

THE EFFECT OF GYPSUM PRODUCT QUALITY ON CUSTOMER SATISFACTION IN SOME SELECTED TOWNS IN NORTH SHOA ZONE



SALALE UNIVERSITY COLLEGE OF BUSINESS AND ECONOMICS DEPARTMENT OF MANAGEMENT

A Thesis Submitted to Department of Management, College of Business and Economics, Salale University for Partial Fulfilment of the Requirements for the Award of Masters of Business Administration (MBA)

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July, 2022

Fitche, Ethiopia

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DECLARATION

I, Dereje Muleta Abebe, hereby declare that this thesis titled "The Effect of Gypsum Product Quality on Customer Satisfaction in some selected towns in North Shoa Zone" is my original work and that it has not been submitted in part or in full by any other person for an award of degree or publication in any other university/institution.

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CERTIFICATE

This is certify that the thesis entitled “The Effect of Gypsum Product Quality on Customer Satisfaction in Some Selected Towns in North Shoa Zone”, submitted to the Department of Management, College of Business and Economics, Salale University by Dereje Muleta for the degree of Masters of Business Administration (MBA), is original work done by the candidate under our supervision. We further certify that the entire thesis represents the independent work of Dereje Muleta and all the research work were undertaken by the candidate under our supervision and guidance.

This thesis has been submitted for examination with my approval.

Main advisor Dr.Didha Bacha's Signature _____Date_____

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APPROVAL
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BOARD OF EXAMINERS THESIS APPROVAL SHEET

The undersigned certify that I have read and hereby recommend Department of management, Salale University, to accept the thesis entitled “*The Effect of Gypsum Product Quality on Customer Satisfaction in Some Selected Towns in North Shoa Zone*” which had been submitted by Dereje Muleta Abebe in partial fulfillment of the requirements for the award of a Master Degree in Business Administration.

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LIST OF ACRONYMS

EC:	Ethiopian Calendar
CPV:	Customer perceived Value
CS:	Customer Satisfaction
PQ:	Product Quality
SQ:	Service quality
MC:	manufacturing companies.
SPSS:	Statistical Package for Social Sciences

Abstract

The main purpose of this study is to measure the effect of Gypsum product quality on customer satisfaction in some selected towns in North Shoa Zone. The study has used the eight Gavrin's product quality features. These Eight dimensions of product quality features namely Performance, Features, Reliability, Conformance, Durability, Serviceability, and Aesthetics and Perceived quality. However, reliability, durability, Conformance, Aesthetics and serviceability were not used to measure the level of customers' satisfaction in Gypsum product quality due to the reason that they cannot be related to the study. The general objective of this research was to identify the effect of Gypsum product quality on customer satisfaction. The study uses quantitative Research approach and type of research is both descriptive and explanatory research. Both primary and secondary methods of data collection are applied. From the infinite population a sample size was drawn by using Kothari's infinite sample size formula and 384 sample sizes were obtained. The study uses both descriptive and inferential statistics like correlation and regression have been used to find mean score and to test hypothesis and to investigate research problem. According to the findings of the study all the three product quality features have shown a significant positive effect on customer satisfaction. The findings of the regression analysis indicate that those three independent variables of product quality feature indicated in R square is .909, where it means 90.9% variation on dependent variable, i.e. customer satisfaction. Person correlation analysis was also conducted to examine the relationship between product quality dimensions and customer satisfaction and the results shows that all the three dimensions of product quality have a strong positive relationship with customer satisfaction. Based on the finding on the research Gypsum Product quality should concentrate their attention on developing more and improved Gypsum that contains all the necessary product quality features for retaining and sustaining their customers by satisfying their unlimited needs and wants.

Keywords: *customer satisfaction, Product quality, Product quality features, Performance, Features, and Perceived quality*

CHAPTER ONE

INTRODUCTION

1.1. Background of the Study

A product is anything that can be offered to a market for attention-acquiring use or consumption (Hoe & Mansori, 2018). In addition this product being defined as a bundle of utilities consisting of various features and accompanying services. A product is defined in this article paper as something a firm market that will satisfy a personal want or fill a business or commercial need, and it includes all peripheral factors that may contribute to consumer satisfaction (Hoe & Mansori, 2018).

Quality is the degree of excellence at an acceptable price and the control of variability at an acceptable cost (HCilman & Hanaysha, 2015). Quality is the totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs (Mohammed et al., 2017).

Perceived quality can be defined as the customer's perception of the overall quality or superiority of a product or service in terms of its intended purpose relative to the alternatives(Putra, Hartoyo, & Simanjuntak, 2017).

General product quality is defined as the ability to demonstrate a product in its function. It includes the overall durability, reliability, accuracy, ease of operation, and repair products are also other product attributes (Sitanggang, Sinulingga, & Fachruddin, 2019). He stated that the customers were favouring those products that offer the highest quality performance and features. Better product quality will maintain our high level of customer satisfaction, which encourages customers to make future purchases. Product quality is also one of the elements taken into consideration by customers in deciding to make a purchase (Xu, Yu, & Zhang, 2018).

Product quality can play a great role for the company. It builds trust with your customers, and trust is the key to business success. Potential sales are lost because a brand fails to make a deeper connection with the buyers. Product quality also fuels word of mouth and social media recommendations. About 92 % of people trust recommendations from friends and family. It also helps to reduce customer complaints. Marketing strategies have proved again and again that high quality products will obtain more repeat purchases. Product quality also produces a higher return on investment (Hoe & Mansori, 2018).

Product quality can play a great role for the customer as well. It will help the customer attain fulfilment and will reduce the search cost. It will increase the user's security while using the product and provide other benefits (Gani & Hillebrandes Oroh, 2021). A customer is an individual or business that purchases a company's goods or services. The customer is the end goal of any business that pays for supply and creates demand, according to Oliver (Biesok, 2017). Customer satisfaction is a person's feeling or pressure or disappointment that results from comparing a product or service's perceived performance or outcome against his or her expectations. It recognizes the difference between customer expectations and customer perception (Cruz, 2015). If performance meets expectations, the customer is satisfied. If performance is below expectations, the customer is dissatisfied. If performance exceeds expectations, the customer is very satisfied and happy. So, customer satisfaction requires balancing the needs and desires with what is given.

Customer satisfaction has a very strong influence on the competitiveness of the product and, therefore, on the company, so it is also necessary to examine customer satisfaction within the context of competitiveness (Mbango & Phiri, 2015). "Customer satisfaction with a company's products or services is often seen as the key to a company's success and long-term competitiveness" (Suchánek & Králová, 2015).

In different parts of Africa, there are many product companies working on mineral manufacturing. The mining sector in Sudan is considered one of the important sectors, which has not historically involved a large proportion of the national economy, but recently the federal government has started to activate this sector (Elsamani & Minerals, 2015). The importance of this sector is a result of the availability of different types of minerals and raw materials such as limestone, gypsum, chrome, and gold. Gypsum is at the forefront of these products in terms of availability of raw material and low manufacturing costs. Therefore, my study focuses on the effect of gypsum product quality on customer satisfaction in some selected towns in North Shoa Zone, like Sheraro, Degem, Fitché, Gerbeguracha, Mukaturi, and Fital.

1.2. Statements of Problem

Customer satisfaction had a very strong influence on the competitiveness of the product. If a product fulfils the customer's expectations, the customer would be pleased and consider that the product was acceptable or even high quality. However, serviceability and perceived quality had an impact on customer satisfaction, indicating that performance, features, and reliability also had an impact on satisfaction.

In most cases, there were many complaints about defects in the making elements of the gypsum product quality in construction. One of the causes of this condition was due to the poor workmanship of the product's maker. This would affect the lives of the occupants and also give a bad image of the parties involved in the painting and plastering of the building and construction. Besides this, the rate of mixing different materials and workmanship were the major causes of defects in painting construction (Abdulrazak et al., 2010). However, companies were falsely convinced that they knew what their customers wanted because there was no customer satisfaction survey system in place.

So far, different researchers have conducted studies in the areas of performance, conformance, features, aesthetics, perceived quality, and other metrics. According to Suchánek et al. (2015),

As far as the researcher knows, there was no study conducted on the effect of product quality on customer satisfaction in the case of gypsum. As a result, the researcher believes that because the ultimate goal of providing quality products is to achieve customer satisfaction and profit maximization, companies should examine the quality of their products based on product quality dimensions. Thus, this study focuses on assessments of the effect of gypsum product quality on customer satisfaction in some selected towns in North Shoa Zone, like Sheraro, Hambiso, Fitcha, Gerbeguracha, Muketur, and Fital. Thus, the researcher wanted to fill the gap identified above.

1.3. Research Questions

The following were the basic research questions that were raised in the study.

1. What is the effect of Gypsum Product performance on customer's satisfaction?
2. What is the role of Gypsum Product feature in customer's satisfaction?
3. What is the effect of Gypsum Product perceived quality on customer's satisfaction?
4. What is the effect of Gypsum Product on customer's satisfaction?

1.4. Objective of the study

1.4.1. General objective of the study

The general objective of this research was to identify the effect of Gypsum product quality on customer satisfaction in some selected Towns in North Shoa Zone.

1.4.2. Specific Objectives of the Study

To achieve the above general objectives the following specific objectives of the study was identified:

1. To identify the effect of Gypsum performance on customer's satisfaction.
2. To determine the role of Gypsum feature in customer's satisfaction.
3. To explore the role of Gypsum perceive quality in customer's satisfaction.
4. To determine the effect of Gypsum Product in customer's satisfaction.

1.5. Significance of the Study

The research has a great deal of importance for customers to perceive the high quality of gypsum products for different purposes. It assisted them in determining whether the company was delivering quality products to its customers as promised, as well as providing insight into the gap between customer perception and expectations of service and ways to improve it. The researcher also gives some insight about product quality and customer satisfaction in gypsum product factories. It also serves as a base for other researchers to undertake further investigation.

