

# TQM ADOPTION EFFECTS ON AN ORGANIZATIONAL PERFORMANCE – A CASE STUDY ON BAHIR DAR TEXTILE SHARE COMPANY

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## **Abstract**

*The purpose of this study is to assess the effect of total quality management on organization performance in Bahir Dar Textile Share Company. Specifically, the study examines the variables product quality, operational quality and customer service quality that has their effect on organization performance. This study is conducted on explanatory design of research. The study employs stratified with simple random sampling technique to select the sample respondents. Findings indicate that product quality followed by customer service quality and operational quality have a significant positive effect on organization performance.*

## **Keywords:**

*Total Quality Management, Organization Performance, Operation Quality, Customer Service Quality*

## **1. INTRODUCTION**

The concept of Total quality management is about a management approach that is centered on quality, and it is based on the participation of people within an organization with the fundamental aim at a long term success [38].

However, the literature does not seem to agree on a universal framework for the implementation of TQM philosophy, some common elements which play a vital role in the success of the TQM program can be identified. These elements include; top management commitment, identification of customer and their requirements, process review, gap analysis, employee training and development, monitoring of the process, measurement of the process and establishing the feedback system [33].

Most of developing countries' enterprises like brewery, textile, sugar, flour, and other agro-processing industries are very low in their productivity as compared to other developing and developed nations as mentioned on UNIDO, Vienna, 2004 [2].

The main rationality of this study will be to solve the problem that renders a company inefficient to make organized plans that help to identify the root cause of quality management related problems and provide immediate solution for them, and thereby, improve the practice of total quality management in the organization [1] [3] - [5].

Previous research studies have focused mainly on the impact of implementing total quality management on some performance factors such as design performance, financial performance, operating performance, supplier relationship, etc. Research conducted in Kenya focused on the part of top management involvement, customer focus and employee involvement in the K-rep development agency's TQM implementation process. The finding of this study suggests that the independent variable which include customer focus, top management involvement and employee involvement are part of the K-rep development agency's TQM implementation process. Each independent

variable not only influenced dependent variable but also complement each other as well [25] [8].

The conjecture of how and why TQM works is a paramount matter for the organizations survival, competition, quality, and improvement. So, with the finding of this study, the managers could easily choose the TQM dimension that would best fit their organizational context to bring about business excellence [11].

## **1.1 RESEARCH OBJECTIVES**

The general objective of this study is to assess the effect of total quality management practice on organizational performance in Bahir Dar Textile Share Company.

The specific objective of this study is:

- To investigate the effect of product quality on organization performance in Bahir Dar Textile Share Company;
- To analyze the effect of operational quality on organization performance in Bahir Dar Textile Share Company; and
- To identify the effect of customer service quality on organization performance in Bahir Dar Textile Share Company.

## **1.2 RESEARCH QUESTIONS**

This study answers mainly the following questions:

- What is the effect of product quality on organizational performance of Bahir Dar Textile Share Company?
- How operational quality affect the performance of Bahir Dar Textile Share Company?
- What is the effect of customer service quality on organization performance of Bahir Dar Textile Share Company?

## **2. REVIEW LITERATURES**

### **2.1 HISTORY OF QUALITY MANAGEMENT**

During the World War II, the need to improve quality in the production of armaments and other items for defense, stimulated further development of sampling and process control. Two of Shewart's students, Joseph Juran and W.E. Deming, helped develop quality from quality control into quality management. Juran's Quality Control Handbook, written in 1951, provided the most comprehensive reference to quality, and is relevant even today [12]. Despite this knowledge, however, few companies in the USA adopted these approaches to quality [36].

Today, new variants on quality, including quality awards and quality certification systems are widely promoted as the new keys to organizational success. But, their long-term worth has yet to be proved. There are as many success stories as there are stories of failure [36] [13] [14].

## 2.2 THEORIES AND PRINCIPLES OF TOTAL QUALITY MANAGEMENT

### 2.2.1 Deming's Theory:

As cited by M. Ngambi and A. Nkemkiafu [27], in his theory of Total Quality Management, Deming identified fourteen points of management. He also developed a system of "profound knowledge" which consists of the following four points:

- *System Appreciation* - an understanding of the way a firm's processes and systems work;
- *Variation Knowledge* - an understanding of the variation occurring and the causes of the variation;
- *Knowledge Theory* - the understanding of what can be known;
- *Psychology Knowledge* - the understanding of human nature from the aforementioned points of view.

