 1.583, which is between the two critical values of 1.5 and 2.5 (1.5 < d < 2.5), thus it can be assumed that there is no first order linear autocorrelation in the multiple linear regression data in this research. Thus, regression model is applicable to conduct. Because all the explaining variables are entered into the linear regression model the R^2 have relatively higher value.

Table 4.10. Linear multiple regression analysis: ANOVA

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	31.856	5	6.371	170.846	.000[b]
	Residual	9.770	262	.037		
	Total	41.626	267			

a. Dependent Variable: Customersatisfaction

b. Predictors: (Constant), Warranty quality, installation quality, delivery quality, customer care, Maintenance &and spare parts availability

Source: Questionnaire survey, (2022)

The above table is the F-test, or ANOVA. The F-Test is the test of significance of the multiple linear regressions. The F-test has the null hypothesis that there is no linear relationship between the variables (in other words R^2=0). The F-test of the Model is highly significant;thus, we can assume that there is a linear relationship between the variables in this model.

Table 4.11. Linear multiple regression analysis: Coefficients

		Unstandardized Coefficients		Standardized Coefficients		
Model		β	Std. Error	Beta	t	Sig.
1	(Constant)	.337	.154		2.183	.000

	Maintenance &spare parts Availability	.307	.033	.349	9.381	.000
	Customer care	.249	.039	.293	6.456	.000
	Delivery quality	.186	.026	.239	7.032	.000
	Installation quality	.168	.029	.208	5.812	.000
	Warranty quality	.065	.033	.081	1.999	.000

Source: Questionnaire survey, (2022)

The above table clearly illustrates the multiple linear regression coefficient estimates including the intercept and the significance levels. Hence, the multiple regression equation described as :

CS = .337 + .307 (MSA) + .249 (CC) + .186 (DQ) + .168(IQ) + .065 (WQ) + .19311 (avg. error in prediction)

Where: CS = Customer Satisfaction
MSA = Maintenance& Spare parts Availability
CC=Customer Care
DQ = Delivery Quality
IQ = Installation Quality
WR = Warranty quality

From the above model, for every increase in Maintenance& Spare parts Availability, Customer satisfaction will also increase by 0.307. Similarly, for every increase in any of the other variables: customer care, delivery quality, installation quality, and warranty quality; the Customer satisfaction will increase by .249, .186, .168, and .065 respectively.

Since all independent variables are entered in the analysis the Beta weights compare the relative importance of each independent variable in standardized terms. Thus, Maintenance& Spare parts Availability have a greater influence on customer satisfaction than the other independent variables.

4.8 Hypothesis Testing

Since all the testes with regard to the assumptions made to make use of regression and correlation analysis is warranted, that is the analysis test is qualified, that is, Significant at P < 0.05: Scale; Strong (r>.5), Moderate (r=5), Weak (r < .5). The table above shows correlation, the

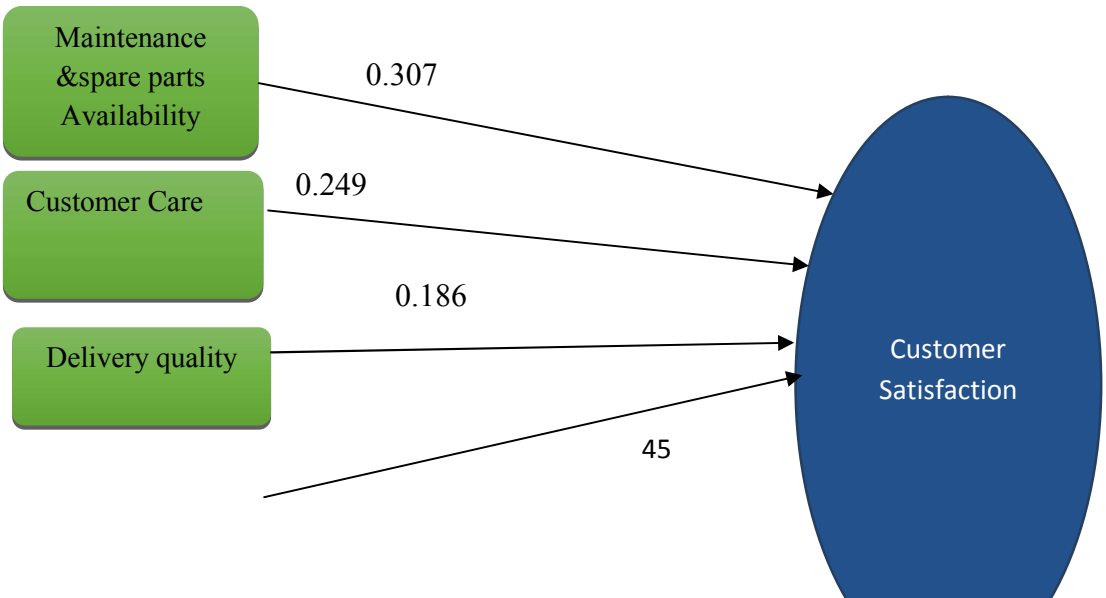
relationship between determinant factors (Maintenance & Spare parts Availability customer care, delivery quality, installation quality, and warranty quality and Customer satisfaction.