1.6. Scope of the Study

The study was focusing on the effect of Gypsum Product Quality on Customer Satisfaction in some selected towns in North Shoa Zone, like Sheraro, Hambiso, Fitcha, Gerbeguracha, Mukaturi, and Fital. It provided a conceptual and theoretical appraisal of the product quality, which affects customer satisfaction in the case of gypsum. The features used in the Gypsum product quality measures were identified from related literature such as performance, features, and perceived quality measures. Even though there are many gypsum products that exist in Ethiopia, the researcher focused on Gypsum products located in the North Shoa Zone. The fact that Gypsum products in North Shoa Zone customers had painters' paint on their own and others' buildings and contractures in the town, such as Sheraro, Hambiso, Fitcha, Gerbeguracha, Mukaturi, and Fital. The researcher selected only the mentioned study area due to budget and time restrictions.

1.7. Limitation of the Study

The research focused on the effect of gypsum product quality on customer satisfaction format, the case of gypsum product and the focus area conducting the study. Due to time and financial constraints, the researcher is also limited to the research area of Sheraro, Hambiso, Fitcha, Gerbeguracha, Mukaturi, and Fital towns in the area of the North Shoa Zone. Customers who Gypsum paint their own homes and other building and contracting firms were used as sample respondents in the study, but it does not include all Gypsum customers.

1.8. Definitions of Key Terms

The following definitions are provided to ensure uniformity and understanding of these terms throughout the study.

Product: a product is anything that can be offered to a market for attention, acquisition, use or consumption. In this case the researcher is talking about the products on Gypsum Factory(Brown et al., 1999).

Quality: is the totality of features and characteristics of a product or a service that bear on its ability to satisfy stated or implied need. In this case, the researcher is implying about quality features of Gypsum product (Yang, 2017).

Product Quality: it is the characteristics of a product that relies on its ability to satisfy customers need are expressed or implied. In this paper it's about Gypsum product to satisfy the need of the customer(Cruz, 2015).

Customer: Customer is an individual or businesses that purchase companies' goods or service. In this research paper the customer is those who wants and use Gypsum as construction material(Gilania, Taleghani, Reza, & Talemi, 2013).

Customer Satisfaction: is a person's feeling or pleasure or disappointment, which resulted from comparing a products perceived performance or outcome against his/her expectations. In this case it is the person's opinion after consumption of Gypsum product(Mbango & Phiri, 2015).

Gypsum: Defined as the oldest and most commonly used building materials globally.

Painters' is customer who Gypsum paint own and others' buildings used for walls and ceilings. Garvin (1987) proposed the most compressive definition of product quality with the following eight attributes.

Product Performance: product's primary operating characteristics.

Product Conformance: the extent to which a product design and operating characteristics meet established standard.

Product Features: Additional features or the 'bells and whistles' of the product.

Customer-Perceived quality: customer perception of the product's quality based on the reputation of the firm.

1.9. Organization of the Thesis

This research paper contains five chapters. The first chapter contains introduction in which one can get background of the study, statement of the problem, research question, objectives of the study, significance of the study, scope and limitations of the study, organization of the study and definitions of terminologies. The second chapter contains literature reviews of the study. The third chapter contains methodology that the researcher used during the study. Chapter four concerned with data analysis and presentation and the last chapter contains summary, conclusion and recommendations.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1. Theoretical Literature Reviews

2.1.1. General Concept of Product

Anything that can be provided to a market to meet a want or need is considered a product. Products can be tangible items and services, events, experiences, real estate owned by other people, organizations, information, and concepts. Three key factors were used by the customer to evaluate the offering. Product quality, service variety, and pricing appropriateness are all mentioned. Marketers, therefore, need to carefully consider the level at which they place each product's features, benefits, and quality. William (1996). These academics and others concur that the product is at the heart of all marketing efforts; without the product, marketing is almost inconceivable. Successful items are essential to the market.

2.1.2. Definition of Product Quality

Product quality is defined as the degree and direction of mismatch between consumer perception and expectations in terms of various but relatively important elements of product quality that can impact their future purchasing behavior (Djumarno et al., 2018). With the help of their expectations and perceptions of a product experience, customers evaluate the quality of a product. A comparison of the customer's prior expectations and the actual product experience yields their assessment of the product's quality. Two distinct viewpoints and lenses through which to observe quality are used to define it. These are Intangible Service Delivery Orientation and Tangible Product Orientation. Both are vital, but the latter is more crucial given that the majority of tangible hospitality items are Product orientation with tangibles: here the item itself is the main emphasis, but from two additional angles (Kotler, Bowen, and Makens, 1996): Products "Features" are the attributes of the good or service that are viewed as improving consumer satisfaction. While this may or may not be a customer-focused approach (depending on whether the consumer genuinely asked for product enhancements), the approach is actually to introduce more features in the hopes that they were increase customer satisfaction.

2.1.3. Gypsum Product Quality

2.1.3.1. Overview of Gypsum

Gypsum is one of the oldest and most commonly used building materials globally due to its many positive attributes. It is a rock like mineral commonly found in the earth's crust, extracted, processed and used by Man in construction or decoration in the form of plaster and alabaster since 9000 B.C. Plaster was discovered in Catal-Huyuk in Asia in an underground fresco, and in Israel Gypsum floor screeds were found from 7000 B.C.

During the time of the Pharaohs, Gypsum was used as mortar in the construction of the Cheops Pyramid (3000 B.C.). In the middle Ages and the Renaissance, decorations and artistic creations were made of plaster. Since then, the ranges of construction-related uses have continued to multiply.

Figure 2. 1: Typical Example of Gypsum



Source: Survey of 2022

2.1.3.2. Gypsum Product

It is also economical, fire resistant, and versatile and can reduce sound (Olson, 2001). Gypsum ($\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$) deposits are formed naturally in sedimentary basins where calcium sulfate (CaSO_4) resources were hydrated. Gypsum is predominantly used for wallboard, also known as gyprock walls, and has been extensively used in the building industry for the construction of interior walls and ceilings.

The main component of the wallboards is gypsum, which is extruded between two layers of paper. There are many other known markets for the product, including its widespread use in the farming industry for its agricultural benefits and soil improvement capabilities, as well as for animal bedding (CDRA, 2019; Gypsum Association, 2019). The essential role of gypsum is widely acknowledged in Cement production, although only used in small percentages (about 3-5%, by weight). It is incorporated into the cement as a set regulator to control the setting of cement in order to reduce the speed of reaction with water (Naik et al., 2010; Sharpe and Cork, 2006).

Gypsum has been used for thousands of years to decorate buildings, make sculptures and other art products. Gypsum is formed by sedimentary deposition processes. To use gypsum as a building material, the crushed and ground gypsum is dried in a kiln. Depending on the temperature of the kiln, different building gypsums with different properties are produced. The fired gypsum is used as a dry, powdered product, for example, as a binder in plaster or screed. Before processing, these dry products are mixed again with water.

Gypsum, plaster and gypsum screed, and gypsum plasterboard consist essentially of building gypsum (binder) and sand. Gypsum is also added to cement and acts as a setting retarder when the concrete hardens. Today gypsum is also used extensively as a building material in so called plaster boards.

2.1.4. The Modern Use of Gypsum in Construction

The modern use of Gypsum as a building material was discovered in 1888 when the American Augustine Sackett invented a machine for producing plasterboards (also known as wallboards and dry walls) composed of several layers of paper with Gypsum in-between. The first plasterboard plant was built in the USA in 1901. In 1908, the plasterboard technique was improved by the American Stephen Kelly.

In Europe, the first plasterboard plant was built in Liverpool in 1917 and the second one in London in 1926. In continental Europe, the first factory was completed in Riga in 1938. Nowadays, the manufacturing of plasterboards is increasing worldwide in Eastern and Western Europe.

Plasterboards: - It is used for partitions and the lining of walls, ceilings, roofs and floors. The properties of plasterboard can be modified to meet specific requirements, such as fire resistance, humidity resistance, impact resistance, etc.

Decorative Plaster: - Plaster powder, mixed with water, manually or through the use of silo-supplied spray systems, is used to create an effective and aesthetically-pleasing lining for brick and block walls, and for ceilings.

Building plaster: - Gypsum plaster is used for walls and ceilings.

Plaster blocks: - Gypsum is used for partitions and Gypsum tiles for ceilings.

The main Gypsum products that have been produced are Chack it used to paint the walls of construction house, and Board it used for make the wall of house and also used to make corns of the house.

2.1.5. Concepts of Customer Satisfaction

Customer is an individual or businesses that purchase companies' goods or service. The customer is the end goal of business since it the customer who pays for supply and creates demand Oliver (1991). As Kotler (2006) defined customer satisfaction as the level of persons felt state resulting from comparing a product's perceived performance or outcome in violation to his/her own expectations. So, customer satisfaction could be considered a comparative behaviour between inputs beforehand and post obtainments.

Customer satisfaction conceptually has been defined as feeling of the post utilization that the consumers experience from their purchase Westbrook and Oliver (1991). Westbrook & Oliver (1991) further suggest that customer satisfaction were drive firms to improve their reputation and image, to reduce customer turnover, and to increase attention to customer needs. Such actions were help firms create barriers to switching, and improve business relationships with their customers. Although many businesses are interested in maximizing customer satisfaction it is not because customer satisfaction is the ultimate objective in itself. The underlying motive is that satisfied customer yield greater profits. Companies with more satisfied customers were more successful and more profitable.

2.1.6. Theories of Customer Satisfaction

According to consistency theories, buyers may experience some tension when expectations and actual product performance do not match. The customer was adjusting expectations or perceptions of the product's real performance in order to release this tension. Consistency theory is a broad term for four distinct theoretical stances.

