



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

**INFLUENCE OF ISO 9001:2015 QMS ON CUSTOMER  
SATISFACTION: THE CASE OF ETHIOPIAN TEXTILE  
INDUSTRY DEVELOPMENT INSTITUTE**

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*Addis Ababa, Ethiopia*

*July, 2021*

**INFLUENCE OF ISO 9001:2015 QMS ON CUSTOMER  
SATISFACTION: THE CASE OF ETHIOPIAN TEXTILE  
INDUSTRY DEVELOPMENT INSTITUTE**

*A Thesis Submitted to St Mary's University, School of Graduate Studies,  
Institute of Quality and Productivity Management  
In partial fulfillment of the requirements for Degree of Masters in*

**QUALITY AND PRODUCTIVITY MANAGEMENT**

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*July, 2021*

**ST. MARY’S UNIVERSITY**  
**SCHOOL OF GRADUATE STUDIES OF INSTITUTE OF**  
**QUALITY AND PRODUCTIVITY MANAGEMENT**

This is to certify that the research work prepared by **Genet Assefa Dibaba**, titled, “**Influenc of ISO 9001:2015 QMS on Customer Satisfaction: The case of Ethiopian Textile Industry Development Institute**” has been submitted in partial fulfillments of the requirements for the degree of Master of Quality and Productivity management complies with the regulations of the university and meets the accepted standards with respect to originality and quality.

**Approved by Board of Examiners**

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External Examiner	.....	.....	.....
Internal Examiner	.....	.....	.....

## **DEDICATION**

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This dissertation is dedicated to my beloved husband YONATHAN TESHAYE for his extraordinary support and encouragement and our dearest son YEAB.

## DECLARATION

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This is to declare that this research study titled “**INFLUENCE OF ISO 9001:2015 QMS ON CUSTOMER SATISFACTION: THE CASE OF ETHIOPIAN TEXTILE INDUSTRY DEVELOPMENT INSTITUTE**” is based on my [**Genet Assefa Dibaba, SGS/0412/2012A**] original research work conducted under the guidance of **Dr. Ameha Mulugeta** towards partial fulfillment of the requirement for the award of the Degree of Master of Productivity and Quality Management of St Mary’s University, Addis Ababa.

I further confirm that the thesis has not been submitted either in part or in full to any other higher learning institution for the purpose of earning any degree. No part of this work has been copied from any other source. Material, wherever borrowed has been duly acknowledged.

**Signature**

**Date**

*Genet Assefa Dibaba*

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

**Signature**

**Date**

**Ameha Mulugeta (Dr.)**

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.....

# ENDORSEMENT

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This Research work has been submitted to St. Mary's University, School of Graduate Studies for examination with my approval as a university advisor.

**Signature**

**Date**

**Ameha Mulugeta (Dr.)**

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# TABLE OF CONTENTS

<b>TABLE OF CONTENTS</b> .....	<b>i</b>
<b>ACKNOWLEDGEMENT</b> .....	<b>iv</b>
<b>LIST OF TABLES</b> .....	<b>v</b>
<b>LIST OF FIGURES</b> .....	<b>vi</b>
<b>ABSTRACT</b> .....	<b>vii</b>
<b>1. INTRODUCTION</b> .....	<b>1</b>
1.1 ISO 9001:2015 QMS in relation to service quality and customer satisfaction .....	1
1.2 Background of the Study .....	2
1.3 Statement of the Problem.....	3
1.4 Research Questions .....	4
1.5 Research Objectives.....	5
1.6 Scope of the Study .....	5
1.7 Significance of the Study .....	5
1.8 Research Organization .....	5
<b>2. REVIEW OF RELATED LITERATURE</b> .....	<b>7</b>
2.1 Introduction.....	7
2.2 The Service Sector .....	7
2.3 Customers' Expectations Compared to Perceptions .....	7
2.4 Service Quality.....	8
2.5 Customers' Satisfaction .....	9
2.6 Measurement of Service Quality.....	9
2.6.1 Gronroos Model .....	9
2.6.2 GAP model.....	10
2.6.3 The SERVQUAL Model.....	12
2.6.4 SERVPERF Model .....	16
2.6.5 Hierarchical model.....	16
2.7 Principles of Quality Management .....	18
2.8 ISO 9001:2015 Quality Management System.....	18
2.9 The Impact of ISO 9001 Effectiveness on Service organizations.....	19
2.10 Conceptual framework of the Study .....	21

<b>3. RESEARCH DESIGN AND METHODOLOGY .....</b>	<b>23</b>
3.1 Introduction.....	23
3.2 Research Design.....	23
3.3 Data collection method and tools.....	23
3.3.1 Primary Data .....	23
3.3.2 Secondary Data .....	25
3.4 Population and sample size.....	25
3.5 Method of Data analysis .....	27
<b>4. RESULTS AND DISCUSSION .....</b>	<b>29</b>
4.1 Introduction.....	29
4.2 Satisfaction level on the current situation of the ISO 9001:2015 QMS ETIDI .....	29
4.2.1 Customer Focus .....	29
4.2.2 Leadership.....	30
4.2.3 Engagement of people.....	31
4.2.4 Process Approach.....	32
4.2.5 Continual Improvement .....	33
4.2.6 Evidence based decision making .....	34
4.2.7 Relationship management.....	35
4.2.8 Descriptive Statistics on the conditions of the principles of ISO9001:2015 in ETIDI .....	37
4.3 Service quality and customer satisfaction in ETIDI .....	44
4.3.1 Service quality gap in Tangibles Aspects .....	44
4.3.2 Service quality gap in Reliability Aspects .....	45
4.3.3 Service quality gap in Responsiveness Aspects.....	45
4.3.4 Service quality gap in Empathy Aspects.....	46
4.3.5 Service quality gap in Assurance Aspects .....	47
4.3.6 Descriptive Statistics on Service quality of ETIDI .....	49
4.4 Integration of Results Obtained .....	52
4.5 Pearson’s Correlation Analysis.....	53
4.6 Regression Analysis.....	55
4.7 Summary of Findings.....	56
<b>5. CONCLUSIONS AND RECOMMENDATIONS.....</b>	<b>57</b>
5.1 Introduction.....	57
5.2 Conclusion .....	57
5.3 Recommendations.....	58



5.4 Suggestions for Future Research.....	58
<b>REFERENCES.....</b>	<b>60</b>
<b>APPENDIX A – ETIDI EMPLOYEE QUESTIONNAIRE.....</b>	<b>63</b>
<b>APPENDIX B – ETIDI CUSTOMERS QUESTIONNAIRE .....</b>	<b>69</b>
<b>APPENDIX C – ETIDI CUSTOMERS SATISFACTION SURVEY RESULT OF 2017 AND 2020.....</b>	<b>74</b>
<b>APPENDIX D – ETIDI CUSTOMERS SATISFACTION SURVEY QUESTIONNAIRE.....</b>	<b>76</b>

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## LIST OF TABLES

Table 1: Population and sample size of respondents .....	27
Table 2: Level of Satisfaction in Customer Focus.....	30
Table 3: Level of Satisfaction in Leadership .....	31
Table 4: Level of Satisfaction in Engagement of People.....	32
Table 5: Level of Satisfaction in Process Approach.....	33
Table 6: Level of Satisfaction in Continual Improvement .....	34
Table 7: Level of Satisfaction in Evidence based Decision Making .....	35
Table 8: Satisfaction Level in Relationship Management .....	36
Table 9 (a): Descriptive Statistics on ISO9001:2015 QMS Principles.....	37
Table 9 (b): Descriptive Statistics on ISO9001:2015 QMS Principles .....	40
Table 10: Service Gap in Tangible service quality dimension .....	45
Table 11: Service Gap in Reliability service quality dimension .....	45
Table 12: Service Gap in responsiveness service quality dimension .....	46
Table 13: Service gap in Empathy service quality dimension.....	46
Table 14: Service Gap in Assurance service quality dimension.....	47
Table 15: Ranked average service Gap score .....	48
Table 16 (a): Descriptive Statistics on Service Quality of ETIDI .....	50
Table 16 (b): descriptive statistics on service quality of ETIDI.....	52
Table 17 (a): Pearson's correlation for service quality and customer satisfaction.....	53
Table 17 (b): Pearson's correlation for ISO9001 QMS principles and customer satisfaction .....	54
Table 18: Regression model for service quality dimensions and ISO9001QMS principles .....	55
Table 19: Questionnaire for ETIDI Employees .....	65
Table 20: Questionnaire for ETIDI Customers Expectations .....	70
Table 21: Questionnaire for ETIDI Customers Perceptions .....	72

## LIST OF FIGURES

Figure 1: The Gronroos Model .....	10
Figure 2: The GAP Model .....	12
Figure 3: The SERVQUAL Model .....	14
Figure 4: The Hierarchical Model .....	17
Figure 5: Conceptual frame work of the Study.....	22
Figure 6: Satisfaction on the major ISO9001:2015 QMS principles.....	36
Figure 7: Highest vs. Lowest satisfaction rates on QMS Principles.....	41

## ABSTRACT

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This research work tried to address the extent to which ISO 9001:2015 have an influence on service quality and customer satisfaction on Ethiopian Textile Industry Development Institute (ETIDI). The researcher carried out mixed methods research that included the qualitative and quantitative research methods. The primary and secondary data were collected through questionnaire, interview and revision of literatures on similar area of study. Out of the total population, 209 respondents were selected as sample of the study and completed questionnaire was collected from 144 of them. The collected data were then analyzed by using IBM SPSS (Statistical Packages for Social Science) Statistics Version 23 and the results were presented by tabulations and figures.

The result on the existing condition of implementation of the ISO 9001 principles in ETIDI showed that the satisfaction levels of the respondents lay significantly at a medium. The level of customers' satisfaction result on service quality of ETIDI which was evaluated using SERVQUAL model revealed that customers' expectation is more than what they perceive in all the service quality dimensions though the difference is not as such significant. SPSS regression analysis was made to determine the extent of influence which ISO9001 has on customer satisfaction and showed a result of 82.8%.

Consequently, it was concluded that ISO9001 QMS have statistically significant influence on customer satisfaction and customers' in general are dissatisfied with the service quality of ETIDI.

***Key words: ISO9001:2015QMS, Service Quality, SERVQUAL, Customer Satisfaction, ETIDI***

# CHAPTER - 1

## INTRODUCTION

---

### **1.1 ISO 9001:2015 QMS in relation to service quality and customer satisfaction**

Service quality is generally defined as the overall assessment of a service by the customers or the extent to which a service meets customer's needs or expectations (Lukong & Chingang, 2010). Asubonteng in his Journal about service quality referred to service quality as the discrepancy between consumers' perceptions of services offered by a particular firm and their expectations about firms offering such services is the measure of the Service quality of the service giving firm by the customer. If what is perceived is below expectation, consumer judges quality as low and if what is perceived is meets or exceeds expectation then consumer sees quality to be high. (Asubonteng, 1996).

Various Authors associate service quality with not only customer satisfaction but also with competitiveness. Service quality is considered a critical determinant of competitiveness (Lewis, 1989). Attention to "service quality" can help an organization to differentiate itself from other organizations and through it gain a lasting competitive advantage. High quality of service is considered an essential determinant of the long-term profitability not only of manufacturing organizations but also of service organizations.

As a service giving institution, ETIDI needs to make sure that the service it gives is of expected quality and achieves customer satisfaction. Recently, the Institute has implemented and certified with ISO 9001:2015QMS in the aim of standardizing its work and eventually assuring and maintaining better service quality and meet customers' expectations. The overall performance of ISO 9001 certified service organizations should be administered through elements such as customer satisfaction from service quality, internal administration efficiency, cost of poor quality and employee turnover rate (Psomas, Angelos, & Dimitrios, The impact of ISO 9001 effectiveness on the performance of service companies, 2013). In their study of the relationship between ISO 9001 certification and service quality (Joseph, Hellen, & Joash, 2019) listed process

standardization, clarity of duties, improved efficiencies and responsibilities, establishment of process measurement and evaluation, improved documentation and control as benefits of ISO 9001 certification.

This study focuses on determining the impacts of ISO 9001:2015QMS and service quality on customers' satisfaction of ETIDI.

## **1.2 Background of the Study**

In today's competitive world, be it manufacturer or service provider, need to cope up with their customer's needs to stay alive. Service givers do not produce items and their success solely relies on their service quality and the customer satisfaction that comes with it. Banking, communication, transportation, telecommunication and education are services to mention.

The textile and garment sector has been one of the prioritized sectors by the Ethiopian government in the past decade. It is believed by the government that the sector well contributes to the countries development if managed well. The cases of India, China, Bangladesh and Sri Lanka and their economic development through Textile and garment were what initiate the government to turn its eyes to the sector.

A decade ago, May 2010 to be precise, the government established ETIDI in the city of Addis Ababa which is dedicated to support the textile and garment sector in capacity building, technical interventions, market research and new investments to eventually achieve the economic contribution of the sector to the country. The institute has been continuously capacitating its employees through short term, first and second degree and PHD programs through different national and international twinning arrangements with the intention of improving its service quality. Recently, it has opened a branch office at Hawassa industrial park and is planning to open more branch offices at Dire Dawa, Kombolcha, Mekelle and Adama industrial zones to be able to broaden its accessibility to its customers.

For a service giving entity, being able to achieve customer satisfaction through improved service quality is a life or death situation. Without a better service quality, the existence of the service giver will be in question mark. So, without any question it is necessary to evaluate the service quality of one's own service so as to eventually achieve customer satisfaction.

In mid-2018, ETIDI implemented and was certified with ISO 9001:2015 QMS with the intent of system standardization and bringing better service quality. For survival of any organization whether profit oriented or service giver, the way customers are handled is a critical factor. Failure to fulfill customers' expectations leads to business failures and moving out of competition and an eventual shutdown.

Although, Ethiopian Textile Industry Development Institute is not a business organization, the quality of the service (capacity building, technical supports, market researches, investment services etc.) it delivers directly affects its existence positively or negatively. As stated in the previous section, ETIDI has recently certified with ISO 9001:2015 QMS with the system of process standardization which eventually is believed to help the institute improve its service quality.

Accordingly, it is very important to assess the impact of this ISO 9001: 2015 in relation to not only to process standardization but also with service quality and customer satisfaction.

### **1.3 Statement of the Problem**

In late 2017, before the certification of ETIDI with ISO 9001:2015, a survey was conducted to identify the level of customer satisfaction. 100 respondents were included and the result showed that 15% of the respondents' answer that they are highly satisfied, 60% of the respondents put their satisfaction level at a medium and 20% of the respondents' satisfaction level was measured at low level and the rest were neutral. (ETIDI, 2017)

In 2018, ETIDI was certified with ISO 9001:2015 Quality Management System by the German certification body, Deutsche Gesellschaft zur Zertifizierung von Managementsystemen (DQS) management systems solutions in the aim of assuring better service quality and achieve customer satisfaction. Just after its certification, the institute was able to organize the system from top management level to employee level by setting its quality policy, identifying its processes, procedures and prepare different formats for proper implementations of the system. The system has helped the institute in standardizing its work which enabled the institute to have a better service quality and led to customer satisfaction to a certain level.

In early 2020, almost two years after it was certified with ISO 9001:2015, ETIDI approached textile and garment manufacturers who obtain various services from the institute to identify the



level of their satisfaction. In the assessment 59 respondents were included. The major services which the institute deliver (tangible information supply and transparency, Technical support, consultancy service, capacity building service, laboratory and testing service, systems like Kaizen, QMS and others, Marketing support and research and survey study support) were evaluated against customer satisfaction. (ETIDI, 2017)

The results of the assessment revealed that more than half of the respondents (55% to be precise) measured their satisfaction on ETIDI at a medium level. 23% were highly satisfied whereas the customers who measure their satisfaction level at neutral and low level were 11% each.