The coefficient of correlation table indicates the strength and dimension of association between two variables if relationship exists. To accept or reject a hypothesis the Standardized Coefficient β value shown in table 4.11 is crucial along with the significant value. Hence, the formulated hypothesis is either supported or not supported by referring the coefficient of correlation table,. Thus:

- ✓ $H_{1,}$ –Maintenance& Spare parts Availability positively and significantly affects customer satisfaction is supported with the research finding because β=.349; p < .000. likewise,
- ✓ $H_{2,}$ –Customer care positively and significantly affects customer satisfaction is supported because β = .293 and p < .000.
- ✓ $H_{3,}$ –Delivery quality and significantly affect Customer satisfaction is supported as the β = .239 and p < .000.
- ✓ The fourth hypothesis, H_4 – Installation quality positively and significantly affect customer satisfaction is also supported because the β = .208 and the p < .000.
- ✓ Finally, $H_{5,}$ –Warranty quality positively and significantly affects customer satisfaction is supported as a result of its β = .081 and p < .047 values.

4.9 Hypotheses Results

Factors affecting customer satisfaction



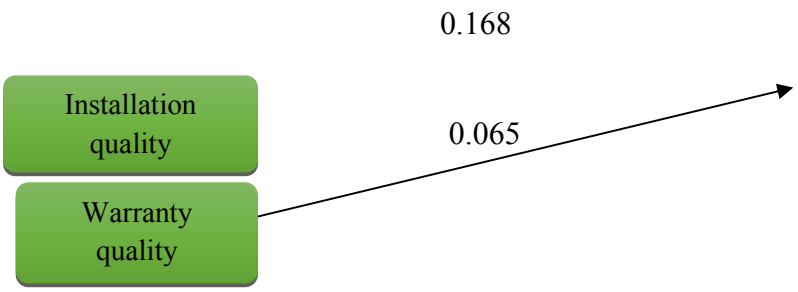


Figure 4.4: findings on the constructs

4.10 Discussion

With respect to the effect of after sales service on customer satisfaction which is presented in the Figure above, the entire developed hypothesis are supported with the research findings meaning after sales service dimensions used in this study determined the level of customer satisfaction.

This is further to mean that variables considered as After sales service dimensions such as maintenance & Spare parts availability, customer care, delivery quality, installation quality and warranty quality have a strong influence on customer satisfaction.

Findings of the study revealed that there is a positive relationship between maintenance & Spare parts availability and customer satisfaction in Moti engineering P.L.C. This is in line with the results of Rahel Temkir, (2018) who examined the effect of After Sales service on customer satisfaction in Lifan Motors and as per their finding customer Maintenance service of Lifan Motor has a positive and statistically significant effect on customer satisfaction. Sudharshan (2010 also showed a significant relationship between maintenance service and customer satisfaction. On his finding Muhammad, (2011) confirmed that maintenance & Spare parts availability has a positive influence on customer satisfaction and profitability.

Findings of the study also revealed that there is a positive relationship between customer care and Customer satisfaction of Moti engineering. This result is consistent with Knapp, (2021) who studied the implication of After service on customer satisfaction and found that for many products, customer satisfaction greatly depends on the aftersales services (Knapp, 2021). Also, Rizaimy Shaharudin et al., (2009) emphasized that customer care greatly influenced customer satisfaction and become a pivot point in customer relationship management.

Further the findings of this study showed that delivery quality has positive and significant effect on customer satisfaction. Again, the finding of this study is in agreement with the findings of Muhammed, et al (2011) who asserted that product delivery quality is a marketing tool that enhances and establishes strong and long relationship with customers, which in the long run leads to customer satisfaction, retention and profitability. Further Ladokun Isaac, et al (2013) proved the positive and significant influence of Delivery quality on customer satisfaction.