2.1.6.1. Assimilation Theory

Festinger's (1957) dissonance theory is the foundation of assimilation theory. According to the dissonance theory, consumers compare how well a product performs against their expectations for it cognitively. Assimilation theory, a viewpoint on consumer post-usage evaluation, was first presented in the literature on customer satisfaction.

Anderson (1973) asserts that consumers attempt to prevent dissonance by changing their perception of a particular product in order to make it more consistent with their expectations. Additionally, customers can lessen the tension brought on by a mismatch between expectations and actual product performance by either changing expectations to match actual product performance or by increasing satisfaction by downplaying the relative significance of the disconfirmation they experienced.

2.1.6.2. Contrast Theory

Hovland, Harvey, and Sherif were the first to introduce the contrast theory (1987). Contrast theory is described as the propensity to emphasize the differences between one's own attitudes and those reflected in opinion statements. Contrast theory offers a different perspective on the customer post-usage evaluation process than assimilation theory did because post-usage evaluations result in predictions that are in direct opposition to those made about how expectations will affect satisfaction. Contrast theory contends that the surprise effect occurs and causes the gap to be exaggerated, whereas assimilation theory maintains that customers aim to reduce the discrepancy between expectation and performance.

The contrast theory claimed that any deviation from expectations was amplified in the direction of the deviation. The goods or service would be rejected as wholly unsatisfactory if the company increases expectations in his advertising and then a customer's experience is only marginally less than that promised. Conversely, over-delivering and under-promising in advertising led to exaggerated positive disconfirmation.

2.1.6.3. Assimilation-Contrast Theory

Based on Sherif & Hovlands' (1961) examination of the assimilation and contrast effect, Anderson (1973) introduced the assimilation-contrast theory in the context of post-exposure product performance. According to the assimilation-contrast hypothesis, if a customer's latitude (range) of acceptable performance is met even if it falls short of expectations, the disparity was ignored assimilation was put into action, and the performance was viewed as acceptable.

2.1.6.4. Negativity Theory

According to this Smith & Aronson (1963) theory, any performance that fell short of expectations disturbed the person and generated "negative energy." The disconfirmation procedure is the basis of negative theory. According to the negative theory, clients react negatively to any disconfirmation when their expectations are high.

Accordingly, dissatisfaction was occurring if perceived performance is less than expectations or if perceived performance exceeds expectations. Affective feelings toward a product or service were inversely related to the magnitude of the discrepancy.

2.2. Empirical Literature Review

2.2.1. Effect of product performance on customer's satisfaction

Gavrin's (1987) study on product quality characteristics claims Performance describes a product's basic functioning qualities. The components of both the product- and user-based methods are combined in this aspect of product quality. There are quantifiable product features at play, and brands may typically be evaluated objectively on at least one performance metric. But the relationship between effectiveness and quality is less clear. Individual preference typically determines whether a performance difference is interpreted as a quality difference. Users often have a wide range of requirements and interests, and everyone is likely to associate quality with excellence in their immediate area of interest.

2.2.2. Role of product Features in customer's satisfaction

The second dimension of quality in Gavrin's (1987) research of product quality features is features. Features are the extras that complement a product's core functionality. They are its bells and whistles. It might be challenging to make a clear distinction between primary and secondary product attributes, such as performance and features. Product performance characteristics involve quantifiable and objective characteristics, and individual preference has an equal impact on how

these characteristics translate into quality variances. These parameters, which call for a product to be used for a while, are more applicable to durable commodities than they are to quick-consumption items and services.

2.2.3. Effect of Product Perceived Quality on Customer’s Satisfaction

According to Gavrin (1987) product quality features study perceptions of quality can be subjective as assessments of aesthetics, because consumers do not always possess complete information about a product attribute, they must frequently rely on indirect measures when comparing brands. In these circumstances” products were evaluated less on their objective characteristics than on their images advertising, or brand names. These forces even affect scholarly judgments. Together, the four major dimensions of quality cover a broad range of concepts. Several of the Dimensions involve measurable product attributes: other reflect individual, some are objective and Timeless, while other shift with changing fashions.

2.3. Summary of Related Literature Review and Research Gap

Different researcher select manufacturing companies are explaining briefly in the literature part of the study such as Performance, feature and perceived quality. The researcher previously study show that the performance of different product had a significant and direct influence on customer satisfaction.

Table 2. 1: Summary of Related Literature Review

Authors	Purpose of the Study	Finding and result	Recommendation
(Athiyah, 2016)	Study the impact of gypsum quality on CS. to make an analysis if the customer is satisfied with the quality of products offered.	As the study shows, there is a dependency between satisfaction with products and related service companies. The analysis also showed PQ is a guarantee of satisfaction and people are more satisfied than dissatisfied.	It concluded that respondents from whom the brand is missing a guarantee of quality are satisfied.
(Cruz, 2015).	The purpose of this study was to examine the relationship mongPQ &CS in the U.S automobile industry.	The result shows significant statistical relationship between PQ and CS	Quality cars lead fewer injuries \$ death vehicular accidents promoting change U.S automobile buyer \$ seller.

(Olga Mado do, 2015)	The availability of quality products helps an organization build a reputation that yields customer loyalty and satisfaction.	The availability of a product, and how it is promoted, packaged, and advertised influences customers satisfaction.	Consumers are always in a constant search of products to satisfy their present or future desires, the availability of a product when the consumer wants it leads to satisfaction.
(Olise & Ojiaku, 2018).	This research to examine the effects of PQ on CS in Anambrastate MC.	Based on these the researchers founded that the quality of a product has significant impact on the customer satisfaction.	Based on researchers recommended the PQ need for the customer to put into consideration.
(Razak, Nirwanto, & Triatmanto, 2016)	The research tried to Study of perception and Causality for the customer of toothpaste convenience product.	The researchers founded that the Functional value of the toothpaste product bought by the customer is not optimal yet to be a major consideration satisfy customers.	Based on these Researchers recommended that precisely the quality of the toothpaste product conforming production standard in advance.
(Hoe & Mansori, 2018).	The researchers tried to study the factor that affects CS based on PQ features in the engineering industry in Malaysia.	Based on the researchers founded that serviceability & PQ has impact on CS and it also indicates that performance, feature, reliability has influence on satisfaction but not significant.	Based on these researchers insights to understand the dimensions of Product Quality that affect CS.
(Athiyah, 2016).	Research tried examine relationship and impact between dimensions independent variable (the product of the performance, features, reliability, conformance, durability	Based on these the researchers founded most important results as the quality is considered as the source basic and important as it leads to pleasing the customer and increase loyalty and increases the degree of profitability in the medium and long term in the organization.	Based on these researchers that the need to establish a new culture of quality within the company. Focusing on a set of values, which makes it imperative for all employees in the company's commitment to achieving continuous improvement.

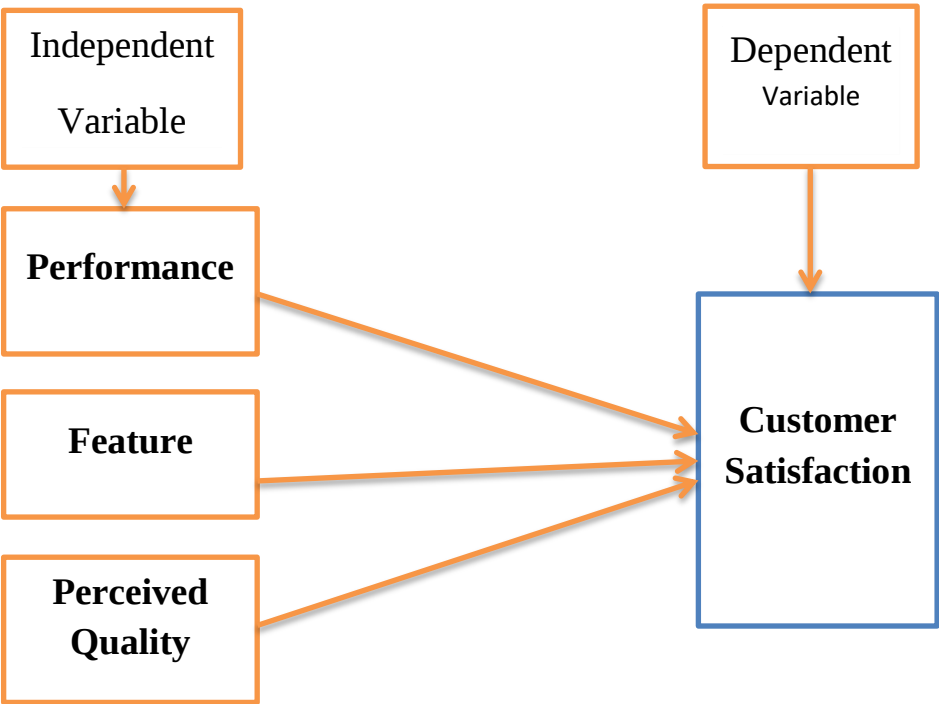
(Uzir, Jerin, Al Halbusi, Hamid, & Latiff, 2020)	This research tried to examine the development of technology, new and innovative electronic home Appliances is available in the market.	Researchers discovered that PQ and SQ have beneficial effects on CS; SQ has an impact, but PQ has no impact on CPV. On service quality and the \$PQ \$CS relationship, CPV has a mixing mediating effect. The advantage of PQ, in particular	Based on these researchers that The study contributed to contextual and theoretical knowledge in regards to home Appliances. The practicing managers can collect an insight of CS for their business.
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Source: Survey of 2022

2.4. Conceptual Framework Study

This study examined how the quality of the gypsum product affected customer satisfaction in some selected towns of North Shoa Zone, including Sheraro, Hambiso, Fitcha, Gerbe-guracha, Mukaturi, and Fital. Performance, features, and perceived quality of the product were the independent factors in this study. The study's dependent variables and customer satisfaction were both measured. The following conceptual framework was created based on the study-related product features and the aforementioned literature review.