In ETIDI, if one compares the outputs of the surveys conducted before and after the implementation of ISO 9001:2015QMS (in 2017 and 2020 respectively), he/she can understand the following. The numbers of the respondents who are highly satisfied with the Institute's service are increased from 15 to 23% but still the majority of the respondents in both scenarios chose to stay medium on their satisfaction level of the Institute's services. The complains arising from customer side are issues related to technical support, lack of tangible information supply and transparency, inadequate consultancy service, inadequate capacity building service, poor marketing support, and poor research and survey study supports. This shows that customers still need more from the institute in its service delivery. So this drives the motive to the study of ISO9001:2015 QMS and service quality impact on customer satisfaction.

#### **1.4 Research Questions**

This study is designed to answer the below research questions.

- What influence does ISO 9001:2015 QMS has on customer satisfaction in ETIDI?
- What is the level of customer satisfaction in ETIDI?
- Is ISO9001:2015QMS properly addressed and incorporated into ETIDI's employees and accepted as a work culture?

## **1.5 Research Objectives**

### **General Objective:-**

- The general objective of this study is to identify the impact of ISO 9001:2015QMS and service quality on customer satisfaction and to identify the challenges faced to meet the aim or the goal so as to show the existing condition of ETIDI and contribute in assisting ETIDI for future betterment through improvement of the system.

### **Specific objectives:-**

- To assess the extent of influence of ISO 9001:2015QMS on customer satisfaction in ETIDI.
- To examine the level of customer satisfaction in ETIDI with regard to service quality using appropriate service quality model.
- To assess the acceptance and internalization of ISO 9001:2015 within the employees of ETIDI.

## **1.6 Scope of the Study**

The concern area of this study is ETIDI, where the researcher evaluated the impact of implementation of ISO 9001:2015 and service quality on customer satisfaction. The results of this study show ETIDI's situation of what its customers think of ETIDI.

Although ETIDI's customers are all over the country where there are textile and garment industries the researcher was not physically able to reach out to areas other than in or near Addis Ababa because of time and money constraints.

## **1.7 Significance of the Study**

This study is expected to benefit ETIDI as an institution and its employees (including management) in such a way that where the position of the institute is in terms of service quality and customer satisfaction. In addition, the institute will learn what ISO 9001:2015 has brought to it besides system standardization. Understanding of current position from a certain perspective helps in making improvements in service quality for the future.

## **1.8 Research Organization**

The research is organized into five chapters.

**Chapter 1** gives a brief introduction about the subject under study. Service quality and its effect on customer satisfaction are presented. In addition, The ISO 9001:2015 quality management system is also briefly discussed. A background about ETIDI's establishment, its role in developing the textile and garment sector and the incorporation of the ISO 9001:2015 into its working system are also discussed. Problem statement, research questions and objectives, significance and scope of the study are also viewed here.

**Chapter 2** reviews various literatures written by different authors in the area of service quality and its relation with customers' satisfaction. Besides literature on ISO 9001:2015 and its relation with service quality and customer satisfaction are also reviewed and presented.

**Chapter 3** presents the methodology followed in accomplishing this research. The type of data collected, the data collection tools and the data analysis methods are discussed in this chapter.

**Chapter 4** analyzes interprets the collected data and shows the findings using appropriate data analysis tools.

**Chapter 5** gives conclusion and recommendations based on the findings of the analysis.

## **CHAPTER - 2**

### **REVIEW OF RELATED LITERATURE**

---

#### **2.1 Introduction**

This section of the research discusses a detail of various studies done by various researchers in the field of service quality, customer satisfaction and QMS. The literatures are presented in a way which shows the relation and impact they have on one another.

#### **2.2 The Service Sector**

In the industrialized nations the service sector has become the prevailing part of the economy. It encompasses a diverse range of organizations and enterprises which include national and local government such as education, health, police, the military and transport. Another is for-profit private services such as hotels, airlines, restaurants, entertainment, banks and insurance companies. Last but not least are nonprofit private services like churches, research foundations and art foundations. The above list is not exhaustive but it helps to demonstrate the varied and complex nature of the service sector. (Speller & Ghobadian, 1994). In the present research's context, ETIDI is classified under national government services.

#### **2.3 Customers' Expectations Compared to Perceptions**

Customers grip different types of expectations about service. Some of the author says customer expectations are beliefs about service delivery that serve as standards or reference points against which performance is judged. Because customers compare their perceptions of performance with these reference points when evaluating service quality, thorough knowledge about customer expectations is critical to services marketers. Knowing what the customer expects is the first and possibly most critical step in delivering good quality service. D. Chingchang and B. Lukong in their empirical study pointed out that it is important to understand and measure customer's expectations in order to identify any gaps in delivering services with quality that could ensure satisfaction (Lukong & Chingang, 2010).

As pointed out by Asubonteng in his article in a journal, Customer's expectation serves as a foundation for evaluating service quality because, quality is high when performance exceeds

expectation and quality is low when performance does not meet their expectation (Asubonteng, 1996)

Zach in his blog about customer perception defines customer perception and its importance. According to him, customer perception refers to customers' awareness, their impressions, and their opinions about a business product or service. (Zach, 2019)

Another author named Zhang said there are several definitions of service quality all with more or less the same thing. He said Customer perception encompasses the way consumers select, organize and interpret both information and stimuli related to a brand, its products and services, which, in turn, determines what they think and how they feel about them. (Yahong, 2019)

## **2.4 Service Quality**

Service quality is a concept that has awakened considerable interest and argument in the research literature because of the difficulties in both defining it and measuring it with no overall consensus. In 2019, Waqas and Sheikh in their journal of SERVQUAL framework referred Service quality as an overall evaluation or attitude towards the comprehensive excellence of service (Waqas & Sheikh, 2019). According to them, service quality is considered as the single most significant determining element of an organization's long term success.

In an article in 2018, Solomon, Eldridge and Helen said service quality was referred as providing something intangible in a way that pleases the customer and that give some value to the customer. Moreover, they pointed out service quality as a function of the difference between perceptions of service quality and expectations of what quality ought to be (Solomon, Eldridge, & Helene, 2018).

Organizations nowadays have understood that service quality brings sustainable and competitive advantage (Miklos, Hossam, Janos, Jozsef, & Judit, 2019).

Asubonteng in 1996 in his Journal about service quality referred to service quality as the discrepancy between consumers' perceptions of services offered by a particular firm and their expectations about firms offering such services is the measure of the Service quality of the service giving firm by the customer. If what is perceived is below expectation, consumer judges

quality as low and if what is perceived is meets or exceeds expectation then consumer sees quality to be high. (Asubonteng, 1996).

## **2.5 Customers' Satisfaction**

An individual's feeling of liking or displeasure which may result from the service he/she gets or the outcome in relation to the expectation is described as satisfaction (Jochen & Lovelock, 2004). In 2001, Rampersad in his article about customers' satisfaction said that Gathering information about the opinion of the customers regarding a product or service is crucial that uses as a feedback for further improvements. This information can be obtained in many ways, such as customer surveys, phone interviews, and customer panel discussions. Additionally, continuously assessing customers' opinion is the best way of updating the services on time. If the customer is satisfied well enough, the loyalty and revenue also increases in the future (Rampersad, 2001).

## **2.6 Measurement of Service Quality**

As presented in previous sections different definitions have been given by different authors for service quality and there is no consensus to what the actual definition is. Various Service quality models are reviewed for this study. Information availability on the various models and previous studies on similar area were viewed on various sectors. Models like Gronroos model, GAP model, SERVPERF model, SERVQUAL model and Hierarchical models are studied. The above service quality models are the main and most used service quality models (Ali, Setareh, & Rohaizat, 2015).

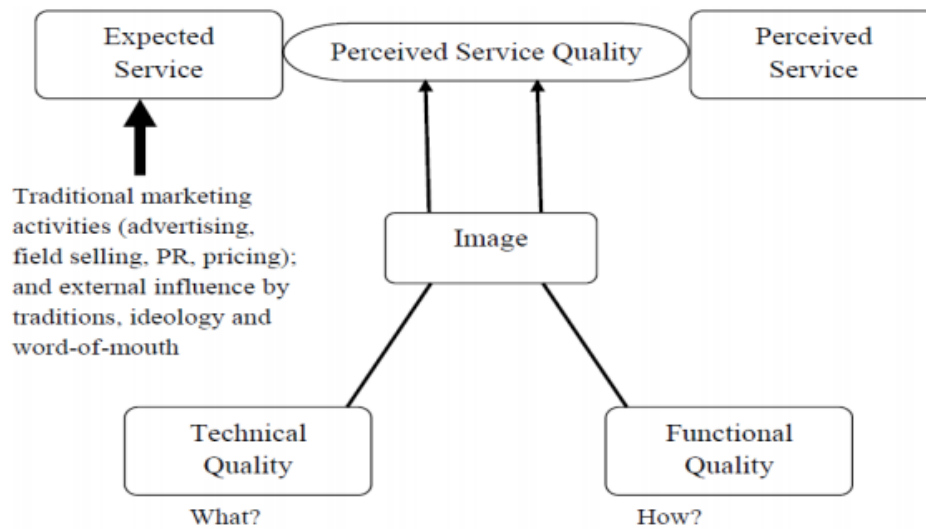
### **2.6.1 Gronroos Model**

Ali and Setareh and Rohaizat in 2015 in their article about service quality measurements discussed different service quality models. They started their discussion by reviewing the Gronroos model (Ali, Setareh, & Rohaizat, 2015).

According to them, Gronroos formed the early conceptualization of service quality in 1982. He believed that if a firm wants to be successful, it is vital for the business operator to understand the customers' perception on the service provided. He said that, Service quality management refers to matching the perceived quality with expected quality and keeping this distance as small as possible in order to reach customers' satisfaction. He suggested three dimensions of service quality. The first dimension, Technical (outcome) means what customers received as a result of

interaction with a service firm. The second is Functional (Process) which means how a technical service is received by a customer. He said service processing is very important on customers' evaluation on the service quality. By comparing these two factors of service the quality expected and received by the customers, we can get the perceived service quality. The third dimension according to Gronroos is related to the customers' view of corporate or brand and is called corporate image. The customers' expectation is influenced by their view of the firm and it is the result of how customers perceived firm services. Therefore, the image is built up by the technical quality and functional quality.

The Gronroos model was the first attempt to introduce a real model for measuring perceived service quality. The main problem of this model was the lack of explanation for measuring technical quality and functional quality (Ali, Setareh, & Rohaizat, 2015).



**Figure 1: The Gronroos Model**

*Source: A review of service quality models by Ali, Setareh and Rohaizat (2015)*

### 2.6.2 GAP model

In 1985, Parasuraman and Zeithaml developed a conceptual model of service quality where they identified five gaps that could impact the consumer's evaluation of service quality in four different industries (retail banking, credit card, securities brokerage and product repair and

maintenance). (Parasuraman, Zeithaml, & Berry, A conceptual model of service quality and its implications for future research, 1985)

These gaps were;

**Gap 1: Consumer expectation - management perception gap**

Service firms may not always understand what features a service must have in order to meet consumer needs and what levels of performance on those features are needed to bring deliver high quality service. This results to affecting the way consumers evaluate service quality.

**Gap 2: Management perception - service quality specification gap**

This gap arises when the company identifies what the consumers want but the means to deliver to expectation does not exist. Some factors that affect this gap could be resource constraints, market conditions and management indifference. These could affect service quality perception of the consumer.

**Gap 3: Service quality specifications – service delivery gap**

Companies could have guidelines for performing service well and treating consumers correctly but these do not mean high service quality performance is assured. Employees play an important role in assuring good service quality perception and their performance cannot be standardized. This affects the delivery of service which has an impact on the way consumers perceive service quality.

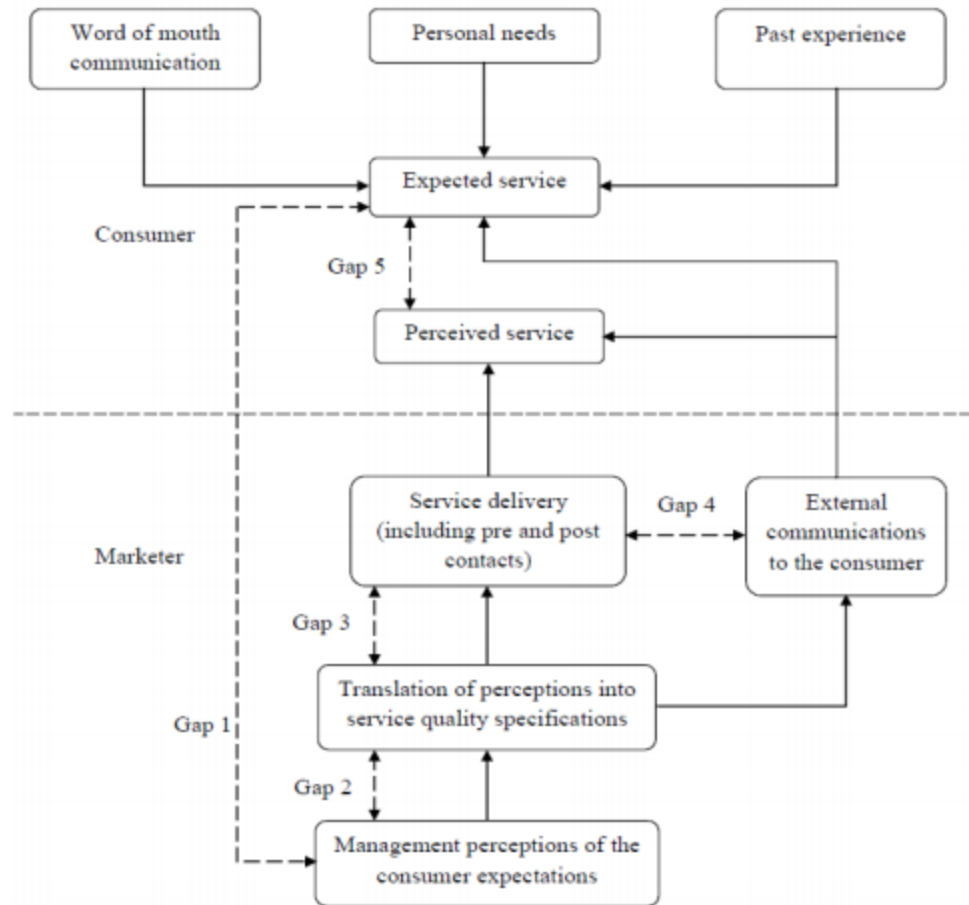
**Gap 4: Service delivery – external communications gap**

External communications can affect not only consumer expectations of service but also consumer perceptions of the delivered service. Companies can neglect to inform consumers of special efforts to assure quality that are not visible to them and this could influence service quality perceptions by consumers.

**Gap 5: Expected Service – perceived service gap**

From their study, it showed that the key to ensuring good service quality is meeting or exceeding what consumers expect from the service and that judgment of high and low service quality depend on how consumers perceive the actual performance in the context of what they expected.