The finding on the other specific objectives of this research established that there is a positive and significant relationship between installation quality and customer satisfaction of the studied organization. This result is also in agreement with the research findings of Irini R., (2008) who argued that in Sales Services, Installation is vital for bringing customer satisfaction.

Finally, findings of the study show that warranty quality has a positive and significant effect on customer satisfaction in Moti Engineering. This result is in line with Isaac, et al (2013) who distinguished that Product delivery, installation and warranty were significantly joint predictors of customer satisfaction and retention with ($F(3, 57) = 123.32$; $R2 = 0.875$; $P<.05$). The predictor variables jointly explained 87.5% of customer satisfaction and retention, while the remaining 12.5.% could be due to the effect of extraneous variable.

To sum up with, the findings of this particular study showed that all the developed five constructs have a positive and significant influence on customer satisfaction.

Thus, the effect of the independent variables on customer satisfaction in this research is modeled as:

CS = .337 + .307 (MSA) + .249 (CC) + .186 (DQ) + .168(IQ) + .065 (WQ) + .19311 (avg. error in prediction)

In this particular research customers satisfaction has been greatly depend on maintenance & Spare parts availability with the highest value of .307, followed by customer care .249. The contribution of delivery quality (.186), installation quality (.168) and warranty quality (.065) though their effect on customer satisfaction are significant but very minimal as compared to the other two independent variables.

Therefore, this study showed that maintenance& Spare parts availability is the most explaining variable that affected customer satisfaction, then customer careis the next most explaining variable that affected customer satisfaction followed by delivery quality, installation quality and warranty quality.

Chapter Five

Summary, Conclusion and Recommendation

As described in the structure of the study, this is the last but not the least part of the study which consists of summary of findings, conclusion, and recommendation and research directions for future researchers. These sub sections are discussed clearly as follows.

5.1 Summaryof major findings

The broad objective of this study was to examine the effects of after sales serviceon customer satisfaction in Moti engineering P.L.C by considering business to business Model. The study used quantitative research approach which statistically tested the degree of relationship and level of influence of after sales service dimensions on customer satisfaction.With regards to research design this study was suit for Descriptive and explanatory research designs. The sample was drawn from the population of some selected Ethiopian bank employees. From these banks an aggregate of 290employees were taken as a sample and the study was conducted in the city of Addis Ababa only. Initially, having identified the research variables which are Maintenance &spare parts availability, customer care, delivery quality, installation quality and warranty quality, the researcher tried to check or hypothesized the influence of each identified variables on customer satisfaction in the following manner:

- ✓ H1, -Maintenance &Spare parts availability positively and significantly affects customer satisfaction,
- ✓ H_2 – Customer care positively and significantly affects customer satisfaction,
- ✓ H_3–Delivery quality positively and significantly affects customer satisfaction,
- ✓ H_4 –Installation quality positively and significantly affects customer satisfaction and,
- ✓ Finally, H_5–warranty quality positively and significantly affects customer satisfaction

As it has been illustrated in the previous chapter which is the analysis part,all developed hypothesis were supported with the research findings. The previous chapter clearly discussed the degree of influences of selected variables which are after sales service dimensions on customer satisfaction.

Whereas, this section come up with the summary of major research findings. To begin with the respondents were invited to reflect their degree of agreement on the influence of the five identified research variables on customer satisfaction. Before heading to the analysis, the researcher has tested the internal consistency of items used through the help of Cronbach's Alpha reliability test and the result revealed that, the coefficient alpha for this study's instrument was found above 76.7%.Because the reliability test of all variables is greater than 70%, it is valid to conclude that the test is acceptable to make further analysis.

After checking the goodness of data instruments, the next step was conducting correlation and regression analysis by using Maintenance &spare parts availability, customer care, delivery quality, installation quality and warranty quality (independent variables) and customer satisfaction (dependent variable).

Consequently, the under depicted correlation and regression analysis results were found. According to the result, all the identified explaining variables have shown moderate and strong relationship magnitude with customer satisfaction.