Figure2. 2: Conceptual framework of the study



Source: My own computation

CHAPTER THREE

RESEARCH METHODOLOGY

3.1. Description of the Study Area

North Shoa Zone is one of the zones found in Oromia Regional State and is located in the northern part of the state, 112 km. from Addis Ababa. The research was carried out in several towns in the North Shoa Zone, including Sheraro, Hambiso, Fitcha, Gerba-Guracha, MukaTuri, and Fital. This town is located 30km, 12km, 44km, 38km, and 26km away from the North Shoa Zone, excluding Fitcha Town. Agro-ecological is divided into "Dega" (cool to very cold climate in the highlands), and "Woinedega" (moderately cool climate in the mid-lands). Its geographical coordinates are 8° 58' 0" North and 38° 36' 0" East. The majority of the inhabitants (94.42%) reported that they practiced Ethiopian Orthodox Christianity, and 3.61% were Protestant and spoke English. The main languages of the population are Amharic and Afaan Oromo. The reason for choosing this area for this research was that it depends on the research of others (NSNFO, 2022).

3.2. Research Design and Approach

3.2.1. Research Design

In this study, the researchers employed a quantitative research design, examined the data, and compared the findings to determine whether they supported or refuted one another. Creswell (2013).The researcher employed both descriptive and survey explanatory research designs. The major goal of this study was to assess the impact of product quality on customer satisfaction in some selected towns in North Shoa Zone.

The researcher uses a descriptive and explanatory research design. Descriptive research was employed as the main research method of this study and was used to describe the effect of product quality and its effect on customer satisfaction as described by Suryabrata (2003), the descriptive method is a method that describes the study systematically, factually, and accurately,

utilizing facts, behaviours, and relationships between the phenomena being studied. As cited by Naik et al. (2010), the researchers also used an explanatory research design since the researcher will explain the relationship between the product quality variables and customer satisfaction and how these dimensions affect customer satisfaction.

3.2.2. Research Approach

To obtain relevant information about the issue and to described and explained the determinants of product quality variables and customer satisfaction, the study was employed quantitative research approach the data were analyzed them then compared the results confirm or disconfirm each other Creswell (2013).

3.3. Type and Source of Data

The study was used quantitative data and also uses primary and secondary data sources. The primary data were collected through structured questionnaire and secondary sources of data were collected from published and unpublished documents related with product quality and customer satisfaction.

3.4. Methods of Data Collection

The primary data was collected through a self-administered questionnaire based on product quality dimensions. Questionnaires were prepared to get idea about the customer's experience of product. For understanding the importance and satisfaction of each product quality dimensions a 5-scale questionnaire will be used (1= strongly disagree, 2= disagree 3= somewhat agree, 4= agree, 5=strongly agree).

3.4.1. Questionnaire

Using questionnaire in the research has its own advantage when a researcher attempts to compare with other data collection instrument. According to John (2011) the responses are gathered in a standard way, so questionnaires are more objective, certainly more than interviews. So the questioners conduct with customers who paint and plaster gypsum, those who have direct experience on gypsum work. The structured closed -ended questions were adapted from Henok Bekele (2020) on the effect of product quality on customer satisfaction. The rinses Likert scale with description on every rating scale is balanced in which respondents. In this research questioners were conduct in English and translated to Amharic for respondents because of its suitability.

3.5. Sample design

3.5.1. Study Population

The target group of the study was a gypsum product end user who manufactured gypsum products, Chuck used it to paint (plaster) the walls and ceilings of their own and other buildings of the house and contracture found in the North Shoa Zone in six selected towns, such as Shararo. , Hambiso, Fitcha, Gerba-Guracha, MukaTuri, and Fital.

3.5.2. Sampling Technique

The study was employed purposively sampling technique. The rationale behind there is no known number of target populations so that using this non-probability sampling in which researchers rely on their own judgment when choosing members of the sample to participate in their study. Non probability sampling refers to the sampling process in which the samples are selected for a specific purpose with a predetermined basis of selection (Creswell, 2013).

3.5.3. Sampling Size Determination

Well-defined sampling was the process of obtaining information about the entire population by examining only part of it Kotler (2004). It offers cost and time of data collection and analysis sampling was a day to day practice in social science research. In this study it was impossible or impractical to access the number of Gypsum product end-user (customer) in the study area. The sample frame was not accessible and the population was unknown and many in number. In such case for population that was large as par to yield are representative sample for proportion and key variable of the population was qualitative.

According to Kothari (2004) if the population was unknown I use the following formula to get minimum sample size.

$$n = Z^2 * s^2 / d^2$$

Where n = Minimum sample size

Z = the value of standard normal distribution.

S = the population standard deviation.

D = the maximum allowed deviation or error of the estimate.

$$Son = Z^2 * s^2 / d^2 = (1.96)^2 (0.5)^2 / (0.05)^2$$

$$n = 384$$

Where: 1.96 is the value of p at 95% confidence level.

0.5 is number of standard deviations of commonly used levels of confidence.

0.05 is acceptable standard error of the mean.

Generally, based on the above formula the study was employs 384 respondents.

3.6. Validity and Reliability

3.6.1. Validity

According to Mugend& Mugenda (2003) content validity is a measure of instrument and it provides adequate coverage of the investigative questions guiding the study. For survey, each question is given to a panel of subject matter expert analysts, and they rate it. They give their opinion about whether the question is essential useful or irrelevant to measuring the construct under study. So, Content validity uses a more formal and statistics-based approach because experts in the field judge the questions on how well they cover the study issues. Hence, in this study content validity were determined by consulting the Advisor.

3.6.2. Reliability

Reliability is a measure of the degree to which a research instrument yields consistent results or data after repeated trials. For this study internal consistence reliability is determined by Cronbach’s alpha. When conducting Cronbach’s alpha, one must be sure not to mix positively and negatively worded questions if so, Alpha was negative. It is useful in assessing the consistence of the results across items within a test. It represents number between 0 and 1. According to (J. Ellis & Levy, 2012)scales with coefficient alpha between 0.6 to 0.7 indicate fair reliability and higher are considered adequate to determine reliability.

Table 3. 1: Reliability of Statistics

Variable	Number of items in the scale	Cronbach’s Alpha Result
Performance	5	.985
Feature	3	.803
Perceived quality	4	.995
Satisfaction	2	.975

Source: Field Survey (April, 2022).

From the above table 3.1 evidenced that in this study reliability tested, the alpha value for four variables were measured, tested and number of questions in the instrument identified , finally alpha result was determined the increase confidence that the instrument was yield acceptable

results and it proved that scales with coefficient alpha acceptable for further analysis (J. Ellis & Levy, 2012).

3.7. Data analysis

3.7.1. Descriptive Analysis

All data cleaned and checked for consistency. Then the questionnaires analysed using (SPSS version 20) program. Then, having analysed the data, the Significant part of the result are based on descriptive methods such as frequency, averages, percentages and other measures of central tendency used to summarize and present the data. The process of categorizing and making data meaningful is referring to as data analysis. The manner data analysed, interpreted, and reported depends on the research design utilized. In this study, quantitative methods of data analysis were employed sequentially.

3.7.2. Inferential Analysis

All data is cleaned and checked for consistency. Then the questionnaires were analyzed using a regression model. Then, having analyses the data by regression analysis of product quality and customer satisfaction, the regression analysis was conducted to know by how much the independent variable explains the dependent variable. It is also used to understand how much each independent variable (product quality features) explains the dependent variables' customer satisfaction.

3.8. Ethical Considerations

Research in the social sciences enters into participants' private lives (Berg, 2001). Therefore, researchers should consider three ethical principles that guide the research: permission, honesty, and anonymity (Fetterman, 1989). A letter of cooperation was acquired from Salale University's Department of Management before data collection. This helped the researcher to get into the research sites and to get full cooperation from the concerned bodies. After obtaining consent, the researcher assured the customers that their participation was voluntary and gave them a guarantee that they could withdraw from the study at any time. Confidentiality of information collected was also ensured, and no part of the data was used for any purpose other than this research.

CHAPTER FOUR
RESULTS AND DISCUSSIONS

Introduction

This chapter deals with the presentation, analysis, and interpretation of data gathered from the respondents through questionnaires. It discusses the effect of gypsum product quality on customer satisfaction in some selected towns in the North Shoa Zone, like Sheraro, Hambiso, Fitcha, Gerbe Guracha, Mukaturi, and Fital. In this chapter, results and discussions, the response of key informants, and the major findings are presented.

4.1. Response Rate

The study used primary data obtained through questionnaires. The questionnaires were distributed and collected with the help of enumerators, and from the total of 384 distributed questionnaires, the researcher was able to collect 230 distributed questionnaires. Therefore, the response rate was 60%, which is enough to move my research forward according to (Fincham, 2008). If the response rate was 60%, it was possible to do the research based on its outcome.

Table 4. 1: The response rate on some selected towns in North Shoa Zone

Name of Towns	Number of Respondents in each selected towns	Returned Questionnaires	Rate of response %
Fitcha	110	66	60
Fital	45	27	60
Gerba-Guracha	59	35	59
Hambiso	38	22	58
MukaTuri	76	46	61
Shararo	56	34	61
Total	384	230	60

Source: Field Survey (April, 2022).

4.2. Demographic Characteristics of the Respondents

Here the study gives some relevant information about the characteristics of respondents who were questioned during the data collection period in some selected towns in the North Shoa Zone, because ideas, beliefs, values, and attitudes of the respondents in view of different socio-economic and demographic aspects were consolidated and presented. The following section presents respondents' profiles in terms of gender, age, educational background, number of years of working experience, and marital status about the effect of gypsum product quality on customer

satisfaction in some selected towns in the North Shoa Zone like Shararo, Hambiso, Fitcha, Gerba-Guracha, Mukaturi, and Fital, customers (gypsum painters’) who paint their own and others' buildings and contractures.