**Figure 2: The GAP Model**

*Source: A conceptual model of service quality by Parasuraman, Zeithaml and Berry (1985)*

### 2.6.3 The SERVQUAL Model

Parasuraman, Zeithaml and Berry later in 1988 developed the SERVQUAL model which is a multi-item scale developed to assess customer perceptions of service quality in service and retail businesses. The scale decomposes the notion of service quality into five constructs as follows: Tangibles, Reliability, Responsiveness, Assurance and empathy. It bases on capturing the gap between customers' expectations and experience which could be negative or positive if the expectation is higher than experience or expectation is less than or equal to experience respectively. (Parasuraman, Zeithaml, & Berry, SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality, 1988). Service quality enables the firm to retain its existing customers, retain good employees, and reduce internal and external costs. Over

the years, service quality has been measured by the SERVQUAL instrument developed by Parasuraman and Zeithaml and Berry.

In 1985 Parasuraman and Zeithaml identified 97 attributes which were found to have an impact on service quality. These 97 attributes were the criteria that are important in assessing customer's expectations and perceptions on delivered service. These attributes were categorized into ten dimensions and later subjected the proposed 97 item instruments for assessing service quality through two stages in order to purify the instruments and select those with significant influences. The first purification stage came up with ten dimensions for assessing service quality which were; tangibles, reliability, responsiveness, communication, credibility, security, competence, courtesy, understanding, knowing, customers, and access. They went into the second purification stage and in this stage they concentrated on condensing scale dimensionality and reliability. They further reduced the ten dimensions to five which were;

**Tangibility:** physical facilities, equipment, and appearance of employees.

**Reliability:** ability to perform the promised service dependably and accurately. It shows the degree by which an organization provides a client with the precise service it suggests through advertising and it must convey what is guaranteed in a particular time period set out within the specified time frame.

**Responsiveness:** willingness to help customers and provide prompt service. This dimension focuses on attentiveness and willingness in dealing with customer requests, queries and prompt complaint resolution.

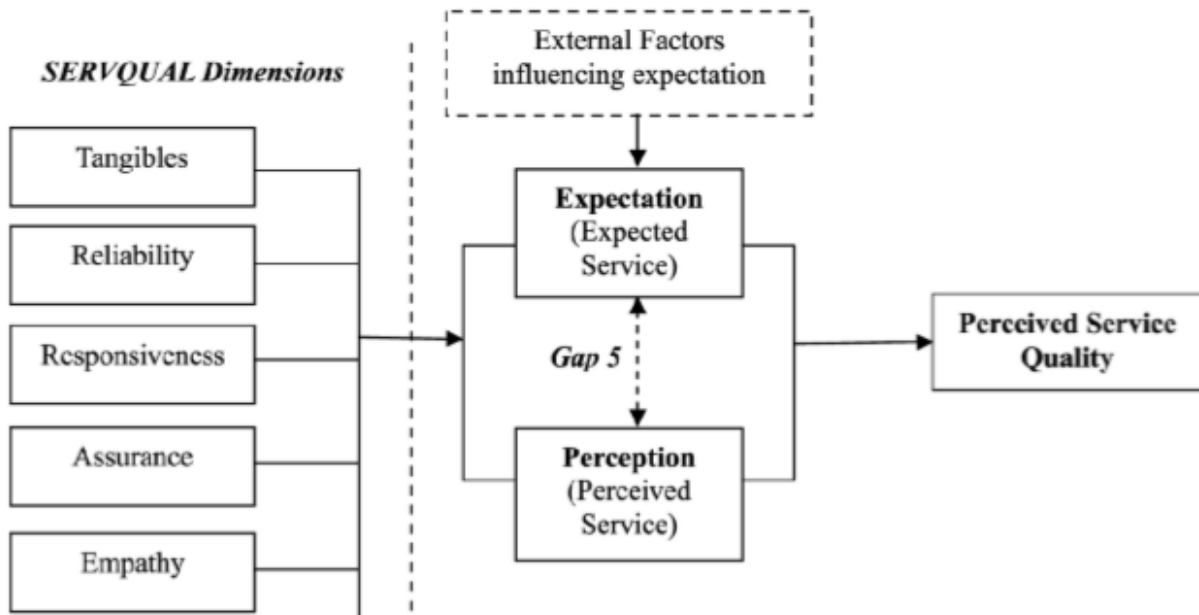
**Assurance:** knowledge and courtesy of employees and their ability to inspire trust and confidence

**Empathy:** caring individualized attention the firm provides to its customers

According to these Authors the SERVQUAL model was primarily developed for service and retail businesses and its objective is to know how customers of a business rate the services offered to them.

SERVQUAL represents service quality as the discrepancy between a customer's expectations for a service offering and the customer's perceptions of the service received, requiring respondents to

answer questions about both their expectations and their perceptions (Parasuraman, Zeithaml, & Berry, SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality, 1988). The use of perceived as opposed to actual service received makes the SERVQUAL measure an attitude measure that is related to, but not the same as, satisfaction. The difference between expectations and perceptions is called the gap which is the determinant of customers' perception of service quality.



**Figure 3: The SERVQUAL Model**

*Source: SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality by Parasuraman, Zeithaml and Berry (1988)*

The expectations of customers are subject to external factors which are under the control of the service provider as shown on the diagram. The gap 5 on the diagram represents the difference between customers' expectations and customers' perceptions which is referred to as the perceived service quality.

This study focuses on this gap, which the difference between ETIDI's customers' expectations and perceptions of the service they get from the institute and it tries to relate it to ISO 9001:2015 impact on the same.

## ❖ Criticisms of SERVQUAL Model

In spite of its growing popularity and widespread application, SERVQUAL has been subjected to a number of theoretical and operational criticisms which are detailed below: (Buttle, 1996)

### ▪ Theoretical criticisms

- ✓ **Paradigmatic objections:** SERVQUAL is based on a disconfirmation paradigm rather than an attitudinal paradigm; and SERVQUAL fails to draw on established economic, statistical and psychological theory.
- ✓ **Gaps model:** there is little evidence that customers evaluate service quality in terms of P – E gaps.
- ✓ **Process orientation:** SERVQUAL focuses on the process of service delivery, not the outcomes of the service encounter.
- ✓ **Dimensionality:** SERVQUAL's five dimensions are not universal; the number of dimensions comprising service quality is contextualized; items do not always load on to the factors which one would a priori expect; and there is a high degree of inter-correlation between the five dimensions (Reliability, assurance, tangible, empathy and responsiveness).

### ▪ Operational criticisms

- ✓ **Expectations:** the term expectation has different definitions; consumers use standards other than expectations to evaluate service quality; and SERVQUAL fails to measure absolute service quality expectations.
- ✓ **Item composition:** four or five items cannot capture the variability within each service quality dimension.
- ✓ **Moments of truth (MOT):** customers' assessments of service quality may vary from MOT to MOT.
- ✓ **Polarity:** the reversed polarity of items in the scale causes respondent error.
- ✓ **Scale points:** the seven-point Likert scale is flawed.
- ✓ **Two administrations:** two administrations of the instrument (expectations and perceptions) cause boredom and confusion.
- ✓ **Variance extracted:** the over SERVQUAL score accounts for a disappointing proportion of item variances.

#### **2.6.4 SERVPERF Model**

The SERVPERF model developed by Cronin and Tyler in (1992) was derived from the SERVQUAL model by dropping the expectations and measuring service quality perceptions just by evaluating the customer's overall feeling towards the service. They suggested a refined model by considering performance as the only factor needs to be measured for service quality. They argued that service quality is a consumers' attitude and the performance (perceived service) of the service is the only measurement for service quality. Investigating service quality relationship with consumers' satisfaction and purchase intention was their study; they believe service quality is an antecedent of consumers' satisfaction. They suggested a new model for service quality based on SERVQUAL with respect to the conceptualization and measurement of service quality which used performance as the only measurement for service quality model called SERVPERF. (Cronin & Taylor, 1992)

In this new model, Cronin and Taylor proceeded to measuring performance (perceived service) with the same dimensions as reliability, responsiveness, assurance, tangibles, and empathy for service quality measurement instead of "expectation-perception" difference.

In their study, they identified four important equations:

$$\text{SERVQUAL} = \text{Performance} - \text{Expectations}$$

$$\text{Weighted SERVQUAL} = \text{Importance} \times (\text{performance} - \text{expectations})$$

$$\text{SERVPERF} = \text{Performance}$$

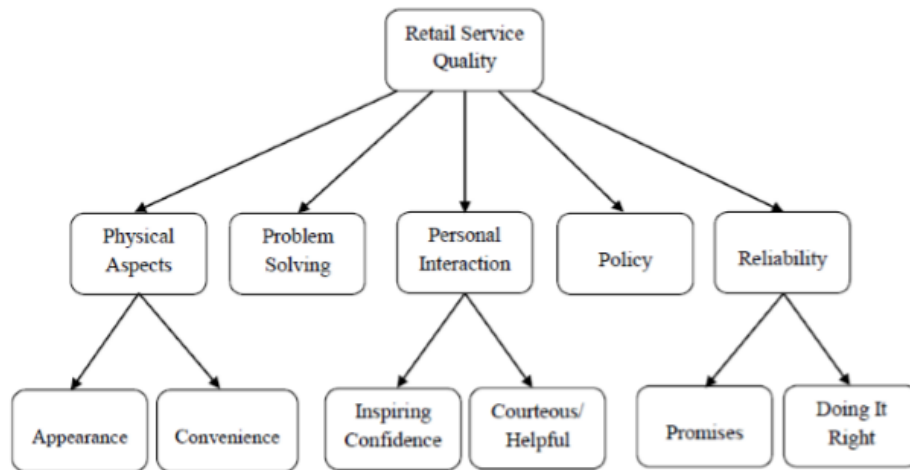
$$\text{Weighted SERVPERF} = \text{Importance} \times (\text{performance})$$

#### **2.6.5 Hierarchical model**

In 1996, Dabholkar, Thorp and Rentz, in their journal about investigation of alternative models of service quality, discussed about the Hierarchical model of service quality evaluation. they pointed out that, though SERVQUAL has the validity by testing in different service sectors (e.g., banking, telephone service, credit card service) there is no adapted and valid for some sectors like retail store environment. Since the construction of SERVQUAL is not adopted for retail store environment, they suggested and tested a new model for service quality to develop dimensions and construction based on SERVQUAL and SERVPERF. In this new model they

suggested a hierarchical structural model for service quality based on previous literature with dimension and sub-dimension level. In their suggested model they introduced three stages; service quality (retail service quality), primary dimensions (physical aspects, reliability, personal interaction, problem solving, and policy), and the sub-dimensions for three dimensions are appearance and convenience for physical aspect dimension, promises and doing it right for reliability dimension, inspiring confidence and courteous/helpful for personal interaction dimension. (Dabholkar, Thorp, & Rentz, 1996)

However, this model also needs more evidence and some development for generalizing and making it applicable in other service industries. Some researchers in the years after tested and suggested some development for this model in other industries than retail store industry



**Figure 4: The Hierarchical Model**

*Source: A Measure of Service Quality for Retail Stores by Dabholkar, Thorp and Rentz (1996)*

- ❖ As stated earlier, although there are criticisms on the SERVQUAL model, many authors suggest that this model is ideal for service institutions and as many authors again state service quality is best measured if it clearly shows the gap between the customers' expectation and perception of service. Therefore, the researcher of this study has used this model for the service quality evaluation.

## 2.7 Principles of Quality Management

The ISO states that there are seven Quality Management Principles which the ISO 9000, ISO 9001 and related quality management standards are based on (ISO, 2015). These are;

- Customer Focus
- Leadership
- Engagement of People
- Process Approach
- Continual Improvement
- Evidence based decision making
- Relationship management

This research study had its focus around the above principles while assessing the condition of the ISO9001:2015 QMS in ETIDI. The impact of the ISO 9001 on service quality of ETIDI was also assessed against the 7 principles of quality.

## 2.8 ISO 9001:2015 Quality Management System

(Fahmi, 2020) In his book about ISO 9001:2015 discussed the following two terms.

**The ISO 9000 family:** The ISO 9000 family of quality management systems standards is designed to help organizations ensure that they meet the needs of customers and other stakeholders while meeting statutory and regulatory requirements related to a product or program. ISO 9000 deals with the fundamentals of quality management systems, including the seven quality management principles upon which the family of standards is based.

ISO 9000 was first published back in 1987. It was based on the British Standard, BS 5750 series of standards from BSI that were proposed to ISO in 1979.

### ISO 9001:2015

During September 2015, a revised version – ISO 9001:2015 – was launched to bring the standard up to date, reflecting latest quality management good practice. Whilst some requirements have been tightened, the standard is now far less prescriptive and has even greater integration with other ISO management standard thanks to a common high-level structure.

The ISO 9001:2015 says that “The primary focus of quality management is to meet customer requirements and to strive to exceed customer expectations”. (Fahmi, 2020)

## **2.9 The Impact of ISO 9001 Effectiveness on Service organizations**

Psomas, Angelos and Dimitrios in 2013 pointed out that according to the ISO 9001 standard, “effectiveness” is defined as the extent to which the anticipated objectives are achieved. The overall performance of ISO 9001 certified service organizations should be administered through elements such as customer satisfaction from service quality, internal administration efficiency, cost of poor quality and employee turnover rate. (Psomas, Angelos, & Dimitrios, The impact of ISO 9001 effectiveness on the performance of service companies, 2013)

In their study of the relationship between ISO 9001 certification and service quality (Joseph, Hellen, & Joash, 2019) listed process standardization, clarity of duties, improved efficiencies and responsibilities, establishment of process measurement and evaluation, improved documentation and control as benefits of ISO 9001 certification.

In Saudi Arabia, a study conducted by Magd in 2005 found out that ISO certification; improved efficiency, yielded better documentation procedures, and increased quality awareness in the firm adapting it. (Magd, 2005)

A study conducted by Mungara in 2010 showed that ISO certification would lead to benefits such as; improved efficiency, streamlined operations, customer satisfaction, reduced waste and improved business performance. (Mungara, 2010).

In 2020, Freddy and Agus said that the implementation of ISO 9001: 2015 starts from 2017. In its application, ISO 9001: 2015 is also considered to be one of the factors in increasing productivity, as well as increasing process efficiency, costs, increasing customer satisfaction and being able to guarantee confidence in the quality of products produced and service provided. (Freddy, Agus, Joko, & Shofwatun, 2020).

Okwiri in his article about ISO 9001 in 2015 said that the benefits of ISO 9001 certification include; focus on achieving planned results, flexibility for documented information, enhanced risk management, improved process control leading to better performance, increased customer satisfaction, customer retention and loyalty, improved image and reputation and greater credibility. (Okwiri, 2015). Additional benefits of ISO 9001 certification include increased



communication, documentation of processes, highlighting inefficiencies and bring them to the attention of management, thus resulting in cost reduction and an increase in quality (Morris, 2013).

Another study carried out in Australia by Singh, Feng, & Smith in 2006 on the benefits of adoption of ISO 9001:2008 in the Public Service Sector in Australia; findings showed improved processes and operations attributed to the implementation of the ISO 9001 certification (Singh, Feng, & Smith, 2006).

Similar study in 2009 conducted by Beaudin on the effectiveness of ISO 9001:2008 in the Public Sector in the Government of Nova Scotia Province, Canada; found out the most significant improvements were in the implementation of processes, continual improvement and involvement of people (Beaudin, 2009).

In their study of the Impact of ISO 9001 certification in Portuguese vocational schools, in 2012 Gamboa and Melao listed process standardization, clarity of duties, improved efficiencies and responsibilities, establishment of process measurement and evaluation, improved documentation and control as benefits of ISO 9001 certification (Melao & Gamboa, 2012).