In order to help managers, improve the quality of their organizations, Deming has offered the following 14 management principles [27]: Constancy of purpose, New philosophy, Cease dependence on inspection, End 'lowest tender's contracts, Improve every process, Institute training on the job, Institute leadership, Drive out fear, Break down barriers, Eliminate exhortations, Eliminate targets, Permit pride of workmanship, Encourage education, and Inculcate top management commitment.

### 2.2.2 Juran's Theory:

Joseph Juran is responsible for what has become known as the Quality Trilogy. The quality trilogy is made up of quality planning, quality improvement, and quality control. If a quality improvement project is to be successful, then all quality improvement actions must be carefully planned out and controlled [27].

The following are Juran's 10 Quality improvement steps [27]: Build awareness of the need and opportunity for improvement, Set goals for improvement, Organize to reach the goals (establish a quality council, identify problems, select projects, appoint teams, designate facilitators), Provide training, Carry out projects to solve problems, Report progress, Give recognition, Communicate results, Keep score, Maintain momentum by making annual improvement a part of the regular systems and processes of the company [16] - [18].

### 2.2.3 Crosby's Theory:

As cited in Ngambi and Nkemkiafu [27], according to Crosby, quality is conformance to requirement and can only be measured by the cost of non-conformance. Crosby provides four absolutes and 14 steps for the quality improvement process for continuous increase in quality [20]. They are:

- *Management commitment*: to make it clear where management stands on quality.
- *Quality improvement team*: to run the quality improvement process.
- *Measurement*: to provide a display of current and potential nonconformance problems in a manner that permits objective.
- *Cost of quality*: to define the ingredients of the cost of quality (COQ) and explain its use as a management tool.

- *Quality awareness*: to provide a method of raising the personal concern felt by all employees toward the conformance of the product or service and the quality reputation of the company.
- *Corrective action*: to provide a systematic method for resolving forever the problems which are identified through the previous action steps.
- *Zero defects*: to examine the various activities that must be conducted in the preparation for formally launching zero-defects day.
- *Employee education*: to define the type of training all employees need to actively to carry out their role in the quality improvement process.
- *Planning and zero-defects day*: to create an event that will let all employees realize, through a personal experience, that there has been a change.
- *Goal setting*: to turn pledges and commitments into action by encouraging individuals to establish improvement goals for themselves and their groups.
- *Error-cause removal*: to give the individual employee a method to inform the management on the situations which make it difficult for the employee to meet the pledge to improve.
- *Recognition*: to appreciate those who participate.
- *Quality councils*: to bring together the appropriate people to share quality management information on a regular basis.
- *Do it all over again*: to emphasize that the quality improvement process is continuous.

### 2.2.4 Feigenbaum's Approach to TQM:

As cited in Zhang [42], TQM is defined as: An effective system for integrating the quality development, quality-maintenance, and quality-improvement efforts of the various groups in a firm so as to enable marketing, engineering, production, and service at the most economical levels which allow for full customer satisfaction. He claimed that effective quality management consists of four main stages, which are as follows:

- Setting quality standards;
- Appraising conformance to these standards;
- Acting when standards are not met;
- Planning for improvement in these standards.

### 2.2.5 Ishikawa's Approach to TQM:

Zhang [42] argued that quality management extends beyond the product and encompasses after-sales service, the quality of management, the quality of individuals, and the firm itself. He claimed that the success of a firm is highly dependent on treating quality improvement as a never-ending quest. A commitment to continuous improvement can ensure that people will never stop learning. He advocated employee participation as the key to the successful implementation of TQM.

According to Zhang [42], Ishikawa's concept of TQM contains the following six fundamental principles;

- Quality first-not short-term profits first;
- Customer orientation-not producer orientation;

- The next step is your customer-breaking down the barrier of sectionalism;
- Using facts and data to make presentations-utilization of statistical methods;
- Respect for humanity as a management philosophy, full participatory management;
- Cross-functional management.

### 2.3 THE NEED OF TQM IMPLEMENTATION IN MANUFACTURING FIRMS

As cited in Khalid et al. [21], the majority of successful manufacturing companies have adopted TQM techniques and acknowledged its intangible contribution. However, the importance of TQM practices as an effective pillar of corporate strategy for achieving manufacturing excellence cannot be denied. The concept of manufacturing excellence is regarded as the path to become the best manufacturer. Many researchers, while developing their frameworks have considered TQM as a key element for achieving manufacturing excellence.

Rapid developments in international competition have obliged textile enterprises to take new approaches in order to gain a competitive advantage. The limits of acceptable quality levels for the enterprises have fallen back down to critical points due to the effects of liberal policies in international markets. Total Quality Management (TQM) keeps vital role in improving productivity, product quality and reduces manufacturing cost by reducing rework and scrape [37].