Results of correlation analysis

1. **Maintenance &spare parts availability and Customer Satisfaction**

Maintenance &spare parts availability and customer satisfaction are connected with a strong relationship (**r = 0.709**).**

2. **Customer care and customer satisfaction**

Similarly, one of after sales service dimension, customer care and customer satisfaction have a strong relationship (**r = 0.712**).**

3. **Delivery quality and customer Satisfaction**

The explaining variable, Delivery quality has a positive and moderate relationship with dependent variable, customer satisfaction (**r = 0.583**).**

4. **Installation Quality and Customer Satisfaction**

Installation quality and customer satisfaction are linked with a strong relationship **(r =** 0.613****).**

5. **Warranty Quality and Customer Satisfaction**

Finally, the construct warranty quality and Customer satisfaction are connected with a moderate relationship (**r =0.530**).**

In addition to examining the relationship between the five explaining variables and dependent variable, the degree or level of influences of those variables on customer satisfaction was also examined and the result reveals that all have a significance influence on the dependent variable. This was done through multiple regression analysis, however before the researcher has gone through the regression analysis, the explaining variables were compliant with Multicollinearity test. As per the VIF results all variables correlation coefficients is less than 0.7. Hence, Multicollinearity is not a problem for this study.

In this study, the effect of after sales service on customer satisfaction in Moti Engineering P.L.C in light of B2B business relationship model is analyzed in detail. As described above, the degree of association and explanation of identified research variables on customer satisfaction were determined. These dimensions or variables, which are considered as a major constituent of after sales service in most literatures and previous research works, were: Maintenance &spare parts availability, customer care, delivery quality, installation quality and warranty quality. According to the findings of this particular study, Maintenance &spare parts availability and customer care have been found critical factors to customer satisfaction. This is further to mean that these two variables, Maintenance &spare parts availability and customer care have greatly influenced customer satisfaction. More significantly, Maintenance &spare parts availability has been identified as a main constituent to predict customer satisfaction; that is; Customer satisfaction can be explained in terms of Maintenance &spare parts availability as per this research finding, followed by customer care, delivery quality, installation quality and warranty quality.

To sum up with the multiple regressions analysis of this study revealed that all independent variables used in this study influenced the dependent variable with different degree of explanation.

The Multiple regression analysis result showed that:

- ✓ Maintenance &spare parts availability, customer care, delivery quality, installation quality and warranty quality jointly explain 76.5 % of Customer satisfaction
- ✓ Customer Satisfaction were explained by perceived Maintenance &spare parts availability, customer care, delivery quality, installation quality and warranty quality, individually with percent of 502, 66.9,72.8, 76.20 and 76.5 respectively.

5.2 Conclusions

This study examined the effect of after sales service on customer satisfaction using Maintenance &spare parts availability, customer care, delivery quality, installation quality and warranty quality as a determinant of customer satisfaction in B2B context. As it is revealed empirically from the research findings of this study, it is valid to concluded that customer satisfaction is affected by the above mentioned explaining variables

Thus, as per this research finding it is rational to conclude that:

- ✓ All the identified expanding variables employed in this study have positive and significant association with customer satisfaction. Maintenance &spare parts availability is the most dominant factor on customer satisfaction.
- ✓ Customer care is the next most important factor which can predict Customers satisfaction, followed by delivery quality, installation quality and warranty quality.

5.3 Recommendations

After a detail analysis of the sample survey, which was considered relatively large sample size, major regression and correlation analysis were applied. The developed hypothesis has been checked and the five hypotheses were supported with the research findings. Before heading to the regression analysis, existence of multicollinearity was checked using VIF and tolerance limit

and the result reveled that multicollinearity was not a problem. The regression assumptions such as normality test have also been tested and found valid to precede the regression analysis.

As it has been mentioned in the preceding chapters, all the identified expanding variables employed in this research are found to have positive and strong connection with customer satisfaction. The finding of this empirical study can be generalized to ATM vendors and other businesses who are engaged on parallel services in Ethiopia as the form of process in the service industry is the same and sufficient enough sample size was covered for this study vis-à-vis with the first hand gathered data considered relatively many banks.

To increase the satisfaction level of customers especially in the B2B business model, the underneath possible recommendations are forwarded for execution by the respective stakeholders. The researcher is of the opinion that execution of all recommendation is indispensable to trim down the existing gap and enhance customer satisfaction to the expected level. And some of the recommendations call for serious commitment to implement in the organization:

- ✓ Moti engineering and other service organizations should ensure the right availability of spare parts at the right time for the buyer's needs, meanwhile with lowest possible investments from the sellers' side. The purpose is also to reach the maximum level of satisfaction; this can be accomplished by stable and steady spare parts distribution; The company needs to practice just in time spare parts inventory. At the same time the company should avoid job delays resulted from unavailability of spare parts. Moreover, the company should use advanced maintenance equipment and excellent technology which can improve the functionality of ATMs and maintenance efficiency. Here both preventive and corrective maintenances shall be delivered with high quality to ensure customer satisfaction.
- ✓ Should handle the customers technical support request through organized call center or Portal without fail to meet customers expectation. Should understand the benefits in customer care as an effective tool towards a strategic role in terms of customer relationship.