(Lee, To, & Yu, 2011) in their study of the impact of ISO 9001:2008, on the small-scale service-oriented economy in the public sector in China; found out that adoption of the standard led improvement in the quality of public service delivery to both internal and external customers; internal customers being the public servants and the external customers being the consumers of public services plus the general public.

Another study conducted in 2008 by Psomas, Pantouvakis and Kafetzopoulos revealed that there was direct improvement of service quality and operational performance attributed to the certification (Psomas, Pantovakis, & Kafetzopoulous, The impact of ISO 9001 effectiveness on the performance of service companies, 2013). In their survey of Australian and New-Zealand manufacturing and service companies, Feng, Terziovski and Samson found out that ISO 9001:2008 certifications resulted into a positive and significant improvement on an organization's operational performance (Feng, Terziovski, & Samson, 2008).

One of the advantages a firm gets from ISO 9001 certification is related to tasks particularly as for organizational performance is enhanced proficiency and viability of their activity's clear

organization and clearly documented ways of executing services (Ochieng, Muturi, & Njihia, 2015).

In Africa, in spite of the developing concern and significance of ISO 9001 documentation in numerous firms, the performance of mentioned advancements in African firms have been evidenced to be low, the reception rates among customers and its use has not gotten meaningful yields, the way organizations perform and customers satisfaction has not been satisfactory (Nallusmary, 2016)

## **2.10 Conceptual framework of the Study**

As Parasuraman, Zeithaml and Berry (1988) pointed out in their article about service quality and service quality model, customer satisfaction can be defined as when the customer's expectation of the service provided matches his/her perception of the actual service received. The relationship between customer service provided and expected service quality is the key to measure customer satisfaction. Service quality can be explained as perceived performance from the customer's perspective.

The conceptual framework indicates the vital process, which is useful to illustrate the track of the study. The study demonstrates the relationship between the five service quality dimensions (reliability, responsiveness, assurance, empathy and tangible) and customer satisfaction.

In addition, the researcher of this study has incorporated the QMS principles branch which any ISO9001 standard is based so as to relate and analyze the influence of the same on customer satisfaction.

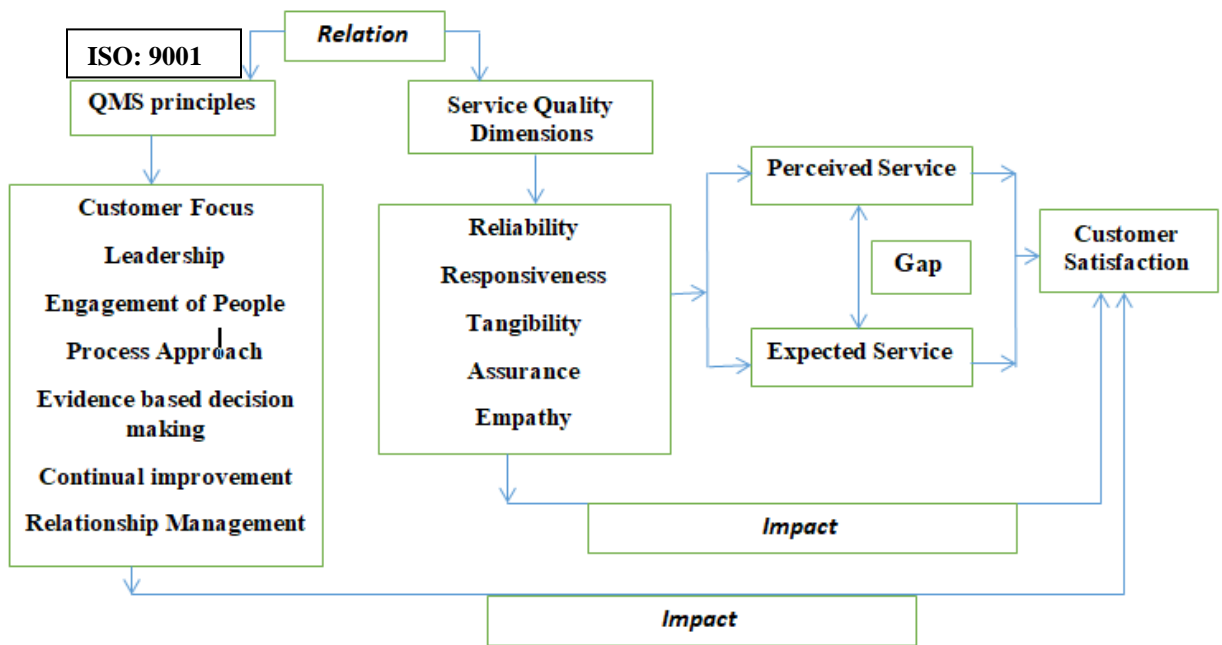


Figure 5: Conceptual frame work of the Study

## **CHAPTER - 3**

### **RESEARCH DESIGN AND METHODOLOGY**

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#### **3.1 Introduction**

In this section, a brief description of the proposed approach to the study is demonstrated. The research design, the type of data required for the research, the way the required data are collected, method of analysis of the data together with the data analysis tools are presented.

#### **3.2 Research Design**

A Research design is a plan used to reach at the expected results. This is a framework created to find answers to the research questions. It is the overall strategy that a researcher chooses to integrate the different components of the study in a coherent and logical way, thereby, ensuring he/she will effectively address the research problem. There are different types of research designs depending on the nature of a particular study. These include; case study design, experimental design, Casual design, cross sectional design, exploratory design, descriptive design, field research design, longitudinal design, meta-analysis design, mixed method design, observational design, philosophical design and sequential design.

For this study casual research design method was used. This type of research is used to measure what impact a specific change will have on existing norms and assumptions. As indicated in the research questions the impact of implementing ISO 9001:2015 on service quality and customer satisfaction needed to be answered and a casual research design type was believed to answer the questions.

#### **3.3 Data collection method and tools**

In this research paper, both primary and secondary data were used. Qualitative and quantitative were collected as per the requirement of the study.

##### **3.3.1 Primary Data**

##### **3.3.1.2 Questionnaires**

Primary data in the form of Questionnaires and interviews were used. Separate questionnaires were prepared for ETIDI's customers and ETIDI's employees.

For ETIDI customers, the SERVQUAL 5 dimensions (Tangibles, Reliability, Responsiveness, Assurance, and Empathy) were used which are subdivided into a total of 20 statements. The findings of this were analyzed to measure the impact of service quality on customer satisfaction and the relation between them. As stipulated by the SERVQUAL model, the statements were divided into two parts, the first part seeks to measure the expectations of customers and the second part seeks to measure their perceptions.

For ETIDI employees, a questionnaire was developed which addresses the major principles of ISO9001:2015QMS in relation to its implementation in the institute. The findings of this were analyzed to measure the impact of this quality management system on customer satisfaction.

For both questionnaires, 5 point Likert scale is used where,

- Score 5 represents very high agreement level
- Score 4 represents high agreement level
- Score 3 represents medium agreement level
- Score 2 represents low agreement level
- Score 1 represents very low agreement level

#### ✓ **Questionnaires Administration**

As will be discussed later in this section of the study, a scientific sampling technique is used to determine the sample size of respondents for the questionnaires. As per the sampling technique, 142 questionnaires were distributed to ETIDI employees of which 108 were fully filled and complete.

On the other hand, 67 questionnaires were distributed to ETIDI's external customers of which 36 were fully filled and collected. In general a total of 209 questionnaires were distributed and 144 were fully complete and used for analysis.

#### **3.3.1.3 Interview Questions**

For interview data collection method, Audio recording were used for recording of sound of the interviewee and separate interview questionnaires were prepared just like the questionnaires.

Again the findings of this were used to reveal the extent to which ISO9001:2015QMS implementation has impacted the customer satisfaction and service quality of ETIDI.

### **3.3.2 Secondary Data**

Past studies and findings were also accessed from ETIDI's archives for the secondary data. These archives include past customer satisfaction analysis works and related literatures from various sources on the subject matter.

Various Service quality models were reviewed for this study and the one that precisely fits the present study was selected. Strengths and weaknesses of each model were identified in order to represent the best fit model in the service quality measurement for this study. Models like Gronroos model, GAP model, SERVPERF model, SERVQUAL model and Hierarchical models were studied and the one that best fits to the study was selected. The above service quality models are the main and most used service quality models (Ali, Setareh, & Rohaizat, 2015).

For the present study the SERVQUAL Model was selected for service quality evaluation because it tries to compare and show the gap between customers' expectation and perception of service quality and as stated by many authors it is used mostly to evaluate the service quality of service sectors and the concern organization of this study is a service organization.

The expected result of this would be to find out the nature of the service quality and customers satisfaction of ETIDI in relation to ISO 9001:2015 QMS.

### **3.4 Population and sample size**

For this research the researcher used the ETIDI employees, the ETIDI customers and internal QMS auditor. It means the researcher conducted the research on ETIDI employees (internal customers) who are more than 310 employees of which 90 are janitors' (gate keepers, cleaners, garden men etc.) and are excluded from the survey. Those included in the survey are from expert level to top management. External customers are those who get service from the institute such as technical support, consultancy and others. In Ethiopia there are more than 130 Garment factories and in and near Addis Ababa there are about 80 garment owners and this were selected for the study. Top management and owners were selected for the survey.

Kothari in 2004 defines sample design as plan for obtaining a sample from a given population. According to him if the total number of the target population is assumed to be less than 10, 000, the following formula can be used to have a representative sample size. (Kothari, 2004)

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

Where:

n= Desired sample size

N = Population size

$e^2$  = is the limit of error tolerance which assured to be 5% (0.5) margin of error with 95% level of confidence.

Therefore;

- For ETIDI Employees the required sample size would be,

$$n=220/1+220(0.05)^2$$

$$n=220/1+0.55$$

$$n=142$$

- For ETIDI external customers the required sample size would be,

$$n=80/1+80(0.05)^2$$

$$n=80/1+0.2$$

$$n=67$$

The following table summarizes the sample size for each of ETIDI employees and factory personnel based on their management level.

**Table 1: Population and sample size of respondents**

S.N	Organization	Management level	Population size	Sample size
1	ETIDI(Ethiopian Textile Industry Development Institute)	Top management	4/220*142	2
		Middle management	18/220*142	12
		Team leaders	18/220*142	12
		Senior expert	36/220*142	23
		Expert	144*220/142	93
		Janitors (gatekeepers, cleaners, garden men etc.)	90	-
		<b>Total</b>	310-90=220	142
2	Factory	Top manager (owner)	80	67
		<b>Total</b>	80	67
		<b>Grand Total</b>	<b>300</b>	<b>209</b>

*Note: - The population size for each is taken from ETIDI archives and HR data*

### **3.5 Method of Data analysis**

In this study, both qualitative and quantitative data were collected as stated previously. The approach to the analysis of the collected data was as follows.

#### **Qualitative data analysis**

There are different methods of qualitative data analysis. Here, the analysis approach for analyzing data collected from interviews and questionnaires is discussed. Several qualitative data analysis methods are available. The first is Content analysis which is used to analyze documented information in the form of texts. It is usually used to analyze responses from interviewees. The second one is narrative analysis which is used to analyze content from various sources, such as interviews of respondents, observations from the field, or surveys. It focuses on using the stories and experiences shared by people to answer the research questions. The third is discourse analysis which is used to analyze interactions with people. However, it focuses on analyzing the social context in which the communication between the researcher and the respondent occurred. Discourse analysis also looks at the respondent's day-to-day environment and uses that information during analysis. Another data analysis approach is using Grounded theory. This refers to using qualitative data to explain why a certain phenomenon happened. It does this by studying a variety of similar cases in different settings and using the data to derive



causal explanations. Researchers may alter the explanations or create new ones as they study more cases until they arrive at an explanation that fits all cases.

The above data analysis approaches are the most commonly used approaches although there are other approaches. One or more of the above approaches were used for this study depending on their ability to answer the research questions.

### **Quantitative Data analysis**

Again in quantitative data analysis needs a data preparation. Following are the steps.

#### **- Data Validation**

The purpose of data validation is to find out, as much as possible, whether the data collection was done as per the pre-set standards and without any bias. It is a four-step process, which includes;

- **Fraud**, to infer whether each respondent was actually interviewed or not.
- **Screening**, to make sure that respondents were chosen as per the research criteria.
- **Procedure**, to check whether the data collection procedure was duly followed.
- **Completeness**, to ensure that the interviewer asked the respondent all the questions, rather than just a few required ones.

#### **- Data Editing**

Respondents may fill fields incorrectly or skip them accidentally. To make sure that there are no such errors, the researcher had conducted basic data checking, checking for any outliers in the collected data, and edit the raw research data to identify and clear out any data points that may hamper the accuracy of the results.

In this research the following data analysis methods and tools were used.

- Descriptive statistics and Frequency analysis using SPSS software
- Gap analysis of SERVQUAL
- Correlation and regression to find out the relationship between and impact of QMS on service quality and customer satisfaction.

## **CHAPTER - 4**

### **RESULTS AND DISCUSSION**

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#### **4.1 Introduction**

This chapter presents a detail analysis of the data collected on through questionnaires and interview. The existing condition of the ISO9001:2015 QMS in ETIDI and its impact and relation on and with customer satisfaction are presented. In addition, the impact and relation of service quality on and with customer satisfaction is also presented.

#### **4.2 Satisfaction level on the current situation of the ISO 9001:2015 QMS ETIDI**

Below is a summary of the responses given by ETIDI management and employees on the existing condition of ISO 9001:2015 QMS in relation to its principles.

##### **4.2.1 Customer Focus**

This is one of the principles of the ISO 9001QMS. As can be seen from the table below, the majority of the respondents showed an agreement level of high concerning ETIDI's intention towards customer focus. 44.8% of the respondents (almost half) agreed to a higher level that the institute's service is customer focused and 30.2% of the respondents (second highest) put their agreement level at a medium. From this, it can be understood that ETIDI is doing good on customer focus servicing but still a lot has to be done as the second majority of respondents show their agreement at a medium level.

Moving onto specific issues under customer focus, it can be seen from the table that the Institute is doing well in identifying its customers (52.8% of respondents), identifying their needs and requirements (46.3% of the respondents) and establishing of clear processes (53.7% of the respondents) putting their agreement level on these at a higher level. On the other hand, it is falling short on strictly operating on established processes 41.7% of the respondents showing their agreement level at a medium level.

**Table 2: Level of Satisfaction in Customer Focus**

CUSTOMER FOCUS						
		Very Low	Low	Medium	High	Very High
1	ETIDI Identifies its customers	0.9	1.9	22.2	52.8	22.2
2	ETIDI clearly Identifies its customers' needs and requirement	3.7	7.4	28.7	46.3	13.9
3	ETIDI Translates customers requirement into standard	4.6	9.3	33.3	38.9	13.9
4	ETIDI Establishes clear process	0.9	8.3	25	53.7	12
5	ETIDI strictly adheres to the established processes	2.8	15.7	41.7	32.4	7.4

*Source: - Survey result of SPSS*

#### **4.2.2 Leadership**

Concerning leadership, almost equal number of respondents 33.9% and 33.7% to be specific put their agreement on medium and high level respectively with medium slightly higher.

Coming to specific issues under leadership, the table shows that the management has done very good on establishing vision, goals and target with 45.4% and 30.4% of respondents showing high and very high agreement levels. On the other hand, there is a clear gap on the management in establishing trust and eliminating fear with employees and providing people with required resources. 45.4% and 20% of the respondents measure their agreement on medium and low level respectively. Concerning providing people with required resources the majority of respondents (45%) showed a medium agreement and 31.5 % agreed to a higher level.