Table 4. 2: Demographic profiles of the respondents

		Frequency	Percent
Gender	Male	155	67.4
	Female	75	32.6
	Total	230	100
Age	18-30	116	50.4
	31-45	92	40
	Above 45	22	9.6
	Total	230	100
Educational Background	Not educated	0	0
	Grade 1-8	52	22.6
	Grade 9-12	122	53
	Level	51	22.2
	BA/BSC	5	2.2
	Total	230	100
Marital Status	Single	111	48.3
	Married	119	51.7
	Total	230	100
Experience	below 5 year	55	23.9
	5-10 year	167	72.6
	above 10 year	8	3.5
	Total	230	100

Source: Field Survey (April, 2022).

The demographic characteristics of respondents are analyzed in terms of their gender, age, educational background, marital status, and number of years of gypsum painting experience. The observed socioeconomic characteristics of respondents, which were considered for the study, are presented below:

Gender

The gender breakdown or sex characteristics of respondents show that 67.4% were males while 32.6% were female. It simply reveals that more males than females on the effect of gypsum product quality on customer satisfaction responded to the questionnaires (Table 4. 2).

Age

Table 4.2 reveals that the analysis of the age structure of customers in the sample shows that 50.4% were 18–30 years old, 40% were 31–45 years old, and 9.6% were older than 45 years. This reveals that 50.4% of the respondents were within the working-age group of 18–30 years, and possibly explains the predominance of the effect of gypsum product quality on customer satisfaction in the analysis.

Educational Background

About 0% was Not Educated, 22.6% were Grade 1-8, 53% were Grade 9-12, 22.2% were level and 2.2% were BA/BSC respectively. The distribution reveals that the majority of the respondents (53%) had acquired Grade 9-12 (Table 4.2).

Marital Status

This presupposes that they were generally able to appreciate the need to make use of either or both effects of gypsum product quality on customer satisfaction. The analysis of the marital status of respondents reveals that 51.7% were married and 48.3% were single (See Table 4.2).

Gypsum Painting Experience

Disaggregating the respondents into their number of years of gypsum painting experience indicates that study predominated. Revealed that 72.6% were 5.10 years old, 23.9% were below 5 years old, and 3.5% were above 10 years old, which perhaps suggests an effect of gypsum product quality on customer satisfaction. Table 4.2

4.3. Descriptive Analysis Results

In order to know the general knowledge of the respondents in the study area, different questions were forwarded to them, and the responses of the respondents were briefly summarized in the following table.

Table 4. 3: Gypsum Performance product quality feature

		1		2		3		4		5		Total		Mean	SD
		SD		DA		N		A		SA					
SN	Performance	F	%	F	%	F	%	F	%	F	%	F	%		
1	Gypsum performance meets your expectations	22	9.5	34	14.7	31	13.4	143	62.5			230	100	3.28	1.038
2	Gypsum provides variety of products that you think can meet your satisfaction.	26	11.2	39	16.8	25	10.8	140	60.30			230	100	3.21	1.091
3	Gypsum performs better than other gypsum that is found in the country.	26	11.2	39	16.8	25	10.8	140	60.3			230	100	3.14	1.05
4	Gypsum products makes you feel pleasure	29	12.5	50	21.6	41	17.7	110	47.4			230	100	3.01	1.098
5	Gypsum fulfils the immediate interest of customers	22	9.5	33	14.2	35	15.1	140	60.3			230	100	3.27	1.032
Grand Mean														3.234	

Source: Field Survey (April, 2022).

Table 4.3 shows the majority of the respondents 143 (61.6%) agreed that gypsum product performs to meet the customer expectation, 140(60.3%) of the respondents agreed that gypsum provides variety of products to meet customer satisfaction. 140 (60.3%) of the participants agreed that gypsum performs better than other gypsum that is found in the country. 110(47.4) of the participants agreed that gypsum products makes customer pleasure and 140(60.3) of the participants agreed that gypsum fulfils the immediate interest of customers.

As the above table indicated that the mean value of respondent perception on gypsum provides variety of products that to meet customer satisfaction. is (Mean 3.21, SD 1.091), where it shows margin above the low level, while they answered the question that they believe and moderately satisfied with the gypsum performance meets customer expectations, (Mean 3.28, SD 1.038). However, significantly, lower mean score was registered (Mean 3.01, SD 1.098) for the idea that the performance of gypsum products makes customer pleasure. Despite the fact that the feature depends on the users, the most participants of the study prefer gypsum product quality feature in terms of performance feature.

Table 4. 4: Gypsum Feature product quality feature

		1		2		3		4		5		Total		Mean	SD
		SD		DA		N		A		SA					
S	Feature	F	%	F	%	F	%	F	%	F	%	F	%		
N															
1	Gypsum additional features (rewards and sponsors) are what you need to get satisfied			30	13	40	17	138	60	22	9.6	230	100	3.66	0.824
2	Gypsum additional features are desirable and useful.			30	13			173	75	27	11.7	230	100	3.86	0.788
3	Gypsum product features are more desirable and useful than other competitors.							77	34	153	66.5	230	100	4.07	0.473
Grand Mean														4.063	

Source: Field Survey (April, 2022).

Table 4.4 shows the majority of the respondents 138(60%) agreed that gypsum additional features like sponsors and rewards are what they need to get satisfied and 173 (75%) of the respondents agreed that gypsum additional features are desirable and useful. And 153(66.5%) of the respondents strongly agreed and about 77(33.5%) of the respondents agreed that gypsum additional features are more desirable and useful than other competitors.

From the above table illustration, (Mean 4.07 SD .473), we can see that the participants of the study imply that gypsum product features are more desirable and useful than other competitors. Are revelatory factors which are highly contributed for the satisfaction of the customer? In addition to what has been said, above the average level of mean had scored (Mean 3.86 SD .788) to the belief of gypsum additional features are desirable and useful.

Table 4. 5: Gypsum Product Perceived Quality feature

		1		2	3			4		5		Total		Mean	SD
		SD		D A	N			A		SA					
S N	Perceived Quality	F	%	F	%	F	%	F	%	F	%	F	%		
1	Gypsum has high quality			26	11.3	6	2.6	153	66.5	45	19.6	230	100	3.94	0.821
2	Do you think if money is spent for Gypsum is the best to do so			3	1.3			169	73.5	58	25.2	230	100	4.03	0.504
3	Do you think Gypsum is better quality compared to that of competitors			74	32.2			156	67.8			230	100	3.40	0.936
4	Gypsum maintains its taste throughout			12	5.2			172	74.8	46	20	230	100	4.1	0.633
Grand Mean														3.9075	

Source: Field Survey (April, 2022).

Table 4.5 shows the majority of the respondents 153(66.5%) agreed for the question that Gypsum is high quality product and about 169(73.5%) of the respondents agreed that if the spent money for gypsum product rather for other product. 156(67.8%) of the respondents agreed that Gypsum have better quality compared to that of competitors and about 74(32.2%) of the respondents disagreed that Gypsum have better quality compared to that of competitors and about 172 (74.8%) of the respondents agreed. 46 (20%) of the participants Strongly agreed that Gypsum maintains its taste throughout .

From the above table denotes that higher mean score was registered in the assumption that the researcher attempted to know if the participants of the study are willing to spent money for Gypsum product, they agreed to do so (Mean 4.03 SD .504), similarly higher mean (Mean 4.1SD .633) was also registered which indicated that the participants of the study perceived that product of Gypsum do maintain its taste throughout. The table also displays the higher mean score (Mean 3.94 SD .821), which indicated that the participants of the study perceive that Gypsum has high quality. Moreover, those people who involve in this study also stipulated that they experienced Gypsum is better quality compared to that of competitors (Mean 3.40 SD .936).

Table 4. 6: Description of overall customer satisfaction

		1		2		3		4		5		Total		Mean	SD
		SD		DA		N		A		SA					
SN	Feature	F	%	F	%	F	%	F	%	F	%	F	%		
1	Overall are I am satisfied with the Gypsum product			15	6.5			170	73.9	45	19.6	230	100	4.07	0.674
2	I will continue to use the Gypsum product in the future.			5	2.2			168	73	57	24.8	230	100	4.2	0.542
Grand Mean														4.135	

Source: Field Survey (April, 2022).

Table 4.6 shows the number of the respondents 168(73.91%) agreed that when they requested whether they are satisfied with Gypsum product or not and about 45(19.6%) of the respondents strongly agreed with this question, 168(73%) of the respondents agreed that when they are asking whether they are going to use Gypsum product in the future or not and about 57(24.8%) of the respondents strongly agreed for this question on the issue of using the product for future.

From the above table 4.8 the (Mean 4.07 SD .674) had been registered for the idea that the researcher forwarded to know the overall satisfaction of the participants of the study, the result shows the satisfaction level of the Gypsum product customers and the score is above the average/expected mean score. Additionally, the higher mean score is also displayed in the table (Mean 4.2 SD .542) for the view that weather Gypsum users will use Gypsum product for future or not thus, more than large number of respondents accepted to be customer of the product.

4.4. Inferential Analysis Results

4.4.1. Correlation analysis Results

Bivariate correlations measure the direction and association between two variables. The correlation coefficient, which ranges from +1 to -1, A correlation coefficient of +1 describes a perfect positive relationship in which every change of +1 in one variable is associated with a change of +1 in the other variable. A correlation of -1 describes a perfect negative relationship in which every change of -1 in one variable is associated with a change of -1 in the other variable. A correlation of 0 describes a situation in which a change in one variable is not associated with any particular change in the other variable.