- ✓ Should Delivery ATMs to their business customers within the agreed time and should deliver the purchased items at right quantity, at right place and to the right customer in order to deliver well-connected service and enhance customer satisfaction.
- ✓ Should deploy ATMs at customer doorstep to enhance the satisfaction level of customers and to make them loyal for future engagement.
- ✓ The company should extend the duration of warranty service that provides adequate time to deliver service as promised.

5.4 Future Research Directions

The study of this research took a sample only from seven Ethiopian commercial Banks in Addis Ababa and Head quarter only whereas there are more than twenty commercial banks providing ATM service for their esteemed customers. Therefore, other researchers should consider other commercial banks which are not included in this study in order to have further improvement and to examine the hypotheses accurately and specifically, increase and expanding the total of sample size will result on the hypotheses without difficulty.

Besides that, it is recommended future research to build results that is feasible to challenge the currently adopted practices. New research is encouraged to use more others analytical tools such as qualitative to be carry out in exhaustive finding

REFERENCE

Adrian, P. et al. 1995. Relationship marketing for competitive advantage: winning and keeping customers. London: Butterworth-Heinemann Ltd.

Ahn JS, Sohn SY, 2009. Customer pattern search for after-sales service in manufacturing. J. Expert. Sys. Appl. 36: 5371-5375.

Alexander, WL., Alexander, S., Dayal, JJ., Dempsey, JD. and Ark, V. (2002). "The secret life of factory service centers", McKinsey Quarterly, Vol. 3, pp. 106-115

Armistead C, Clark G, 1990. After sales support strategy. OMA-UK Conference on Manufacturing Strategy. Bundschuh RG, Dezvane TM, 2003. How to make after sale services pay off. The McKinsey Quarterly. 4(2):116-127.

Asugman, G., Johnson, JL. and McCullough, J. 1997, "The role of after-sales service in international marketing", Journal of International Marketing, Vol. 5, No. 4, pp. 11-28

Bryman A, 1988, Quantity and Quality in Social Research, London: Rout ledge

Bei, V., 2008, The Role of Roadside Assistance in After Sales Service in Automotive Industry: Evaluations based on after sales breakdown service activities of Chrysler group.

Bundschuh RG, Dezvane TM, 2003. How to make after sale services pay off. The McKinsey Quarterly. 4(2):116-127.

Cochran, W.G.1977. Sampling Techniques, 3rd edition. New York: John Wiley & Sons.

Cavalieri, S., Gaiardelli, P. and Ierace, S. (2007), "Aligning strategic profiles with operational metrics in aftersales service", International Journal of Productivity and Performance Management, Vol. 56, Nos. 5 & 6, pp.436-455.

Fornell, C. 1992. A national customer satisfaction barometer: The Swedish experience. Journal of Marketing, Vol. 43, 36-45

Goffin, K., 1999. Customer support: A cross-industry study of distribution channels and strategies. International Journal of Physical Distribution & Logistics Management

Hoffman KD, Bateson JEG, 2010. Services Marketing: Concepts, Strategies, & Cases. Casebound, 4th Edition. Publisher: Cengage Learning.

Hussain N, Bhatti WA, Jilani A, 2011. An empirical analysis of after sales service and customer satisfaction. Management & Marketing Challenges for the Knowledge Society. 6 (4):561-572.

Johnston LD, O'Malley PM, Bachman JG. 1997. National survey results on drug use from the Monitoring the Future Study, 1975-1995. Volume II: Colle.

Kumar Mishram A, 2014. A study on relationship between effective after sales service and customer overall satisfaction at TATA Motors with special reference to Ramgarhia Ramgarh Cantt, Jharkhand. International Journal of Research in Business Management. 2(3): 79-88.

Kurata H, Nam SH, 2010. After-sales service competition in a supply chain: Optimization of customer satisfaction level or profit or both? Int. J. Prod. Econ. 127: 136-146.

Mohammadipour pamsari M, Minavandchal E, 2013. Recognizing the effect of after sale services operational characteristics on resale of products. World of Sciences Journal. 4: 149-169.

Muhammad, JN. 2011, Customer information driven After Sales service management: Lesion from spare parts logistics, PhD Thesis, Erasmus University Rotterdam.