All in all, it can be understood that leadership is one of the areas which the institute requires some serious improvement.

**Table 3: Level of Satisfaction in Leadership**

LEADERSHIP						
		Very Low	Low	Medium	High	Very High
1	Management Establishes a vision, goals and target	3.7	6.5	13.9	45.4	30.6
2	Management Establishes trust and eliminates fear	6.5	20.4	45.4	24.1	3.7
3	Management Provides people with required resource and training	7.4	14.8	42.6	31.5	3.7

### 4.2.3 Engagement of people

One of the requirements of the ISO 9001 is engaging people. More than half of the respondents believe that people are not engaged to an expected level. 53% of the respondents (highest portion) put their agreement level to a medium concerning engagement of people where as 24.6% of the respondents (second highest) agree to a higher level on people engagement and 19.6% agree to a lower level on people engagement.

Coming to specific statements under engagement of people, there is a clear indication of gap on the situations of “Employees understanding their importance, contribution and role in the organization, “Employees accepting when problems occur, know their responsibility and take action for solving them” and the condition of employees accepting when problems occur, know their responsibility and take action for solving them with all of them measured at medium level of agreement by the majority of the respondents. In addition to this, majority of the respondents think that people do not openly discuss problems and issues with 47.2% of the respondents put

their agreement level to at a medium level and 30.6% of them put their agreement at a low level concerning the situation of people’s habit of openly discussing problems and issues.

**Table 4: Level of Satisfaction in Engagement of People**

ENGAGEMENT OF PEOPLE						
		Very Low	Low	Medium	High	Very High
1	Employees understand their importance, contribution and role in the organization	0	11.1	59.3	25.9	3.7
2	Employees accept when problems occur, know their responsibility and take action for solving them	0	20.4	57.4	21.3	0.9
3	Employees evaluate their performance against their personal goals and objectives	0	16.7	41.7	39.8	1.9
4	Employees actively seek opportunity to enhance their competence, knowledge and experience.	0.9	19.4	59.3	18.5	1.9
5	People openly discuss problems and issues.	4.6	30.6	47.2	17.6	0

#### 4.2.4 Process Approach

Concerning the process approach practice of the institute almost half (48.4%) of the respondents say that ETIDI is at a medium level with the second highest number of respondents (23.2%) measuring their agreement at a low level. Coming to specifics, ETDI is doing well on defining key activities as the second majority of the respondents agree to this to a higher level. But the institute is falling short on setting responsibility and accountability mechanism for management of these key activities and analyzing and measuring of these the same as the second majority of respondents put their satisfaction level at low on these.

**Table 5: Level of Satisfaction in Process Approach**

PROCESS APPROACH						
		Very Low	Low	Medium	High	Very High
1	The institute Key activities are defined	0	14.8	46.3	30.6	8.3
2	Responsibility and accountability mechanism is established for managing key activities	0.9	24.1	49.1	21.3	4.6
3	Key activities are analyzed and measured	0	26.9	49.1	17.6	6.5
4	Focus is given on factors to improve key activities	0	26.9	49.1	20.4	3.7

#### 4.2.5 Continual Improvement

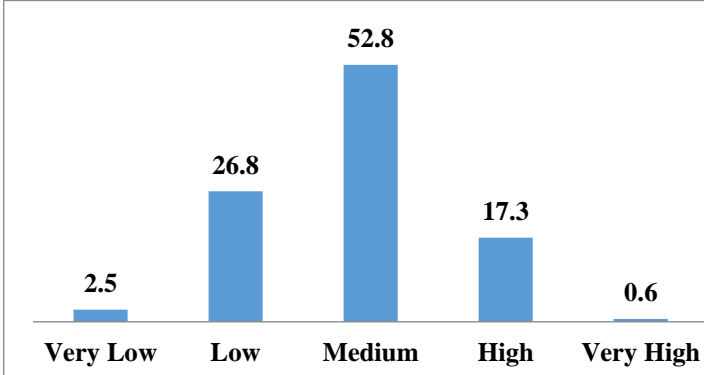
Without continual improvement achievement of goals and objectives will be difficult. So maintaining a good practice of continuous improvement is very crucial for any entity.

Here again, the highest portion of respondents (more than 50%) put their agreement level on this concern to a medium level. The second highest respondents (26.8%) believe that the institute is doing poor on continual improvement.

Coming to specifics, the majority of the respondents put their satisfaction or agreement level at a medium, but the second highest number of respondents agree to a low level that system improvement is continually made (33.3% of the respondents) and they also agree to a low level that improvements are recognized and acknowledged (32.4% of the respondents).

On the other hand, the second highest majority of respondents agree to a higher level that employees are provided with training in methods and tools of continual improvement (32% of the respondents). From this it can be understood that the problem is more with the implementation than the training.

**Table 6: Level of Satisfaction in Continual Improvement**

CONTINUAL IMPROVEMENT						
		Very Low	Low	Medium	High	Very High
1	Employees are provided with training in the methods and tools of continual improvement	1.9	14.8	52.8	29.6	0.9
2	System improvement is continually made	1.9	33.3	51.9	12	0.9
3	Improvements are recognized and acknowledged	3.7	32.4	53.7	10.2	0

**4.2.6 Evidence based decision making**

The condition of using actual evidence for making decisions is measured at a medium level by more than half of the respondents (52.6%) with the second highest number of respondents (29.6%) putting their agreement level on this at a higher level.

Moving to specifics, the highest number of respondents (50%) put their agreement level to a higher level concerning the condition of making data accessible to those who need it with the second highest number of respondents(30.6%) showed a medium level of agreement on this.

69.4% of the respondents agreed to a medium level on the condition of ensuring data and information are sufficiently accurate and reliable. This is the highest percentage of respondents so far in the analysis. The condition of using valid methods for data analysis in the institute is rated to a medium level by 57.4% of the respondents.

**Table 7: Level of Satisfaction in Evidence based Decision Making**

EVIDENCE BASED DECISION MAKING						
		Very Low	Low	Medium	High	Very High
1	The condition whether data and information are sufficiently accurate and reliable is ensured.	0.9	11.1	69.4	18.5	0
2	Data is made accessible to those who need it	0	13.9	30.6	50	6
3	Data and information are analyzed by using valid methods	0.9	14.8	57.4	26.9	0
4	Decision making and taking action are based on factual analysis, and balanced with experience and intuition.	4.6	18.5	52.8	23.1	0.9

**4.2.7 Relationship management**

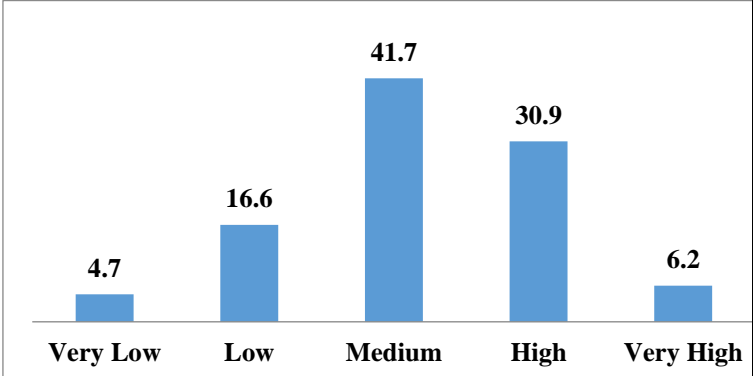
This is the area where the relationship of ETIDI with stakeholders and cooperative workers is evaluated. The overall agreement level on this was rated at a medium level by 41.7 % of the respondents and at a higher level by 30.9% of the respondents.

Coming to specifics, the institute is doing well in identification and selection of key stakeholders with majority of the respondents (42.6 %) agreed to a higher level. The problem comes when the condition of clear and open communication and sharing of future plans with stakeholders come into the picture. Highest number of respondents (43.5%) agrees to a medium level that these two conditions are properly practiced.

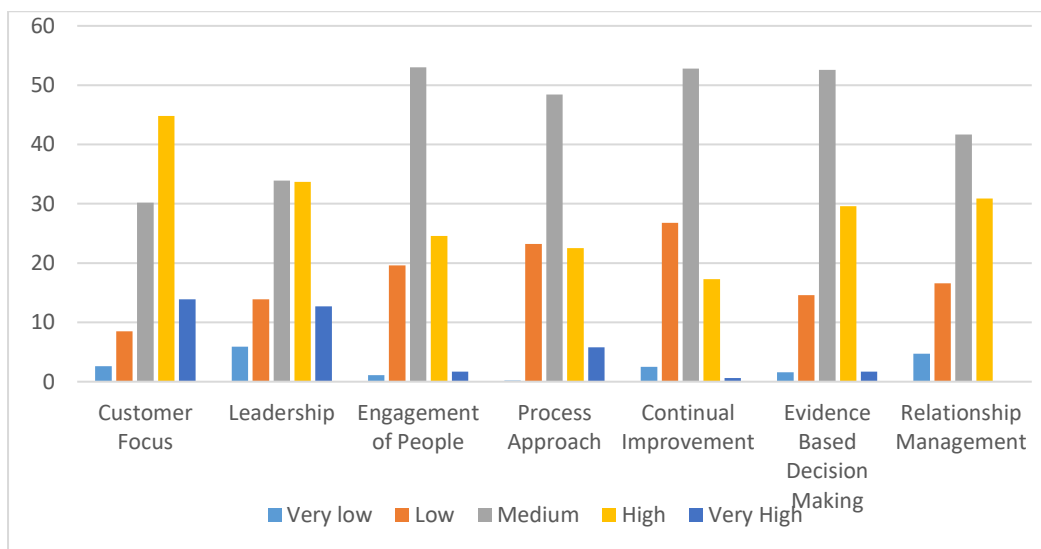
The figure below summarizes the satisfaction level of respondents concerning the condition of the major ISO9001:2015 principles in ETIDI.



**Table 8: Satisfaction Level in Relationship Management**

RELATIONSHIP MANAGEMENT						
		Very Low	Low	Medium	High	Very High
1	Key stakeholders are identified and selected.	1.9	4.6	38	42.6	13
2	There is Clear and open communication with stakeholders	6.5	19.4	43.5	27.8	2.8
3	Information and future plans are shared with stakeholders.	5.6	25.9	43.5	22.2	2.8

The below figure summarizes the results of the satisfaction levels of the respondents in all the ISO9001:2015 QMS principles and from the figure it can be observed that significant points are on average so clear improvements are needed on the same.



**Figure 6: Satisfaction on the major ISO9001:2015 QMS principles**

#### 4.2.8 Descriptive Statistics on the conditions of the principles of ISO9001:2015 in ETIDI

The following descriptive analysis is made to give a general picture by comparing mean values to point out where ETIDI is doing well and where it is falling short.

**Table 9 (a): Descriptive Statistics on ISO9001:2015 QMS Principles**

Descriptive Statistics			
Principles of ISO9001:2015QMS		Mean	Std. Deviation
Customer Focus	ETIDI Identifies its customers	3.94	0.777
	ETIDI clearly Identifies its customers' needs and requirement	3.59	0.948
	ETIDI Translates customers requirement into standard	3.48	1
	ETDI Establishes clear process	3.68	0.83
	ETIDI strictly adheres to the established processes	3.26	0.911
Leadership	Management Establishes a vision, goals and target	3.93	1.02
	Management Establishes trust and eliminates fear	2.98	0.927
	Management Provides people with required resource and training	3.09	0.952
Engagement of People	Employees understand their importance, contribution and role in the organization	3.22	0.688
	Employees accept when problems occur, know their responsibility and take action for solving them	3.03	0.676
	Employees evaluate their performance against their personal goals and objectives	3.27	0.756
	Employees actively seek opportunity to enhance their competence, knowledge and experience.	3.01	0.704
	People openly discuss problems and issues.	2.78	0.789
Process Approach	The institute Key activities are defined	3.32	0.83
	Responsibility and accountability mechanism is established for managing key activities	3.05	0.825
	Key activities are analyzed and measured	3.04	0.842

Descriptive Statistics			
Principles of ISO9001:2015QMS		Mean	Std. Deviation
	Focus is given on factors to improve key activities	3.01	0.791
Continual improvement	Employees are provided with training in the methods and tools of continual improvement	3.13	0.737
	System improvement is continually made	2.77	0.718
	Improvements are recognized and acknowledged	2.7	0.701
Evidence based decision making	The condition whether data and information are sufficiently accurate and reliable is ensured.	3.06	0.577
	Data is made accessible to those who need it	3.47	0.803
	Data and information are analyzed by using valid methods	3.1	0.669
	Decision making and taking action are based on factual analysis, and balanced with experience and intuition.	2.97	0.803
Relationship management	Key stakeholders are identified and selected.	3.6	0.842
	There is Clear and open communication with stakeholders	3.01	0.922
	Information and future plans are shared with stakeholders.	2.91	0.902

Source: SPSS descriptive analysis of survey

### Good Performance Areas

From the above table it can be seen that the following are 27 statements concerning principles of the ISO 9001:2015 QMS. From these, the highest rated statements which ETIDI is doing well with relative to others concerning the major principles of ISO9001:2015 are listed below.

- ETIDI's identifies its customers (Mean of 3.94)
- Management Establishes a vision, goals and target (Mean of 3.93)
- ETDI Establishes clear process (Mean of 3.68)

- Key stakeholders are identified and selected. (Mean of 3.6)
- ETIDI clearly Identifies its customers' needs and requirement (Mean of 3.59)
- ETIDI Translates customers' requirement into standard (3.48)

### **Weak Performance Areas**

The lowest rated statements which ETIDI is falling short with relative to others concerning the major principles of ISO 9001:2015QMS are listed below.

- Improvements are recognized and acknowledged (Mean of 2.7)
- System improvement is continually made (Mean of 2.77)
- People openly discuss problems and issues (Mean of 2.78)
- Information and future plans are shared with stakeholders (Mean of 2.91)
- Decision making and taking action are based on factual analysis, and balanced with experience and intuition. (Mean of 2.97)
- Management Establishes trust and eliminates fear (Mean of 2.98)

In general it can be concluded that the respondents are satisfied with ETIDI's ability to identify its customers, their needs and requirements and changing those requirements into standards. In addition to these, the respondents are also satisfied with the condition where clear processes are established, identification and selection of key stakeholders and the condition in which the management establishes vision, goals and target.

On the contrary, the respondents are not satisfied with the conditions of recognizing and acknowledging people, continual system improvements and people's condition of openly discussing issues and problems. Respondents are also not satisfied with the condition of sharing information and future plans with stakeholders, on the use of factual data analysis to reach at the right decision and the management's ability to build trust and eliminate fear within the employees.