Table 4. 7: Correlation Analysis

Correlations				
	Performance	Feature	Perceived quality	Satisfaction
Performance	1			
Feature	.889 ^{**}	1		
Perceived quality	-0.048	-.274 ^{**}	1	
Satisfaction	0.067	-.141 [*]	.338 ^{**}	1
**. Correlation is significant at the 0.01 level (2-tailed).				
*. Correlation is significant at the 0.05 level (2-tailed).				

Source: Field Survey (April, 2022).

The Pearson correlation coefficient was used to assess the relationship among variables (independent and dependent variables). As can be seen from Table 4.7, the relationship formed the highest Pearson correlation analysis with ($r = 0.889$), indicating that the relationship has a positive and high correlation with a marked relationship toward customer satisfaction. Perceived quality ($r = .338$) is also interpreted to have a positive and significant relationship with customer satisfaction. Other than that, the result also indicated that features have a negative and low correlation with a marked relationship with customer satisfaction with a value of $r = -.141$ and that performance ($r = 0.067$) has a positive and high correlation with customer satisfaction. This implies that all the variables have a positive high relationship with each other, except for the gypsum feature.

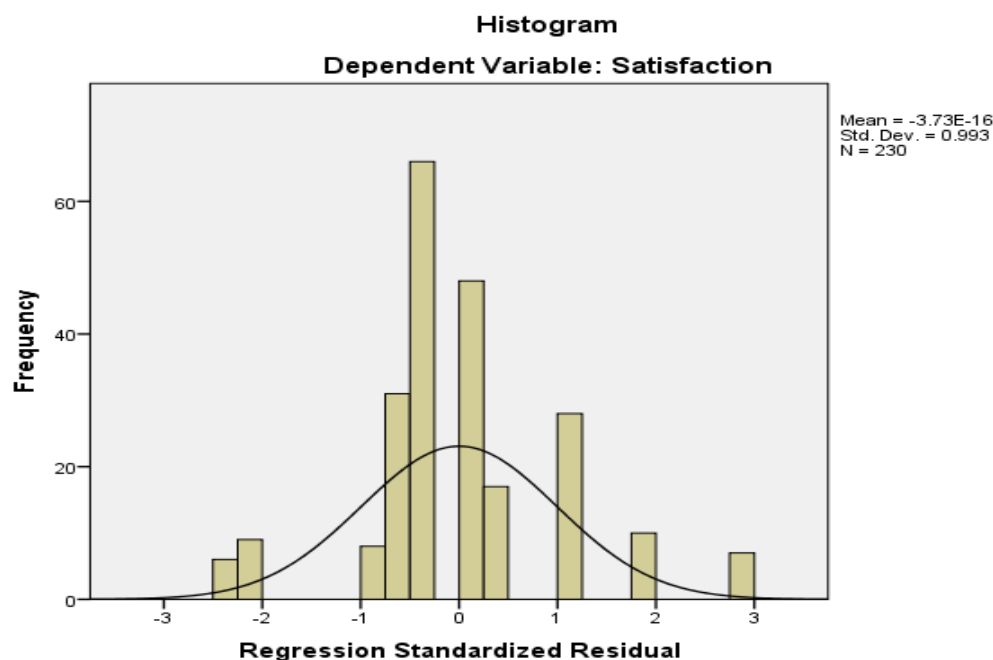
4.4.2. Regression analysis Results

4.4.2.1. Regression analysis Assumptions Test

A. Normality test

The normality assumption must be fulfilled in order to conduct a hypothesis test about the model parameter. The normality assumption is that the mean of the residuals is zero (normality of the error distribution). In this study, the normality of the data was checked as shown in fig.4.1. The histogram is bell-shaped, which suggests that the residuals are normally distributed. That is, the residual mean is zero and the standard deviation is close to zero. As a result, there are no violations of the assumption that error terms are normally distributed.

Figure 4. 1: Normality Test

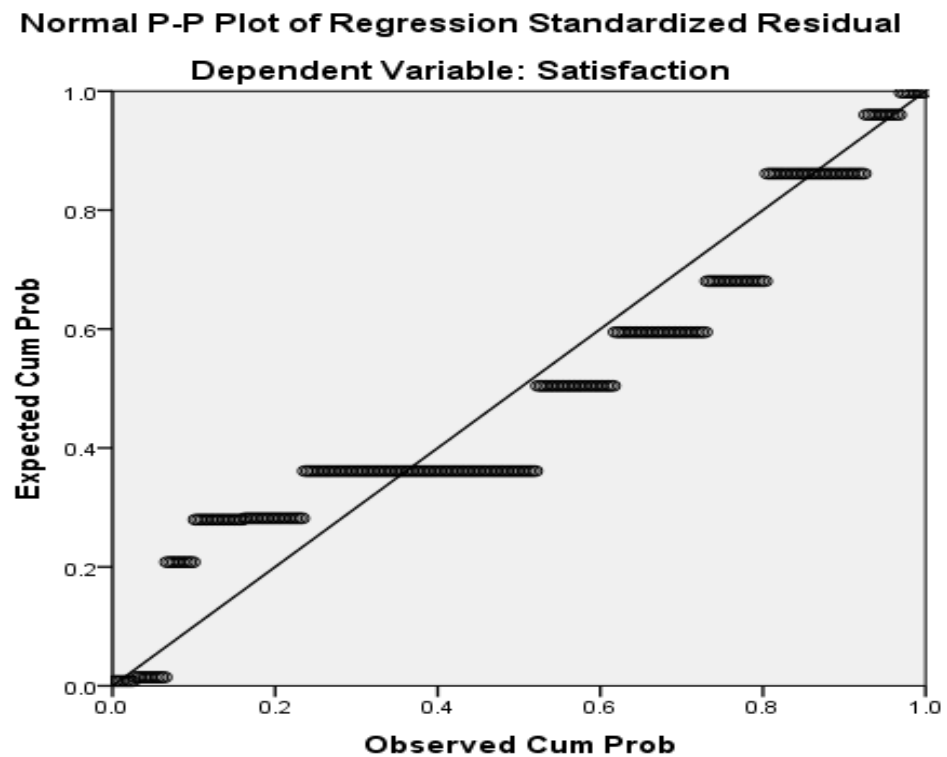


Source: Field Survey (April, 2022).

B. Linearity test

Linearity is the assumption which explains the use of linear regression models for the purpose of prediction. It shows the degree to which the change in the dependent variable is related to the change in the independent variables. The linearity of the relationship between dependent and independent variables is most evident in a plot of residual versus predicted values of the standard regression output. Figure 4.2 depicts a plot of the study's standard regression output, indicating the linearity of the relationship between customer satisfaction (dependent variable) and performance, feature, and perceived quality (independent variables).The painted graph here under describes that the relationship is linear. Hence, the normality assumption is satisfied as essential and it is possible to conclude that the inferences the researcher will make about the population parameter from the sample are valid.

Figure 4. 2: Linearity Test



Source: Field Survey (April, 2022)

4.6.2 Effect of Gypsum Product performance on customer’s satisfaction.

Table 4. 8: Classification Table^{a,b}

	Observed		Predicted		
step			customer satisfaction		percentage correct
			yes	no	
step 0	customer satisfaction	yes	193	0	100.0
		no	37	0	.0
	overall percentage				83.9
a. constant is included in the model.					
b. The cut value is .500					

Source: Field Survey (April, 2022).

The percentage correct associated with row 1 was referred to as specificity, as it reflects the accuracy of the model in incorrectly classifying individuals into group yes (the target group; here to satisfy customers). The percentage correct associated with row 2 was referred to as sensitivity, as it reflects the accuracy of the model in incorrectly classifying individuals into group 1 (the non-target group; i.e., none satisfied). Although the model's overall classification accuracy was

83.9%, it was clear that the model does a much better job of predicting those who are dissatisfied with gypsum product use.

Table 4. 9: Omnibus Tests of Model Coefficients

		Chi-square	Df	Sig.
step 1	Step	152.443	5	.000
	Block	152.443	5	.000
	Model	152.443	5	.000

Source: Field Survey (April, 2022).

From these Omnibus tests, if the model was statistically significant ($p<0.05$), then I could say that model had a good fitting in the data.

Table 4. 10: Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	50.467 ^a	.485	.827
a. Estimation terminated at iteration number 20 because maximum iterations have been reached. Final solution cannot be found.			

Source: Field Survey (April, 2022).

From the Model summary, we could say from Cox and Snell R Square and Nagelkerk R Square that the explained variation in the dependent variable for this model ranges from 48.5% to 82.7%.

Table 4. 11: Hosmer and Lemeshow Test

Step	Chi-square	Df	Sig.
1	.031	5	1.000

Source: Field Survey (April, 2022).

From this Hosmer and Lemeshow tests, if the model was not statistically significant ($p>0.05$), then I could say that model had a good fitting in the data.

Table 4. 12: Variables in the Equation

		B	S.E.	Wald	Df	Sig.	Exp(B)	95% C.I. for EXP(B)	
								Lower	Upper
step 1 ^a	P1	- 22.801	19672.891	.000	1	.999	.000	.000	.
	P2	37.625	3692.742	.000	1	.992	.000	.000	.
	P3	- 16.895	2593.648	.000	1	.995	.000	.000	.
	P4	- 17.168	2628.575	.000	1	.995	.000	.000	.
	P5	20.284	19672.891	.000	1	.999	.198	.000	.
	Constant	- 39.613	3692.742	.000	1	.991	.000		
a. Variable(s) entered on step 1: P1, P2, P3, P4, P5.									

Source: Field Survey (April, 2022).

Econometric Analysis

An econometric (Binary logistic regression) model was used to determine the factors influencing customer satisfaction with gypsum quality product were displayed on Table 4.12. Five explanatory variables were included in the model for analysis.