Raddats, C. 2011, "Aligning industrial services with strategies and sources of market differentiation", Journal of Business & Industrial Marketing, Vol. 26, No. 5, pp. 332343

Potluri, R., and Hawariat, H., 2010. Assessment of After-Sales Service Behaviors of Ethiopia Telecom Customers: African Journal of Economic and Management Studies, 1(1), pp 75-90

Raddats, C. (2011), "Aligning industrial services with strategies and sources of market differentiation", Journal of Business & Industrial Marketing, Vol. 26, No. 5, pp. 332-343.

Rigopoulou, I., Chaniotakis, I., Lymperopoulos, C. and Siomkos, G. (2008), "After-sales service quality as an antecedent of customer satisfaction: the case of electronic appliances", Managing Service Quality, Vol. 18, pp. 512-527.

Appendix 1

ADDIS ABABA UNIVERSITY

Questionnaire

Dear respondent, I would like to thank you for taking your time to fill the questionnaire. The purpose of this research is to study **the effect of after sales Service on customer satisfaction in case of Moti engineering P.L.C** This survey is designed as part of my work for a Master of art in marketing management at Addis Ababa University School of commerce. All the information will be kept confidential and used **strictly** for academic purposes only.

Instruction:

Please, mark using (☑) selection method based on your convenience in the appropriate box for your choice. Please, also make sure that your choice is visible.

Part I. General Information

1. How old are you?

☐18-25 ☐ 31-40 ☐ Above 50

☐ 26-30 ☐ 41-50

2. What is your maximum education level?

☐ Diploma ☐ Doctoral

☐ Degree ☐ Professor

☐ Masters ☐ Other

3. What is your gender?

☐ Male

☐ Female

4. How long have you been working in the bank or total work experience? _____ (Years)

☐1-5 ☐ 11-15 ☐ Above 20

☐ 6-10 ☐ 16-20

Part II:the Effect of after sales service on Customer Satisfaction

Please answer each statement below by putting a circle around the number or mark ((☑), (☒), or (⊡)) that best reflects your degree of agreement or disagreement with each statement.

Key:

1 = SD-: Strongly Disagree

2 = D: Disagree,

3 = N: Neutral,

4 = A: Agree,

5 = SA: Strongly Agree,

1.	Delivery Quality	SD	D	N	A	SA
1.1	There is reliability in delivery times of ATMs					
1.2	There is quality of the ATM packaging when delivered					
1.3	ATMs are delivered at the customers store					
1.4	Quality of ATMsitself is not compromised when delivered					
1.5	ATMs are delivered with reception of the proper					

	invoice/delivery papers					
1.6	There is Kindness and friendliness of the delivery personnel					
1.7	Appearance of the delivery personnel is attractive (uniform, cleanness)					
2.	Installation Quality:	SD	D	N	A	SA
2.1	Accurate information is provided to the bank about time of installation of ATMs					
2.2	There is no time elapsed between delivery and installation					
2.3	The supplier ensures the attentiveness of installation personnel in order to avoid damages					
2.4	There is flawless of the installation					
2.5	Kindness and friendliness of the installation personnel is ensured					
2.6	Full advice and instructions given by the technicians to the bank staffs					
3.	Warranty quality	SD	D	N	A	SA
3.1	Adequate information about the ATMs is provided to the bank					
3.2	There is good enough Length of warranty service for ATMs					
3.3	Warranty is implemented as promised					
4.	Customer care	SD	D	N	A	SA
4.1	There is accuracy to solve the problem when appeared					
4.2	There is on time feedback					

4.3	The company has a well established contact center where customers can contact.					
4.4	The company provides customer centric service to our bank					
5	Maintenance support and availability of Spare parts	SD	D	N	A	SA
5.1	Moti engineering has enough access to spare parts in the store					
5.2	There is on time supply of spare parts when required					
5.3	Price of ATM spare parts is fair					
5.4	Problems in relation to the product are Solved instantly.					
5.5	Time it takes for maintenance is minimal or short					
5.6	Cost/price of maintenance is fair enough					
5.7	The Overall ATM maintenance service given by Moti engineering is excellent					

Part III- Customer Satisfaction related questions

Please, also indicate your agreement or disagreement level for the next statements, using the same method of selection as the previous section.

6.	Customer Satisfaction	SD	D	N	A	SA
6.1	The company's services meet the customer's expectation					
6.2	I recommend the ATM service to other banks because of our bank is satisfied					
6.3	Overall, our bank is satisfied with Moti engineering ATM supply and maintenance service					
6.4	Moti engineering strives to satisfy its existing customers.					

Thank you again for your participation in this research,

Mekias Mekonnen