### **Nature of individual responses**

Here the standard deviation tells how spread out individual responses is. The condition of whether responses given are concentrated around the mean, scattered far and wide or did all the respondents rate a parameter in the middle of the scale or did some love it and some hate it is measured by the standard deviation. A low standard deviation indicates that the data points tend

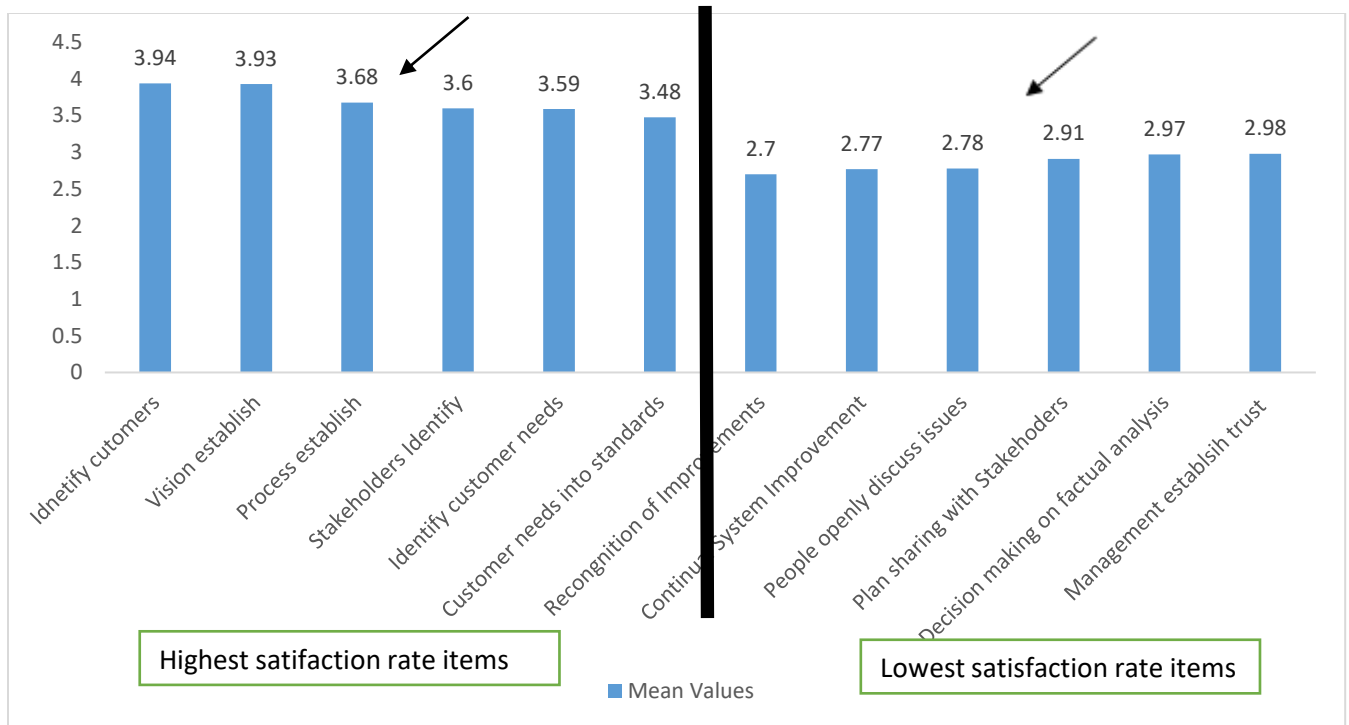
to be very close to the Mean and a high standard deviation indicates that the data points are spread out over a large range of values.

From the below table, it can be observed that somewhat dispersed responses were given concerning customer focus (standard deviation of 0.893), which means that the respondents showed somewhat wide-ranging outlook among themselves for this aspect; some rate it at low satisfaction and others at higher satisfaction. Similar result was found for Process approach (0.822), Relationship management (0.8887) and Leadership aspects (0.966).

On the other hand individual responses of respondents were observed to be closer to the Mean for the aspects of Engagement of People (0.7226), Continual Improvement (0.7187) and Evidence based decision making (0.713). This means that the respondents have similar outlook among themselves for these aspects.

**Table 9 (b): Descriptive Statistics on ISO9001:2015 QMS Principles**

<b>Principles of ISO9001:2015QMS</b>	<b>Average of Mean</b>	<b>Standard deviation</b>
Customer focus	3.59	0.893
Leadership	3.33	0.966
Engagement of people	3.062	0.7226
Process approach	3.105	0.8222
Continual improvement	2.87	0.7187
Evidence based decision making	3.15	0.713
Relationship management	3.17	0.8887



**Figure 7: Highest vs. Lowest satisfaction rates on QMS Principles**

From the above figure it can be seen that respondents are relatively satisfied on the existing conditions the first six items than the second six.

An interview was also conducted with one of the top management (Deputy Manager) of ETIDI and QMS auditor to get more information on the same.

*Question 1: - how do you evaluate /judge the impact that ISO9001:2015 QMS brought to service quality and customer satisfaction of ETIDI?*

Deputy Manager

*“QMS has helped us to standardize our services. That means it showed us the way how customer requests are handled by setting up processes and procedures. In doing so we were able to understand that for the same service type various departments use to follow their own approach to handle services and this resulted in subjectivity but now QMS has helped standardize this.*

*It has also helped as to properly define our citizens charter (a promise chart for customers in delivering service with the required quality and time. As a service providing institution, I believe that QMS has somehow improved our image and grievance management system. The condition*

*of complains whether they have been handled on time or not was not known and followed up because there was no standard grievance handling system but now QMS has helped us improve this.*

*Although I may not say that QMS has put our service quality to a level where we want it to be, we believe that our service are being improved from where they use to be. One thing is that we have not as such promoted to our customers that we have implemented QMS, another is our location which is somewhat inconvenient to our customers, and the system is not being yet automated.*

*From the customer side also, even if our feedback giving culture as a society is as such not practiced, we believe that it has brought a positive change.”*

#### QMS Auditor of the institute

*“QMS has standardized our processes. Before QMS any one of the employees of the institute use to do their jobs in their own suitable way but now because of QMS, every process is standardized and our customers have started getting uniform services and this I believe has improved our service quality indirectly although no impact assessment is done.”*

*Question 2: -How do customers (both internal and external) evaluate ETIDI before and after implementing ISO9001:2015 QMS concerning its impact and service quality? Are there any studies or survey conducted concerning this?*

#### Deputy Manager

*“For our external customers we have not conducted a study or survey on what impact has QMS particularly brought to the institute but we are assuming that whatever improvement we have brought to our service quality, QMS has its own contribution.*

*But for our internal customers we regularly measure its impact and we believe the change it brought is positive. But sometimes, employees somehow relate it to salary issues and life expensiveness and their satisfaction somehow looks lower.”*

QMS Auditor of the institute

*“No impact assessment has been done on what QMS implementation has brought to the institute. We somehow try to see the customers’ satisfaction on various services but purposely no assessment has been done to learn the impact of QMS through measuring of existing condition of its principles in the institute.”*

*Question 3: - how do you see the condition that ISO9001:2015QMS properly addressed and incorporated into ETIDI's employees and accepted as a work culture?*

*“I can say that more than 85% of the employees abide the system and accept it as a work culture. QMS did not come to our institute as a government direction unlike previous tools like change army (yelewt serawit) which people believe have some political intentions. But QMS is a science and people did not relate it to anything and it did not come as a direction but from our own initiation.”*

QMS Auditor of the institute

*“One of the important things which I think QMS has brought is that people have started to understand the principles of QMS. For example, understanding of mission and vision statements which are communicated to all employees and I think this is one step forward from where we use to be. Departments have started setting annual objectives which they strive to achieve because of QMS. Although these are positives, I cannot surely say that all things are being done with what the system demands. Sometimes departments wait until certification periods to fulfill missed documents so as to pass compliance. I believe through time this will get improved as we are at our infant stage (3 years since implemented).*

*I cannot say all the people in ETIDI strictly follow the set processes. There are departments who stick to the established processes and procedures in and orthodox manner and who act as leaders and there are others who are pulling us back but those who act as leaders are more (much more) than those who are pulling us back. I believe this will improve through time by internal audits and trainings.”*



From the above responses the following major things were understood.

- The interviewees pointed out that QMS has helped the institute establishing processes and standardizing the same which is also revealed by the descriptive analysis above. Although one of the interviewee (Deputy manager) believe that more than 85% of the employees stick to QMS in accepting it as a work culture, the results of the descriptive analysis state otherwise. As per the descriptive analysis this is one of the areas where the institute is falling short. Although there are good beginnings concerning the awareness and acceptance of the system among people, there are gaps concerning internalization of the system and accepting it as a work culture and sticking to what it demands all the time.
- The service quality of the institute is not improved to a level where the management expect it to be. They believe through time the impact will start to show on service quality and customer satisfaction. The descriptive analysis done below on service quality also showed that customers' satisfaction on service quality is medium.
- ETIDI has not conducted any study concerning QMS impact on service quality and customer satisfaction. The institute is trying to understand the Impact of ISO9001 QMS through an indirect manner by collecting feedbacks and the like. This research is the first of its kind to directly assess the impact of QMS.

### **4.3 Service quality and customer satisfaction in ETIDI**

The service quality and customer satisfaction in ETIDI is measured through SERVQUAL model. As discussed in previous sections, the service quality measurement consists of five service quality dimensions namely Tangibles, Reliability, Responsiveness, Assurance and Empathy.

#### **4.3.1 Service quality gap in Tangibles Aspects**

As can be seen in the table below, availability of clean and adequate bathroom and training rooms are the top aspects which are the highest customer dissatisfaction causes in relation to aspects related to tangibles. A research and training organization like ETDI need to really consider this as a serious issue. The remaining aspects are also with a negative service gap which means the customers' expectation is not met but are in a better position relative to the previous two.

**Table 10: Service Gap in Tangible service quality dimension**

	Statements	Perception (P)	Expectation (E)	Service Gap	Rank
		Mean	Mean	P-E	
1	ETIDI have modern training/research equipment	3.64	4.36	-0.72	5
2	Its physical facilities (shelves, customer service counters-reception, computers, and lights) are visually attractive.	3	3.94	-0.94	4
3	It has clean and adequate bathroom	2.39	3.97	-1.85	1
4	It has adequate training rooms	2.78	4.31	-1.53	2
5	Overall appearance of building and facilities look nice	3.36	4.03	-0.67	6
6	Its employees have professional appearance	3.33	4.31	-0.98	3

#### 4.3.2 Service quality gap in Reliability Aspects

Gap analysis result presented in the below table shows that a major aspect of gap in case of ETIDI's ability to provide the required service exactly the first time (-1.08) followed by its ability to deliver a service at the time it promised to do so (-0.84). It can be said that customers are dissatisfied on these two aspects relative to the third one concerning reliability issues.

**Table 11: Service Gap in Reliability service quality dimension**

	Statements	Perception (P)	Expectation (E)	Service Gap	Rank
		Mean	Mean	P-E	
1	ETIDI provides a service at a time it set out to provide	3.08	3.92	-0.84	2
2	It provides the required service exactly at the first time	2.78	3.86	-1.08	1
3	The experts show dedication to solve customer issues	3.44	4	-0.56	3

#### 4.3.3 Service quality gap in Responsiveness Aspects

As presented in the table below, customers believe that ETIDI has a lengthy and beaucroatic steps to answer to customer requests which make them dissatisfied on the time it takes to get service. As can be seen it is the aspect with the highest service gap (-1.28) in relation to

responsiveness. The experts' willingness to assist customers and tell them the exact time a service will be performed are the aspect which customers are least dissatisfied with a service gap of  $-0.72$ .

**Table 12: Service Gap in responsiveness service quality dimension**

	Statements	Perception (P)	Expectation (E)	Service Gap	Rank
		Mean	Mean	P-E	
1	ETIDI experts tell to customers the exact time a service will be performed	3.28	4	-0.72	4
2	It gives a swift (quick) response to customer requests	3.11	4.06	-0.95	2
3	The experts are willing to assist customers	3.61	4.33	-0.72	4
4	The experts make information easily available to customers.	3.39	4.25	-0.86	3
5	ETIDI does not have lengthy and beaurocratic procedures to respond to customer request	2.75	4.03	-1.28	1

#### 4.3.4 Service quality gap in Empathy Aspects

The table above depicts that the experts' institution of giving individual care and attention to customers is highest in terms of resulting in customer dissatisfaction. One other thing which can be understood from the table is that Empathy of experts to customers is the service quality dimension which the customers are least dissatisfied with so far.

**Table 13: Service gap in Empathy service quality dimension**

	Statements	Perception (P)	Expectation (E)	Service Gap	Rank
		Mean	Mean	P-E	
1	ETDI experts give individual attention and care to customers	3.47	4.08	-0.61	1
2	The experts understand my specific needs	3.56	4.14	-0.58	2
3	The experts have their customers interests at heart	3.47	3.94	-0.47	3

#### 4.3.5 Service quality gap in Assurance Aspects

Concerning Assurance aspects of service quality, ETIDI experts' knowledge and skill to answer to customer requests is the aspect which customers think as a major gap (-0.64) in relation to the remaining two.

Again here, it can be said that Assurance aspect is the service quality dimension which the customers are least dissatisfied with just like Empathy aspect.

**Table 14: Service Gap in Assurance service quality dimension**

	Statements	Perception (P)	Expectation (E)	Service Gap	Rank
		Mean	Mean	P-E	
1	ETIDI experts have the knowledge to answer to all customer questions	3.17	3.81	-0.64	1
2	The experts have the ability to inspire trust and confidence in customers	3.44	3.92	-0.48	2
3	The experts treat customers with respect and politeness	4.06	4.39	-0.33	3

The overall understanding from the analysis made in the 5 service quality dimensions (Tangibility, Reliability, Responsiveness, Empathy and Assurance) is that customers believe the service quality of ETIDI is not good as their perceptions fall short of what they expect.

All the dimensions show a gap between expected service and perceived service (although some gaps are closer to zero which is a good thing) which implies that ETIDI need to make improvements in all dimensions in order to close the gaps that could lead to increased customer satisfaction.

The below table summarizes the average gap scores of each service quality dimensions from the highest to least dissatisfaction of customers so that ETIDI can prioritize its focus area to achieve customer satisfaction.

**Table 15: Ranked average service Gap score**

Rank	Service quality dimension	Average Service Gap score
1	Tangibles	-1.11
2	Responsiveness	-0.91
3	Reliability	-0.83
4	Empathy	-0.55
5	Assurance	-0.48

From the above table, the tangibles and responsiveness service quality dimensions are with the highest negative gap scores. Hence ETIDI needs to prioritize these two followed by Reliability, Empathy and Assurance to improve customer satisfaction.

Below is a chart which shows the items with lowest service gap (least dissatisfaction) in comparison with those with highest service gap (highest dissatisfaction) of customers on the service quality of ETIDI.

From the figure it can be understood that there is a higher service quality gap which resulted in highest customer dissatisfaction on the items which are on the right (three from tangibles, two from responsiveness and one from reliability) and least customer dissatisfaction on the items which are on the left (mostly of employees Empathy towards customers).

In the points where least customer dissatisfaction was observed, the dissatisfaction increases as one moves from “the respect and politeness that employees show to customers to overall appearance of building”. In the points where high customer dissatisfaction was observed, the dissatisfaction increases as one move from giving swift response to customers to clean and adequate bath room”.

#### **4.3.6 Descriptive Statistics on Service quality of ETIDI**

In table 4.13 it was observed that ETIDI is not meeting what its customers are expecting as the Gaps reveal an average negative score for all the service quality dimensions although they are closer to zero (a gap score of zero means customers have got what they expected.)

But even if the customers' expectations are higher than what they perceive, separate descriptive analysis is made to see where the institute is doing relatively well and where it is clearly falling short.