Determinants of customer satisfaction with gypsum Quality product

Gypsum meets your expectations (p1), Gypsum provides a variety of products that you believe can meet your expectations (p2), Gypsum performs better than other gypsum found in the country (p3), Gypsum products give you pleasure (p4), and Gypsum fulfills the immediate interests of customers (p5). Customer satisfaction and gypsum quality product use decreased the log odds of being satisfied or dissatisfied by .000. Gypsum provides a variety of products that you think can meet your expectations. Gypsum performs better than other gypsum that is found in the country. P3; Gypsum products make you feel pleasure. P4; and Gypsum fulfills the immediate interests of customers. P5 were not supported product quality features.

Table 4. 13: Multicollinearity Test

Coefficients ^a			
Model		Collinearity Statistics	
		Tolerance	VIF
1	Gypsum performs meet your expectations of respondent	.015	67.175
	Gypsum provides variety of products that you think can meet your satisfaction of respondent	.134	7.473
	Gypsum performs better than other Gypsum that is found in the country of respondent	.059	16.946
	Gypsum products makes you feel pleasure of respondent	.089	11.249
	Gypsum fulfills the immediate interest of customers of respondent	.015	66.785
a. Dependent Variable: Customer Satisfaction			

Source: Field Survey (April, 2022).

From the above multicollinearity test table, 4.13 concludes that there was no a strong correlation between a dependent variable and the independent one.

4.6.3. The role of Gypsum Product feature in customer's satisfaction.

Table 4. 14: Classification and Result of Gypsum Customer's Satisfaction

Classification Table ^{a,b}					
	Observed		Predicted		
			Customer Satisfaction		Percentage Correct
			yes	no	
Step 0	customer satisfaction	Yes	193	0	100.0
		no	37	0	.0
	overall percentage				83.9
a. constant is included in the model.					
b. The cut value is .500					

Source: Field Survey (April, 2022).

The percentage correct associated with row 1 was referred to as specificity, as it reflects the accuracy of the model in incorrectly classifying individuals into group yes (the target group; here to satisfy customers). The percentage correct associated with row 2 was referred to as sensitivity, as it reflects the accuracy of the model in incorrectly classifying individuals into group 1 (the non-target group; i.e., none satisfied). Although the model's overall classification accuracy was 83.9%, it was clear that the model does a much better job of predicting those who are dissatisfied with gypsum product use.

Table 4. 15: Omnibus Tests of Model Coefficients

		Chi-square	Df	Sig.
Step 1	Step	62.503	3	.000
	Block	62.503	3	.000
	Model	62.503	3	.000

Source: Field Survey (April, 2022).

From these Omnibus tests, if the model was statistically significant ($p<0.05$), then I could say that model had a good fitting in the data.

Table 4. 16: Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	140.407 ^a	.238	.406
a. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.			

Source: Field Survey (April, 2022).

From the Model Summary, we could say from Cox and Snell R Square and Nagelkerk R Square that the explained variation in the dependent variable for this model ranges from 23.8% to 40.6%.

Table 4. 17: Hosmer and Lemeshow Test

Step	Chi-square	Df	Sig.
1	14.920	3	.002

Source: Field Survey (April, 2022).

From this Hosmer and Lemeshow tests, if the model was not statistically significant ($p>0.05$), then I could say that model had a good fitting in the data.

Table 4. 18: Variables in the Equation

		B	S.E.	Wald	Df	Sig.	Exp(B)	95% C.I. for EXP(B)	
								Lower	Upper
Step 1 ^a	F1	2.916	.724	16.223	1	.000	.473	4.469	76.357
	F2	1.162	.397	8.570	1	.003	.197	1.468	6.961
	F3	-5.828	1.010	33.268	1	.000	.003	.000	.021
	Constant	9.815	2.429	16.322	1	.000	.092		
a. Variable(s) entered on step 1: F1, F2, F3.									

Source: Field Survey (April, 2022).

Gypsum additional features (rewards and sponsors) are what you need to get satisfied of respondents/F1:- Found to be positive and significant at 95% significance Level, indicate that each additional of Gypsum additional feature increases the log odds of customer satisfaction or not satisfy by .473

Gypsum additional features are desirable and useful to respondents. F2: Gypsum additional features are desirable and useful. The log odds of being satisfied or dissatisfied with gypsum products were increased by197. It shows that Gypsum's additional features are desirable and useful to satisfy customer satisfaction. And

Gypsum product features are more desirable and useful than other competitors of respondents/F3: Gypsum product features are more desirable and useful than other competitors' had a positive and significant at 95% significance level, indicating that use of gypsum products the log odds of satisfaction or not satisfying of using gypsum products were increased by 003.showed that gypsum product features are more desirable and useful than other competitors.

Table 4. 19: Coefficients^a

Model		Collinearity Statistics	
		Tolerance	VIF
1	Gypsum additional features (rewards and sponsors) are what you need to get satisfied of respondent	.244	4.099
	Gypsum additional features are desirable and useful of respondent	.762	1.312
	Gypsum product features are more desirable and useful than other competitors of respondent	.278	3.595
a. Dependent Variable: Customer Satisfaction			

Source: Field Survey (April, 2022).

From the above multicollinearity test table, 4.19 concludes that there was no a strong correlation between a dependent variable and the independent one.

4.6.4. Role of Gypsum Product perceive quality in customer’s satisfaction

Table 4. 20: Classification Table^{a,b}

	Observed		Predicted		
			Customer Satisfaction		Percentage Correct
			Yes	No	
Step 0	Customer Satisfaction	Yes	193	0	100.0
		No	37	0	.0
	Overall Percentage				83.9
a. Constant is included in the model.					
b. The cut value is .500					

Source: Field Survey (April, 2022).

The percentage correct associated with row 1 was referred to as specificity, as it reflects the accuracy of the model in incorrectly classifying individuals into group yes (the target group; here to satisfy customers). The percentage correct associated with row 2 was referred to as sensitivity, as it reflects the accuracy of the model in incorrectly classifying individuals into group 1 (the non-target group; i.e., none satisfied). Although the model's overall classification accuracy was 83.9%, it was clear that the model does a much better job of predicting those who are dissatisfied with gypsum product use. Table 4. 21:

Omnibus Tests of Model Coefficients

		Chi-square	Df	Sig.
Step 1	Step	14.180	4	.007
	Block	14.180	4	.007
	Model	14.180	4	.007

Source: Field Survey (April, 2022).

From these Omnibus tests, if the model was statistically significant ($p < 0.05$), then I could say that model had a good fitting in the data.

Table 4. 22: Model Summary the Study

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	188.730 ^a	.060	.102
a. Estimation terminated at iteration number 20 because maximum iterations have been reached. Final solution cannot be found.			

Source: Field Survey (April, 2022).

From the Model Summary, we could say from Cox and Snell R Square and Nagelkerk R Square that the explained variation in the dependent variable for this model ranges from 6% to 10.2%.

Table 4. 23: Hosmer and Lemeshow Test

Step	Chi-square	Df	Sig.
1	9.886	4	.042

Source: Field Survey (April, 2022).

From this Hosmer and Lemeshow tests, if the model was statistically significant ($p<0.05$), then I could say that model had a good fitting in the data.

Table 4. 24: Variables in the Equation

		B	S.E.	Wald	Df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1 ^a	PQ1	-.013	.302	.002	1	.965	.987	.545	1.785
	PQ2	-17.365	5681.770	.000	1	.998	.000	.000	.
	PQ3	-.355	.190	3.493	1	.062	.701	.483	1.017
	PQ4	16.338	5681.770	.000	1	.998	.851	.000	.
	Constant	3.862	2.185	3.126	1	.077	.581		
a. Variable(s) entered on step 1: PQ1, PQ2, PQ3, PQ4.									

Source: Field Survey (April, 2022).

Gypsum has high quality of respondent/PQ1:- Found to be positive and significant at 95% in significance Level, indicate that each additional of Gypsum has high quality increases the log odds of customer satisfaction or not satisfy by .987

Do you believe that spending money on gypsum is the best thing to do for respondents? Do you believe that spending money on gypsum is the best way to have a positive and significant 95% significance level, indicating that using gypsum products increases the log odds of satisfaction or dissatisfaction? Do you think if money were spent on gypsum, the best thing to do would increase by.000? Do you think if money is spent on gypsum, it is not the best thing to do to satisfy customer satisfaction? .andDo you think gypsum is better quality compared to that of competitors' respondent/PQ3: -- Do you think gypsum is better quality than competitors had a positive and significant at 95% significance level, indicating that do you think gypsum is better quality than competitors, the log odds of satisfaction or dissatisfaction with gypsum products were increased by.701.Do you think gypsum is not better quality compared to that of competitors? Gypsum maintains its taste throughout of respondent/PQ4:- found to be positive and insignificant at 95% significance Level, indicate that each additional of gypsum maintains its taste throughout increases the log odds of adopted or not satisfaction or not satisfy of using gypsum product by .851

Table 4. 25: Coefficients^a Result

Model		Collinearity Statistics	
		Tolerance	VIF
1	Gypsum additional features (rewards and sponsors) are what you need to get satisfied of respondent	.244	4.099
	Gypsum additional features are desirable and useful of respondent	.762	1.312
	Gypsum product features are more desirable and useful than other competitors of respondent	.278	3.595
a. Dependent Variable: Customer Satisfaction			

Source: Field Survey (April, 2022).

From the above multicollinearity test table, 4.25 concludes that there was no a strong correlation between a dependent variable and the independent one.

CHAPTER FIVE

CONCLUSIONS AND RECOMMENDATIONS

INTRODUCTION

Summary of the study

This research aimed to identify the effect of product quality on customer satisfaction with the focus study area of gypsum products.