The reason of implementing TQM practices is to improve customer satisfaction, quality of products and/or services, productivity, capacity of the production line, employee performance, quality-of-work-life, market share, and competitive position. Another reason is for reducing production development time, waste of inventory, work in process, cost, delivery times, employee turnover, and complaints [30].

#### 2.3.1 Product Quality:

All organizations began their quality management efforts with a focus on product quality. At the first introduction of a product, this is necessarily a definition of product quality from the producer's point of view. Since the product is unknown to the customers, the customers have little input as to the definition of quality. They may be surveyed for needs and wants, but in the case of a truly new product their inputs are ambiguous and somewhat vague [19].

#### 2.3.2 Operational Quality:

As cited in Truong et al. [39], Operational quality refers to the ability of a company to reduce management costs, order cycle time – meet orders, and to improve the efficient use of raw material and distribution capacity [23]. Operational performance has an important meaning to firms, it improves effectiveness of production, creates high quality products, customers are more satisfied, and leads to the increase in revenue and profit for companies [24] [26] [28].

#### 2.3.3 Customer Service Quality:

Service can be defined as any primary or complementary activity that does not directly produce a physical product-that is, the non-goods part of the transaction between buyer (customer)

and seller (provider). A service might be as simple as handling a complaint or as complex as approving a home mortgage.

### 2.4 RELATIONSHIP BETWEEN TQM PRACTICE AND ORGANIZATION PERFORMANCE

As cited in Bavarsad et al. [7], in the past decade we observed a considerable expansion in the use of TQM practices in manufacturing and non-manufacturing corporations. As competition increased, the firms tried to create a competitive margin in their processes and production operations. This indicates that the use of TQM practices has a synergic effect on organizational performance. In addition, the firms' pioneering in the use of TQM practices would increase their ability to improve performance. Recent empirical evidence shows direct and indirect relationships between TQM practices adaptation and organizational performance levels [29]. Deming [22] suggests that higher quality points to lower costs and higher productivity, which in turn leads to bigger market share and elevated competitiveness.

According to Gharakhani et al. [15], several authors have claimed that an important part of ensuring that TQM leads to sustained improvements in organizational profitability is that direct quantitative measures of manufacturing are used to assess the effectiveness of managers' efforts to manage the development and implementation of TQM programs.

The principles of Total Quality Management were obtained with such a view that its establishment has significant impact on the organizational performance. Research has shown that organizations that successfully deal with the implementation of Total Quality Management have better and effective performance [31].

## 3. MATERIALS AND METHODS

### 3.1 RESEARCH DESIGN

This study uses explanatory research design. As cited and explained in Chepkech [10] and Sajjad and S. Amjad [32], an explanatory research design is one which collects data in order to test hypothesis or to answer research questions concerning the current status of the subject under the study. Also, this study uses mixed approach of research because this approach counteracts the weakness in both quantitative and qualitative research approach.

### 3.2 TARGET POPULATION OF THE STUDY

Bahir Dar Textile Share Company currently has a total number of 1387 employees working in different departments. From those employees the target population for this study will be 1371 employees deployed in seven different departments, namely General Process Administration and Legal Service, Production, Purchasing and Property Administration, Sales and Marketing, Finance, Human Resource Development, and Engineering.

### 3.3 SAMPLING TECHNIQUE

This study uses stratified sampling technique. According to Dattalo [12], this type of sampling involves the use of groups to achieve representativeness, or ensures that a certain number of elements from each group are selected. In a stratified sample, the

sampling frame is divided into non-overlapping groups or strata. In this study the researcher divides the employees based on their departments. Then a random sample is drawn from each stratum.

### 3.4 SAMPLE SIZE DETERMINATION

As per [34] [35], which is revised on April 2009 and again on June 2012, a simplified formula is derived to calculate sample size. So, from those several methods for determining sample size, Yamane formula is used in this study because this formula can be used to determine the minimal sample size for a given population size.

The formula from Yamane is:

$$n = N/(1+N(e)^2)$$

where,  $n$  = sample size,  $N$  = total population,  $e$  = level of precision at 95% confidence level,

So, the sample size will be

$$n = 1371/(1+1371(0.05)^2)$$

$$n = 309.655$$

$$\approx 310$$

So, based on their proportion the sample was drawn as below (Table.1).

Table.1. Sample Size Determination

Department	No. of employees	Samples Taken
General process administration and legal service	7	2
production department	1153	261
Purchasing and property administration	13	3
Sales and marketing	18	4
Finance	21	5
Human Resource Development	95	21
Engineering	64	4
Total	1371	310

### 3.5 DATA SOURCE AND COLLECTION TECHNIQUE

In this study both primary and secondary sources of data are used to get an in-depth data. A primary data source was collected by using self-administered questionnaire in a form of a Likert scale. And a secondary data source was collected by viewing the organization annual reports and documents.