**Table 16 (a): Descriptive Statistics on Service Quality of ETIDI**

<b>Descriptive Statistics</b>			
<b>Service Quality Dimensions</b>		<b>Mean</b>	<b>Std. Deviation</b>
<b>Tangibles</b>	ETIDI have modern training/research equipment	3.64	0.833
	Its physical facilities (shelves, customer service counters-reception, computers, and lights) are visually attractive.	3	0.894
	It has clean and adequate bathroom	2.39	0.871
	It has adequate training rooms	2.78	1.017
	Overall appearance of building and facilities look nice	3.36	0.762
	Its employees have professional appearance	3.33	0.793
<b>Reliability</b>	ETIDI provides a service at a time it set out to provide	3.08	0.996
	It provides the required service exactly at the first time	2.78	0.866
	The experts show dedication to solve customer issues	3.44	0.695
<b>Responsiveness</b>	ETIDI experts tell to customers the exact time a service will be performed	3.28	0.849
	It gives a swift (quick) response to customer requests	3.11	0.19
	The experts are willing to assist customers	3.61	0.645
	The experts make information easily available to customers.	3.39	0.994
	ETIDI does not have lengthy and beaurocratic procedures to respond to customer request	2.75	0.937
<b>Empathy</b>	ETDI experts give individual attention and care to customers	3.47	0.91
	The experts understand customers specific needs	3.56	0.939
	The experts have their customers interests at heart	3.47	0.845
<b>Assurance</b>	ETIDI experts have the knowledge to answer to all customer questions	3.17	0.737
	The experts have the ability to inspire trust and confidence in customers	3.44	0.735
	The experts treat customers with respect and politeness	4.06	0.715

### **Good Performance areas**

From the above table, the highest rated statements which ETIDI is doing well with relative to others concerning service quality are listed below.

- The experts treat customers with respect and politeness (Mean of 4.06)
- ETIDI have modern training/research equipment (Mean of 3.64)
- The experts understand customers specific needs (Mean of 3.56)
- ETIDI experts give individual attention and care to customers & The experts have their customers interests at heart (Mean of 3.47)
- The experts have the ability to inspire trust and confidence in customers (Mean of 3.44)
- The experts make information easily available to customers (Mean of 3.39)

### **Weak performance areas**

The lowest rated statements which ETIDI is falling short with relative to others concerning service quality are listed below.

- It has clean and adequate bathroom (Mean of 2.39)
- ETIDI does not have lengthy and beaurocratic procedures to respond to customer request (Mean of 2.75)
- It provides the required service exactly at the first time (Mean of 2.78)
- It has adequate training rooms (Mean of 2.78)
- Its physical facilities (shelves, customer service counters-reception, computers, and lights) are visually attractive. (Mean of 3)
- It gives a swift (quick) response to customer requests (Mean of 3.11)

In general it can be concluded that, ETIDI is relatively trying to cop up with customers' expectations with relative to Empathy aspects. The same applies for the availability of modern training/research equipment.

On the contrary, the institute needs to seriously consider the conditions of availing adequate training and bathrooms and avoiding beaurocratic procedures as these are the major areas with highest customer dissatisfaction.



### Nature of individual responses

Here the standard deviation tells how spreads out individual responses are. From the below table, it can be observed that somewhat dispersed responses were given concerning Tangibles (standard deviation of 0.862), which means that the respondents showed somewhat wide-ranging outlook among themselves for this aspect; some rate it at low satisfaction and others at higher satisfaction. Similar result was found for Reliability (0.852) and Empathy (0.898) aspects.

On the other hand individual responses of respondents were observed to be closer to the Mean for the aspects of Responsiveness (0.723) and Assurance (0.729). This means that the respondents have similar outlook among themselves for these aspects.

**Table 16 (b): descriptive statistics on service quality of ETIDI**

<b>Service quality dimensions</b>	<b>Average of Mean</b>	<b>Standard deviation</b>
Tangibles	3.08	0.862
Reliability	3.1	0.852
Responsiveness	3.23	0.723
Empathy	3.5	0.898
Assurance	3.56	0.729

### 4.4 Integration of Results Obtained

So far separate results were discussed on the conditions of QMS principles and service quality in ETIDI. Here the general relation between issues identified in the first and the later are discussed briefly.

Recall that in all the aspects of QMS principles the respondents' satisfaction was measured at a medium level. This somehow explains the negative gap scores in its service quality. For example the institute's limitations in leadership aspects have their own contribution in a higher customer's dissatisfaction in tangible and responsiveness aspects of service quality. When a company is falling short in Leadership, the responsive nature of it to customer requests will also fall short.

The condition where most people do not feel that their importance and contribution (engagement) to the organization is not well accepted has its own contribution that they will not give a reliable service to customers. The condition of unsatisfactory continual improvement in ETIDI has its own contribution in the negative gap scores of responsiveness and reliability

aspects of the service that it provides. In addition, the not good relationship management that ETIDI has with stakeholders has affected its service reliability.

#### 4.5 Pearson's Correlation Analysis

The Pearson's correlation is a measure of the strength and direction of association that exists between two variables measured on at least an interval scale.

It helps to determine the relationship between two variables. Correlation coefficients range from -1.0 (a perfect negative correlation, to +1.0, a perfect positive correlation. The closer correlation coefficients get to -1.0 or 1.0, the stronger the correlation. The closer a correlation coefficient gets to 0, the weaker the correlation is between the two variables.

Below is a summary of the correlation analysis made between Service quality dimensions and customer satisfaction.

**Table 17 (a): Pearson's correlation for service quality and customer satisfaction**

Correlations		Customer Satisfaction
Tangibles	Pearson Correlation	.937*
	Sig. (2-tailed)	.019
	N	36
Reliability	Pearson Correlation	1.000**
	Sig. (2-tailed)	.005
	N	36
Responsiveness	Pearson Correlation	.913*
	Sig. (2-tailed)	.031
	N	36
Empathy	Pearson Correlation	-.313
	Sig. (2-tailed)	.797
	N	36
Assurance	Pearson Correlation	.971
	Sig. (2-tailed)	.154
	N	36

\* Correlation is significant at the 0.05 level (2-tailed)

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

As it can be seen from the results in the above table there is positive and significant relationship between all service quality dimension and customer satisfaction except empathy. The Pearson correlation coefficient,  $r$  for Tangibility and customer satisfaction is 0.937 and that is statistically significant relationship ( $p = 0.05$ ). The Pearson correlation coefficient,  $r$  for Reliability and customer satisfaction is 1 and that is statistically significant relationship ( $p = 0.01$ ). The Pearson correlation coefficient,  $r$  for Responsiveness and customer satisfaction is 0.913 and that is statistically significant relationship. The Pearson correlation coefficient,  $r$  for Assurance and customer satisfaction is 0.971 and that is statistically significant relationship. Only empathy has as such low significance on customer satisfaction.

Most importantly, the correlations are reasonable. Customer satisfaction correlates substantively with almost all other variables. This makes sense because most of the variables reflect as important factors which are likely to contribute to better customer satisfaction.

Pearson's correlation analysis was also made to test the relationship between the ISO9001:2015 (Principles of QMS) and customer satisfaction.

**Table 17 (b): Pearson's correlation for ISO9001 QMS principles and customer satisfaction**

Correlations		Customer satisfaction	
ISO9001 Principles	QMS	Pearson Correlation	-.515*
		Sig. (2-tailed)	.020
		N	108

\* *Correlation is significant at the 0.05 level (2-tailed)*

As can be seen from the above table, the Pearson correlation coefficient,  $r$  for ISO9001 QMS principles and customer satisfaction is -0.515 and that is statistically significant relationship ( $p = 0.05$ ).

It can also be understood that the principles of QMS (Customer focus, Leadership, Engagement of People, Process Approach, Continual improvement, Evidence based decision making and Relationship management) are likely to contribute to better customer satisfaction.

## 4.6 Regression Analysis

In this study, a multiple regression analysis was made to test the extent to which ISO9001 QMS and service quality have an impact on customer satisfaction. Multiple regression analysis is used when it is wanted to predict the value of a variable based on the value of two or more other variables. The variable that is predicted is called the dependent variable and the variables used to predict the value of the dependent variable are called the independent variables (Laerd Statistics , Multiple Regression Analysis using SPSS Statistics, 2018).

**Table 18: Regression model for service quality dimensions and ISO9001QMS principles**

<b>Model Summary</b>				
<b>Model</b>	<b>R</b>	<b>R Square</b>	<b>Adjusted R Square</b>	<b>Std. Error of the Estimate</b>
<b>1</b>	<b>.910<sup>a</sup></b>	<b>.828</b>	<b>.807</b>	<b>.16316</b>
a. Predictors: (Constant), Tangibles, Reliability, Responsiveness, Empathy, Assurance, Customer focus, Leadership, Engagement of people, Process approach, Continual improvement, Evidence based decision making, Relationship management.				

In the table above, the “R” column represents the value of R, the multiple correlation coefficient. R can be considered to be one measure of the quality of the prediction of the dependent variable. (Laerd Statistics , Multiple Regression Analysis using SPSS Statistics, 2018). In this study the dependent variable is customer satisfaction and R value of 0.91 indicates a good level of prediction.

The “R square” column represents the  $R^2$  value (also called the coefficient of determination), which is the proportion of variance in the dependent variable (customer satisfaction) that can be explained by the independent variables (service quality and principles of QMS).

It can be seen in the table from a value of 0.828 that service quality and QMS explain 82.8% of the variability in customer satisfaction which is the dependent variable. This means that ISO 9001 and service quality have a great influence or significant impact on the condition of customer satisfaction.

## 4.7 Summary of Findings

- The findings of the study revealed that the satisfaction level of customers do not match with their expectations. Customers have higher expectations than what they actually experience from ETIDI. All the service quality gap measurements showed a negative result (although most of them are closer to zero value) which is an indication of dissatisfaction.
- The findings of the analysis using the SERVQUAL model revealed that the overall service quality measurement with respect to the service quality dimensions has a negative gap score. The analysis showed that there is a higher dissatisfaction of customers especially on tangible items that the institute acquires and responsiveness nature of the institute. A lesser dissatisfaction of customers is observed empathy and assurance aspects of the service quality.
- The study findings showed that there is a statistically significant effect of ISO9001:2015 on customer satisfaction. As revealed by the study, the ISO9001 explain 82.8% of the variability that occur in customer satisfaction.
- From the findings of the analysis it can be learned that, QMS has achieved more on process standardization than customer satisfaction. In addition, QMS brought a positive effect on the customer focus aspect. But serious improvements are needed in bringing good Leadership, engaging people in the work place, approaches for processes, continual improvements and relationship managements with various stakeholders as all these were significantly measured at a medium level of performance. A good work has been done on Awareness creation of ISO9001:2015 QMS on ETIDI employees but shortfall are observed in accepting and internalizing it as a work culture since a strict adherence to the system has been revealed as one of the deficit.
- The findings of the interviews reveal that QMS has helped ETIDI establish processes and standardize the same. On the contrary, the service quality of the institute is not improved to a level where the management of ETIDI expect it to be.
- Findings from secondary sources showed that, ETIDI has not conducted any prior study concerning ISO 9001QMS influence on service quality improvement and customer satisfaction and this study is the first of its kind. In addition it was learned from various performance reports of ETIDI that no scientific way of evaluating customer satisfaction (for example; use of service quality evaluation models) had been practiced by the Institute.

## CHAPTER - 5

### CONCLUSIONS AND RECOMMENDATIONS

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#### 5.1 Introduction

This chapter presents a summary of the findings, conclusion and recommendations from the results obtained from the research. It also covers implications of the study and suggestions for future work.

#### 5.2 Conclusion

The main purpose of this study was to assess ISO9001:2015 QMS and Service quality and their impacts on customer satisfaction using the major principles of QMS and SERVQUAL model from ETIDI's existing set up. The findings of the study has clearly depicted that both ISO 9001 and Service quality have a significant impact on customers satisfaction of ETIDI. Below are conclusions driven from the findings of the study.

- ETIDI has used ISO9001QMS more on process standardization than customer satisfaction and still there are shortfalls in internalizing and applying it as a work culture by its workforce.
- The lack of strict adherence to the ISO9001QMS and the negative gaps in the service quality has contributed to lesser customer satisfaction in ETIDI.
- With the superior influence that ISO9001QMS has on customer satisfaction, Improved service quality and QMS internalization are very essential for customer satisfaction and retention ability of ETIDI
- If ETIDI cannot cope up with customers' expectations by improving its service deliveries, retaining customers could very difficult to achieve.
- Being able to determine how customers perceive service quality and being able to measure service quality benefits management of service organizations like ETIDI. Measuring service quality helps management to provide reliable data that can be used to monitor, maintain and improve service quality by identifying where the limitations are in delivering service.

- The researcher hopes that the findings of this research can contribute to the improvements in QMS and service quality aspects that ETIDI ought to have in the future.

### **5.3 Recommendations**

- It is recommended that ETIDI better conduct ongoing research on service quality and customer satisfaction to understand the changing customers' satisfaction levels against service offerings, on what should be done and what strategies to be implemented in order to achieve customer satisfaction goals.
- Customer satisfaction strategy can help ETIDI to compare its performances against customer standards and internal processes, industry benchmarks and identify opportunities for improvement.
- It is suggested that ETIDI infrastructures such as inside of buildings, training rooms and bathrooms can be improved both quantity and quality wise.
- The service offerings that ETIDI give should directly relate to what customers expect. An expectation assessment can help in this aspect.
- It is suggested ETIDI provide more training about service quality and its impact to its employees for more understanding of the service offering as this has a direct impact on customers' satisfaction
- It is suggested that recognition and acknowledgement mechanisms well established and strictly followed so that employees can stay motivated.
- It is suggested that for a service organization like ETIDI where many stakeholders show their interest, clear system of sharing information and future plans (electronic systems of common platforms) can be established and strictly adhered.
- When there is a trust and fear issue between management and employees, achieving an institution's goals will be impossible. So ETIDI's management better practice and create a smooth and closer relationship with employees.

### **5.4 Suggestions for Future Research**

- Now a day's many service organizations are implementing ISO9001 QMS. So researches made on this kind of organizations should try to incorporate the impact of this system together with service quality on customer satisfaction rather than only focusing on service quality impact on customer satisfaction.

- A similar study could be conducted with a larger sample size so that results could be generalized to a larger population.
- Similar study is recommended to other areas including the impact of poor support to the customer satisfaction, the impact of regulatory policies to customer satisfaction and the impact of customer retention strategies to the customer satisfaction levels.



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## APPENDIX A – ETIDI EMPLOYEE QUESTIONNAIRE

### Questionnaire

This questionnaire is prepared as an instrument to conduct an academic research for the fulfillment of Masters of Science in Quality and Productivity management at St. Merry University Addis Ababa. The main objective of the research is to assess **the impact of ISO9001:2015 Quality Management System on service quality and customer satisfaction in the case of Ethiopian Textile Industry Development Institute**. The information retrieved from this questionnaire will only be used for the academic research purpose. Please take few minutes from your priceless time to filling the questionnaire.