- The study initially intended to know the performance of gypsum products through providing Binary Logistic regression analysis that shows product performance has an insignificant and indirect influence on customer satisfaction.
- The findings of the questionnaires also revealed that high number of respondents replied that additional features provided by Gypsum has important role for their satisfaction.
- The descriptive statistical part of the research displays that the internal consistence reliability proved that the coefficient alpha of every independent variables is high.
- The regression model of the research demonstrated that those three independent variables of product quality feature indicated in R square is .909, where it means 90.9%variation on dependent variable, i.e. customer satisfaction.
- All independent variables (such as performance, features, and perceived quality) are statistically insignificant for customer satisfaction.

5.1. Conclusions

Product quality is a necessary factor for producers to have the satisfaction of their customers. The performance feature has a high mean value and is a significant element of product quality. This feature has the highest mean value and is an important product quality feature. From this, we can conclude that the product of gypsum has no problem in inculcating additional features like rewards, which are desirable and essential to compete with competitors. The findings of the research indicated that all product quality features have a strong and positive relationship with customer satisfaction.

5.2. Recommendations

Based on the major findings of the study, the following recommendations are suggested for gypsum product Company.

- Gypsum product Share Company should continue and upgrade what they are doing in adding such inspiring, motivational and desirable features in gypsum products so as to increase the satisfaction of the customers.
- The gypsum company has to work with the interest and the perceived value of the customer to deliver quality Gypsum Product. This enables the organization to be profitable and satisfy its customer.
- Gypsum product Share Company, the top-level managers need to take to fix the problems identified in this study.
- In addition to this, further research should be done on the relationship between product quality features and customer satisfaction in gypsum product companies.

5.3.2. Recommendations for Policy Makers

Further, making some timely-modifications to existing gypsum quality product policies are also vital, such as flexible policies, flexible rates for all services, ensuring strict quality policies should be some of the key areas of concerns.

- It is recommended to promote flexi-services instead of promoting value-added services.
- Companies need to plans in place to quickly recover the worst of the market inflations.
- Travel agents and other service providers should be continuously kept in touch with key customer base during the shortage.
- If the inflations persist, the government should allocate extra budget for this sector.
- It is recommended to initiate collaborative strategies among the public and private sector. For both micro and macro level business owners could think of introducing interest free capital loan schemes.

5.3.3. Implication for further research

This research paves the way for future researchers who want to investigate similar areas. It can be used as a guide to do more research on this phenomenon. This paper used product quality features that are related to the study, but one can focus on using one feature and can explore more about what it is intended to study. Since this research focuses on performance, features, and perceived quality, other researchers' conduct on other product quality measure variables is advisable

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APPENDICS
APPENDICS I:-QUSTIONARY
Salale University
College of Business and Economics
Department of Management
MBA

Dear Respondent

I am a graduate student at Salale University, studying for the degree of Masters of Business Administration (MBA). The questionnaire would be completed by the customer who owns the paint from gypsum Painters and other buildings (contracts and subcontracts) in the Oromia Region; North Shoa Zone. The purpose of this questionnaire was to collect primary data for conducting a study on the impact of the quality of gypsum products on customer satisfaction. The information respondents provide would be kept confidential according to the principle of confidentiality. Your participation was very important for the success of this study and I appreciate your help.

Thank you in advance for your cooperation

Yours sincerely

Dereje Muleta phone Number: 0911354766 Fitcha Ethiopia

- N.B: no need to write your name
- Put (✓) inside the box or table for an alternative you think was right.

Part I: Demographic information

Please fill in appropriate answer to the questions below

1. Gender - male ☐ - Female ☐
2. Age -18-30 ☐ 31-45 year ☐ above 45 years ☐
3. Educational Background - Not Educated ☐ Grade 1-8 ☐ Grade 9-12 ☐
4. Degree ☐ above Degree ☐
5. Marital Status - Single ☐ Married ☐
6. Number of years of Gypsum Painting (Experience): Below 5 year ☐ -10 year ☐
above 10 year ☐

Part II: Survey of product quality on customer satisfaction

This survey deals with your opinion about product quality on customer satisfaction. Based on this please put a tick (✓) in the space provide which mostly explain your attitudes. The score levels were described as:

1. Strongly Disagree 2.Disagree 3.Neutral 4.Agree 5.Strongly Agree

Product Quality Features	Response				
I. Gypsum Product Performance	1	2	3	4	5
1. Gypsum performance meets your expectations					
2. Gypsum provides variety of products that you think can meet your satisfaction.					
3. Gypsum performs better than other gypsum that is found in the country.					
4. Gypsum products makes you feel pleasure					
5. Gypsum fulfills the immediate interest of customers					
II. Gypsum Product Feature	1	2	3	4	5
6. Gypsum additional features (rewards and sponsors) are what you need to get satisfied					
7. Gypsum additional features are desirable and useful					
8. Gypsum product features are more desirable and useful than other competitors.					
III. Gypsum Product Perceived Quality	1	2	3	4	5
9. Gypsum has high quality?					
10. Do you think if money is spent for Gypsum is the best to do so?					
11. Do you think Gypsum is better quality compared to that of competitors?					
12. Gypsum maintains its taste throughout?					
13. After using Gypsum do you think it have hangover in the morning?					
IV. Satisfaction	1	2	3	4	5
14. Overall are I am satisfied with the Gypsum product					
15. I will continue to use the Gypsum product in the future					

APPENDICS- 2

Translated Language

መጠይቅ

ሰላሌ ዩኒቨርሲቲ፣ ቢስነስ እና እኮኖሚክስ ኮሌጅ

በእትዮድያ ኦሮሚያ ክልል ሰሜን ሸዋ ዞን የጅግሰም ምርት ጥራት የድንበኞች እርካታ ጥናት ላይ ለመሳተፍ ፍቃደኛ በመሆንዎ እጅግ አድርጌ አመሰግናለው። የጥናቱ አላማ በቢስነስ ማኔጅመንት የሁለተኛ ዲግሪ ማሟያ የመመረቂያ ጽሁፍ ለማዘጋጀት ነው። በመሆኑም ጥናቴን በአጭር ጊዜ አጠናቅቅ ዘንድ የእርስዎን ፈጣን ምላሽ እጠብቃለው።

ለመልካም ትብብርዎ እና ፈጣን ምላሽዎ እጅግ አድርጌን እናመሰግናለን!

መመሪያ :- ስምዎትን መጻፍ አይጠበቅብዎትም

ክፍል አንድ: አጠቃላይ መረጃ

1. ጾታ - ወንድ ሴት

2. ዕድሜ - 14-22 23-28 29-39 40 -49 ከ50 በላይ

3. የትዳር ሁኔታ:- ያላገባ/ች ያገባ/ች

4. የትምህር ደረጃ:- ያልተማረ/ች ከ1-8 ከ9-12 ዲፕሎማ/ደረጃ/
ዲግሪ ከዲግሪ በላይ

ክፍል ሁለት : የጥነት ጥያቄዎች

የምርቱ ጥራት ከደንበኞች እርካታ ጋር በተያያዘ ከዚህ በታች በተዘረዘሩት ዓረፍተ ነገሮች ላይ ስምምነትዎን ወይም አለመስማማትዎን ‘√’ ምልክት በማድረግ ይግለጹ። የመለኪያ መጠኑም እንደሚከተለው ይሆናል 1 = በጣም አልስማማም ፣ 2 = አልስማማም ፣ 3 = ገለልተኛ ሃሳብ ፣ 4 = እስማማለሁ እና 5 = በጣም እስማማለሁ

የምርት ጥራት	መልስ				
I. ብቃት	1	2	3	4	5
1. ጂፕሰም ብቃት እርስዎ የሚጠብቁትን (ፈሳሽዎን) ያሟሳል።					
2. የጂፕሰም ምርት እርካታን ሲያሟሳ ይችላል ብለዉ የሚያስቡትን የተለያዩ ምርቶችን ያቀርባል።					
3. የጂፕሰም ምርት በአገሪቱ ውስጥ ከሚገኙት ሌሎች ጂፕሰም በተሻለ ሁኔታ ይሠራል።					
4. የጂፕሰም ምርት ደስታን ያመጣልዎታል።					
5. የጂፕሰም ምርት የደንበኞችን ፈጣን ፍላጎት ያሟሳል።					
II. ደዘት	1	2	3	4	5
6. ጂፕሰም ተጨማሪ በህረዎት እርካታ ለማግኘት የሚያስፈልገዎት ነገሮች ነቸዉ።					
7. የጂፕሰም ተጨማሪ በህረዎት ተፈሳጊ እና ጠቃሚ ነቸዉ።					
8. የጂፕሰም ምርት በህረዎት ከሌሎች ተወዳዳሪዎች የበለጠ ተፈሳጊ እና ጥቅም ላይ ይዉላሉ።					
III. ያገኙት ጥራት	1	2	3	4	5
9. ጂፕሰም ከፍተኛ ጥራት አለዉ?					
10. ገንዘብ ለጂፕሰም የሚዉል ከሆኔ ይህን ለማድረግ የተሻለዉ ይመስልዎታል?					
11. ጂፕሰም ከተወዳዳሪዎች ጋር ሲወዳደር የተሻለ ጥራት ያለዉ ይመስልዎታል።					
12. የጂፕሰም ጥራት እርሶዎን መመዘኛዎች ያመሟሳል					
IV. እርካታ	1	2	3	4	5
13. በአጠቃላይ በጂፕሰም ምርት ረክተዋል።					
14. ወደፊት የጂፕሰም ምርት ልትጠቀም ነዉ?					
15. የጂፕሰም ምርት የደንበኞችን ፍላጎት ለማሟላት የምርት ዓይነት ነተላዎሮ መልኩ ይቀርባል					

እናመሰግናለን