### 3.6 DATA ANALYSIS AND PRESENTATION

The collected data is analyzed using Regression Method of Analysis. The Pearson correlation analysis is also applied in the study to assess the strength of relationship between dependent and independent variables.

Multiple regression analysis is also applied to test the association of variables with each other and the extent of variance in the independent variable as a result of unit change in the independent variables. Statistical package for social science

(SPSS version 20) is used to process data because the researchers has know-how to apply this version and subsequently the data is presented using graphs, charts, and tables.

### 3.7 MODEL SPECIFICATION

The multiple regression model that is used in this study is;

$$y = \alpha + \beta_1x_1 + \beta_2x_2 + \beta_3x_3 + \varepsilon$$

where,  $y$  - organization performance,  $\alpha$  - constant of proportionality,  $\beta$  - coefficient term of independent variables,  $x_1$  - product quality,  $x_2$  - operational quality,  $x_3$ -customer service quality and  $\varepsilon$  - error term [39] - [42]

## 4. DATA ANALYSIS PRESENTATION AND INTERPRETATION

The statistical package for social sciences (SPSS) has been used to analyze the data.

### 4.1 RELIABILITY TEST

Table.2. Reliability Statistics

Cronbach's Alpha	N of Items
0.794	4

The Cronbach's alpha value of factors is found to be 0.794 which is greater than the acceptable value of 0.7. The alpha value clearly shows that the measurement variables of the study are reliable enough to measure the factor they are supposed to.

### 4.2 DEMOGRAPHIC CHARACTERISTICS OF THE RESPONDENT

The obtained data shows that 66.3% (187) of the total number of respondents (282) are male, while the remaining 33.7% (95) are female. This shows that the majority of the respondents were males. Coming to the age factor, 25.9% (73) of the respondents are under the age of 25, while 68.4% (193) respondents are between the age of 26 and 35, and the remaining 5.7% (16) are between the age group 36 and 45. This shows that majority of the respondents are under the age limit of 26-35. The data on educational background shows that 29.8% (38) of the respondents have completed secondary school, 62.1% (175) have college level diploma, and the other 8.2% (23) are first degree holders. So, we can conclude that majority of the respondents are college diploma holders. Concerning the work experience from the total respondents 56% (158) are in the service of the company for 1 to 5 years, 39.7% (112) have served between 6 and 10 years, and the remaining 4.3% (12) are with the company for about 11 to 15 years. This data shows that majority of the respondents have experience between 1 and 5 years, which is considerably long period to provide significant information about the company.

### 4.3 DESCRIPTIVE STATISTICS OF THE STUDY VARIABLES

The mean statistical value approaching were based on the following assumptions; if the mean value is between (0 to 1.5) this implies the respondents strongly disagreed, if the mean value is between (1.50 to 2.50) it indicates the respondents disagreed, the

mean value between (3.50 to 4.50) implies the respondents agreed and a mean value which is 4.50 and above shows that the respondents strongly agree. Therefore, the descriptive statistics is analyzed based on these assumptions. The percent and average mean results with respect to all the components of the independent variables and the dependent variables are presented, analyzed, and interpreted as follows:

**4.3.1 Descriptive Statistics of Product Quality:**

Table.3. Descriptive statistics of product quality

Items	N	Percentage			Mean
		Neutral	Agree	Strongly agree	
Performance of the company’s product has effect on organization performance	282	2.1	47.2	50.7	4.49
Probability of a product’s surviving over a specified period of time under stated condition of use has effect on organization performance	282	0.4	50.4	49.3	4.49
Amount of use one gets from a product before it physically deteriorates has effect on organization performance	282	2.1	47.5	50.4	4.48
The ability to repair a product quickly and easily has effect on organization performance	282	1.8	47.9	50.4	4.49

Source: Survey Data 2017

Based on the data 50.7% of the respondents with a mean value of (4.49) ‘strongly agree’, it is inferred that the performance the company’s product has effect on organization performance. 47.2% of the respondents agree, and the remaining 2.1% remain neutral. From this it can be concluded that the performance of the company’s product has effect on the organization performance.

The respondents agreed on the probability of a product’s survival over a specified period under stated conditions of use has effect on organization performance which is 50.4% with a mean value of (4.49). The other 49.3% and 0.4% was strongly agreed and neutral on the given statement. Standing from this it is possible to conclude that the probability of a product’s surviving over a specified period under stated conditions has effect on the organization’s performance.