Name: - Genet Assefa

Phone no 0927435649

Email genet.assefa1985@gmail.com

Thank you for your collaboration

### Part 1: General information

- **Sex**

- A) Male
- B) Female

- **Age**

- A) Below 25 years
- B) 26-35 years
- C) 36-45 years
- D) 46-55 years
- E) Above 55 years

- **Educational level**

- A) Diploma
- B) BSC/BA
- C) MSC/MBA
- D) PHD

- **Position**

- A) Expert
- B) Senior staff
- C) Middle management
- D) Top management

- **Experience**

- A) Below 2 years
- B) 3-5 years
- C) 6-8years

- D) 9-11years
- E) Above 12 years

**Part 2: ISO9001:2015, service quality and customer satisfaction relation**

*(You can put more than one checkmark whenever required)*

1. Which ISO standard do you know very well?
  - ISO 9000:2005
  - ISO 9001:2008
  - ISO 9001:2015
  - ISO 9001:2022
  - I don't know
  
2. How do you know?
  - By training
  - By education
  - By reading
  - Other
  
3. In which ISO 9001 QMS does the Ethiopian textile industry development institute (ETIDI) is certified with?
  - ISO 9000:2005
  - ISO 9001:2008
  - ISO 9001:2015
  - ISO 9001:2022
  - I don't know
  
4. What kind of change has QMS brought to ETIDI?
  - Improve work system
  - Improve work culture
  - It only establishes Process and procedures
  - Insignificant change
  
5. In your opinion, what effect has ISO 9001: QMS brought to the organization?
  - It improved service quality and customer satisfaction
  - It reduced service delivery time
  - It created better working environment
  - It has insignificant effect

6. How do you see the relation between ISO 9001 QMS with service quality of your organization and customer satisfaction?

ISO 9001 QMS has improved service quality and customer satisfaction

ISO9001QMS has improved only service quality

ISO9001QMS has improved only customer satisfaction

No relation between them

### Part 3 Principles of ISO9001:2015QMS

**Direction: - Please rate how strongly you agree or disagree with each of the Following statements by placing a check mark in the appropriate box.**

Your satisfaction rate may be

1. Very Low (VL)
2. Low (L)                      3. Medium (M)                      4. High (H)                      5. Very High (VH) , then put (√)  
from the choice that indicates your satisfaction rate

**Table 19: Questionnaire for ETIDI Employees**

SN	Principles of ISO9001:2015QMS	Rating				
		VL(1)	L(2)	M(3)	H(4)	VH(5)
<b>Customer focus</b>						
1.	ETIDI Identifies its customers					
2.	ETIDI clearly Identifies its customers' needs and requirement					
3.	ETIDI Translates customers requirement into standard					
4.	ETDI Establishes clear process					
5	ETIDI strictly adheres to the established processes					
<b>Leadership</b>						
1.	Management Establishes a vision, goals and target					
2.	Management Establishes trust and eliminates fear					

SN	Principles of ISO9001:2015QMS	Rating				
		VL(1)	L(2)	M(3)	H(4)	VH(5)
3.	Management Provides people with required resource and training					
	<b>Engagement of people</b>					
1.	Employees understand their importance, contribution and role in the organization					
2.	Employees accept when problems occur, know their responsibility and take action for solving them					
3.	Employees evaluate their performance against their personal goals and objectives					
4	Employees actively seek opportunity to enhance their competence, knowledge and experience.					
5	People openly discuss problems and issues.					
<b>Process approach</b>						
1	The institute Key activities are defined					
2	Responsibility and accountability mechanism is established for managing key activities					
3	Key activities are analyzed and measured					
4	Focus is given on factors to improve key activities					
<b>Continual Improvement</b>						
1.	Employees are provided with training in the methods and tools of continual improvement					
2.	System improvement is continually made					
3.	Improvements are recognized and acknowledged					
<b>Evidence based decision making</b>						
1.	The condition whether data and information are sufficiently accurate and reliable is ensured.					
2.	Data is made accessible to those who need it					

SN	Principles of ISO9001:2015QMS	Rating				
		VL(1)	L(2)	M(3)	H(4)	VH(5)
3.	Data and information are analyzed by using valid methods					
4.	Decision making and taking action are based on factual analysis, and balanced with experience and intuition.					
<b>Relationship management</b>						
1.	Key stakeholders are identified and selected.					
2.	There is Clear and open communication with stakeholders					
3.	Information and future plans are shared with stakeholders.					

**Part 4: Organization and customer relation** (You can put more than one checkmark whenever required)

- Implementation of ISO9001:2015 QMS has helped ETIDI achieve service quality and customer satisfaction when compared with before implementation.  
A) Strongly disagree    B) Disagree    C) I cannot say    D) Agree    E) Strongly agree
- How is customer feedback system handled in your organization?  
Training feedback form   
Online review and rating   
Social media comment   
Customer satisfaction survey   
No customer feedback system
- Does customer feedback system help your organization in improving service quality and customer satisfaction? If Yes, How?  
-----  
-----  
-----  
-----.

**Part 5: Performance measurement** (You can put more than one checkmark)

- When does your organization measure and evaluate employee performance?  
Monthly  Quarterly  Half year  yearly
- How are employee performances evaluated?  
By setting standards



- By asking question
- By specific goals
- By comparing
- No performance evaluation
3. Is there any performance acknowledgment system for employees?  
Yes  No
4. If your answer to the above question is yes, how do you evaluate the acknowledgment system that is set to in motivating employees strive towards organizational goal achievement?  
Excellent  very good  good  poor
5. What is the importance to measure and evaluate employee performance?  
To help employees better understand what is expected of them   
To understand the employee strength and weakness   
To give helpful feedback to employees   
No importance
6. What kind of programs does the institute give for employee?  
Training and skill development program   
Scholarship   
No program

## APPENDIX B – ETIDI CUSTOMERS QUESTIONNAIRE

### Questionnaire

This questionnaire is prepared as an instrument to conduct an academic research for the fulfillment of Masters of Science in Quality and Productivity management at **St. Merry University Addis Ababa**. **The main objective of the research is to assess the level of service quality and customer satisfaction in the case of Ethiopian Textile Industry Development Institute**. The information obtained from this questionnaire will only be used for the academic research purpose. Please take few minutes from your priceless time to filling the questionnaire.

Thank you for your collaboration.

Genet Assefa

Tel: 0927435649

Gmail: genet.assefa1985@gmail.com

### Part I. General Information

Direction: Please put a check mark in the appropriate box

1. Sex: Male  Female
2. Age: 18-29  30-40  41-50  Above50
3. Educational level: High school  Diploma/10+   
Degree  Masters /Above

### PART II. Service quality measurement

The questioner has two parts; Expectation and **Experience or perception**.

**2.1 Your EXPECTATION of ETIDI: The following part deals with your opinion of Ethiopian textile industry Development Institute (ETIDI).Please show the extent to which you think ETIDI ‘should’ possess the following features.**

Direction: - Please rate your level of agreement with the following statements by placing a check mark in the appropriate box.

Your agreement level may be

3. Very Low (VL)

4. Low (L)            3. Medium (M)    4. High (H)            5. Very High (VH)

**Table 20: Questionnaire for ETIDI Customers Expectations**

S.N	Statements	Rating				
		VL (1)	L (2)	M (3)	H (4)	VH (5)
<b>SECTION 1 (Your Expectation)</b>						
1	ETIDI needs to have modern training/research equipment					
2	Its physical facilities (shelves, customer service counters-reception, computers, and lights) need to be visually attractive.					
3	It needs to have clean and adequate bathroom					
4	It needs to have adequate training rooms					
5	Overall appearance of building and facilities should look nice					
6	Its employees should have professional appearance					
<b>SECTION 2 (Your Expectation)</b>						
1	ETIDI must provide a service at a time it set out to provide					
2	It must provide the required service exactly at the first time					
3	The experts must show dedication to solve customer issues					
<b>SECTION 3 (Your Expectation)</b>						
1	ETIDI experts must tell to customers the exact time a service will be performed					
2	It should give a swift (quick) response to customer requests					
3	The experts should always be willing to assist customers					
4	The experts should make information easily available to customers.					
5	ETIDI should not have lengthy and beurocratic procedures to respond					

S.N	Statements	Rating				
		VL (1)	L (2)	M (3)	H (4)	VH (5)
	to customer request					
<b>SECTION 4 (Your Expectation)</b>						
1	ETDI experts should give individual attention and care to customers					
2	The experts should understand the specific needs of customers					
3	Its experts need to have their customers interests at heart					
<b>SECTION 5 (Your Expectation)</b>						
1	ETIDI experts should have the knowledge to answer to all questions of the customer					
2	The experts should have the ability to inspire trust and confidence in customers					
3	The experts should treat customers with respect and politeness					

**1.2 Your PERCEPTION/EXPERIENCE with ETIDI: - The following statements deal with the perceptions of service experienced. Please, show the extent to which these statements reflect your perception or view of service in ETIDI**

Your agreement level may be,

1. Very Low(VL)
2. Low (L)      3. Medium (M)      4. High (H)      5. Very High(VH)

**Table 21: Questionnaire for ETIDI Customers Perceptions**

S.N	Statements	Rating				
		VL	L	M	H	VH
<b>SECTION 1 (Your actual Experience)</b>						
1	ETIDI has modern training/research equipment					
2	Its physical facilities (shelves, customer service counters-reception, computers, and lights) are visually attractive.					
3	It has clean and adequate bathrooms for its customers					
4	It has adequate training rooms					
5	Overall appearance of building and facilities look nice					
6	Its employees have professional appearance or look					
<b>SECTION 2 (Your actual Experience)</b>						
1	ETIDI provides a service at a time it set out to provide					
2	It provides the required service exactly at the first time					
3	Its employees are dedicated to solve customer issues					
<b>SECTION 3 ((Your actual Experience)</b>						
1	ETIDI experts tell customers the exact time the service they require will be performed					
2	It gives a swift (quick) response to customer requests					
3	The experts are always willing to assist customers					
4	The experts make information easily available to customers.					
5	ETIDI does not have lengthy and beaurocratic procedures to respond to customers request					
<b>SECTION 4 (Your actual Experience)</b>						
1	ETDI experts give individual attention and care to customers					

S.N	Statements	Rating				
		VL	L	M	H	VH
2	The experts understand my specific needs					
3	The experts have their customers interests at heart					
<b>SECTION 5 (Your actual Experience)</b>						
1	ETIDI experts have the knowledge to answer to all customer questions					
2	The experts have the ability to inspire trust and confidence in customers					
3	The experts treat customers with respect and politeness					

# APPENDIX C – ETIDI CUSTOMERS SATISFACTION SURVEY RESULT OF 2017 AND 2020

## መግቢያ

የኢትዮጵያ ጨርቃጨርቅ ኢንዱስትሪ ልማት ኢንስቲትዩት ከተቁዋቁዋመባቸው አላማዎች በዘርፉ የተስማሩ ባለሀብቶችን የማማከር፣የስልጠና የመስጠት ፣የገበያ ማፈላለግ ፣የጥናት እና ምርምር ስራዎችን በመስራት አገሪቱ ከዘርፉ ማግኘት ያለባትን ጥቅም እንደታገኘ ነው።

ኢንስቲትዩት የሚሰጠው አገልግሎት በአንድ በኩል (One dimensional) አይደለም፤ሊሆንምአይገባም።ይልቁንም ከብዙአቅጣጫ የሚወጣ ሆኖ ወደ ብዙአቅጣጫም የሚፈስ ይሆናል።ምክንያም የኢንስቲትዩት ቀጣይነት በደንበኞች ላይ የተመሰረተ ስለሆነ ነው።

ይህ ሪፖርትም ኢንስቲትዩት ከተቁዋቁዋመባት አላማ አንፃር ደንበኞች እርካታን ምን ያህል አሳክተዋል በሚል የተስራ የዳሰሰ ጥናት ነው። ጥናቱም ተሰራው በ 2009 (ከ ጥራት ስራ አመራር ትግበራ በፊት) እና 2012 (ከጥራት ስራ አመራር ትግበራ በኋላ) ላይ ነው

## ዓላማ

የዚህ መጠይቅ ዋና አላማ ኢንስቲትዩቱ ከሚሰጠው አገልግሎት አንጻር የተሰጡ አስተያይቶችን በመሰብሰብ የታዩ ክፍተቶችና ለሚቀጥለው እንቅፋትሊሆኑ የሚችሉ ነገሮችን ለማስወገድ እንዲሁም ጥንካሬን ለማየትነው።

## አስፈላጊነት

- ✚ የደንበኞችን ፍላጎትለማወቅ ከፍተኛ ጥቅምይኖረዋል፤
- ✚ የነበሩ ክፍተቶች ዳግመኛ እንዳይከሰቱ ለማምከን ወሳኝ ሚና ይኖረዋል፤

## በመጠይቁየተካተቱአካላት

መጠይቁ ስምንት ጥያቄዎችን የያዘ ሲሆን ሀምሳ ዘጠኝ ሠዎችበመጠይቁ ተካትተዋል።የመጠይቁ ቅርፅ ምርጫ ሲሆን በምርጫውም ከፍተኛ፣መካከለኛ፣ገለልተኛና ዝቅተኛ የሚሉ ምርጫዎች ተካትተዋል።በዚህምመሰረት የተገኘው ውጤት በሚቀጥለው ዘንጠረዥ በዝርዝር ቀርቧል።

**የመጠይቅውጤት**

ተ.ቁ.	ክብደት	በፕሮሰንት (2009)	በፕሮሰንት (2012)
1.	ክፍተኛ	15	23.31
2.	መካከለኛ	60	55.08
3.	ገለልተኛ	5	10.6
4.	ዝቅተኛ	20	11.02

# ስሌቱ የጥያቄው ብዛት ምላሽ በሰጡ ሰራተኞች ተባዥቶ የተቀመረ እንደሆነ ይታሰባል!

**ማጠቃለያ**

በዚህ ጥናት ዋና ዓላማ የደንበኞችን የእርካታ መጠን ማወቅ እና አስፈላጊውን እርምጃ መውሰድ ነው። በዚህም ኢንስቲትዩት የሚሰጠው አገልግሎት ደንበኞችን ያሳተፈመሆን ይኖርበታል። ይህ ሳይሆን ከቀረ ግን ክፍተት (Communication Break/ gap) ተፈጥሯል ማለት ነው። ስለሆነም ከላይ በተፈጠሩ ሁለትትላልቅ ሁኔታዎች ላይ የነበሩ ስራ ሙሉ በሙሉ ደንበኞችን ያረካ እንዳልነበረና ሊደፈኑ የሚገቡ ክፍተቶች እንደነበሩ ይህ ጥናት ያመለክታል። በተለይም ዝቅተኛ ከተሰጠባቸው ጥያቄዎች ላይ ክፍተኛ ትኩረት በመስጠት መስራትና ክፍተቶችን ማረም ለነገ የማይበል ስራ እንደሆነ ጥናቱ ያመለክታል።



## APPENDIX D – ETIDI CUSTOMERS SATISFACTION SURVEY QUESTIONNAIRE

Ethiopian Textile Industry Development Institute aimed to facilitate the development and transfer of technologies of cotton, textile and apparel industries, and enable industries to become competitive in global market. Considering this, the institute prepared questionnaire for customers’ satisfaction survey. Since you are part of our customer, please *take five minute* from your priceless time and put your satisfaction rate below.

Thank you for your collaboration!

Your satisfaction may

- 5. Highly dissatisfied
- 6. Not satisfied
- 7. Neutral
- 4. Satisfied
- 5. Highly satisfied, then put (√) from the choice that indicates your satisfaction rate.

### ***I. Institutional questions***

S/N	Service delivery	Satisfaction rate					Remarks
		1.	2	3	4	5	
1.	Tangible information supply and transparency						
2.	Technical support						
3.	Consultancy service						
4.	Capacity building service						
5.	laboratory and testing service						
6.	Systems like kaizen, QMS and others						
7.	Marketing support						
8.	Research and survey study support						
9.	Other followup and supports						

## ***II. Questions about Staff Quality***

1. Very low  
2. Low  
3. Medium  
4. High  
5. Very High

S/N	Service delivery	Satisfaction rate					Remarks
1.	Immidiata response	1	2	3	4	5	
2.	Knowlege, attitude, skill and interaction						
3.	Service delivery according to standard						
4.	Sense of responsibility						
5.	Honesty						

If any more comment which is essential to improve our quality service, to meet your need and expectation, to improve responsiveness and to provide other relevant service

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Signature: \_\_\_\_\_

date: \_\_\_\_\_