A 50.4% of respondents with a mean of 4.48 strongly agree on the durability of a product before it physically deteriorates has effect on organization performance. Other 47.3% and 2.1% of the respondents agreed and remained neutral respectively. From this, we can conclude that amount of use one gets from a product before it physically deteriorates has an effect on organization performance.

On the other hand, on the illustration ability to repair a product quickly and easily has effect on organization performance, 50.4%

with a mean value of 4.49 strongly agreed, whereas the remaining 47.9% and 1.8% is regarded as agreed and neutral, respectively. This implies that the ability to repair a product quickly and easily has effect on the organization performance.

**4.3.2 Descriptive Statistics of Operational Quality:**

Table.4. Descriptive statistics of Operational quality

Items	N	Percentage				Mean
		Disagree	Neutral	Agree	Strongly agree	
Company’s waste reduction has an effect on organization performance	282	-	0.4	50.4	49.5	4.49
Reduced management cost has an effect on organization performance	282	1.1	6.7	51.4	40.8	4.32
Efficient use of raw material has effect on organization performance	282	-	0.4	51.1	48.6	4.48
Distribution capacity of the company has effect on organization performance	282	1.1	6.7	51.8	40.4	4.32

Source: Survey Data 2017

From the total respondents 50.4% agreed with a mean value of 4.49 on company’s waste reduction has effect on organization performance. The other 49.5% of the respondents strongly agreed and the remaining 0.4% remained neutral.

This data shows that majority of the respondents agreed on company’s waste reduction has effect on organization performance.

The respondent also agreed on reduced management cost has an effect on organization performance which is 51.4% with a mean value of (4.32). The other 40.8% was strongly agreed, 6.7% remain neutral and 1.1% of the respondents were disagreed. From this it is possible to say that reducing management cost has an effect on the performance of the organization.

A 51.1% of the respondents with a mean value of (4.48) agreed on the efficient use of raw material has effect on organization performance. 48.6% was strongly agreed and the other 0.4% of the respondents remains neutral. This implies that most of the respondents agreed on the efficient use of raw material have effect on organization performance.

Most of the respondents agreed that distribution capacity of the company has effect on the organization’s performance by 51.8% with a mean value of (4.32). The other respondents strongly agreed (40.4%), neutral (6.7%), and disagree (1.1%).

This means that the distribution capacity has effect on organization performance.

#### 4.4 DESCRIPTIVE STATISTICS OF CUSTOMER SERVICE QUALITY

Table.5. Descriptive Statistics of Customer Service Quality

Items	N	Percentage				Mean
		Disagree	Neutral	Agree	Strongly agree	
How much reliable the service provider has effect on organization performance	282	0.4	3.2	57.1	39.4	4.35
Accessibility and convenience of the service providing has an effect on organization performance	282	0.7	2.5	56.7	40.1	4.36
Responsiveness of service providing has effect on organization performance	282	-	0.4	50.7	48.9	4.49
Completeness of the service has effect on organization performance	282	-	6	63.1	30.9	4.25
Consistency of the service has an effect on organization performance	282	-	0.7	51.8	47.5	4.47

Source: Survey Data, 2017

The data shows that the respondent agreed that the reliability of the service provider has effect on organization performance which is 57.1% with a mean value of (4.35). The other 39.4%, 3.2% and 0.4% strongly agree, remained neutral, and disagree respectively. This shows the reliability of the service provider has effect on organization performance.

The respondents also agreed on the accessibility and convenience of the service providing effect on organization performance which is 56.7% with a mean of (4.36). The remaining was strongly agreed, neutral and disagree with 40.1%, 2.5%, and 0.7% respectively. From this it is possible to conclude that accessibility convenience of the service providing has an effect on organization performance.

A 50.7% of the respondents agreed with a mean of (4.49) on the responsiveness of service providing have effect on

organization performance. 48.9% respondents were strongly agreed on the issue and the remaining 0.4% was neutral. This indicated almost all respondents support the issue that responsiveness of service providing has effect on the performance of the organization.

The respondents also agreed 63.1% with mean value (4.25) on the completeness of the service has effect on organization performance. 30.9% of the respondents were strongly agreed and the other 6% was neutral. Standing from this it is possible to conclude that completeness of the service has effect on organization performance.

Most of the respondents 51.8% (mean=4.47) agreed on the issue consistency of the service has effect on organization performance. 47.5% of the respondents were strongly agreed and the remaining 0.7% was neutral. This indicates consistency of the service has effect on organization performance.

#### 4.5 DESCRIPTIVE ANALYSIS OF ORGANIZATION PERFORMANCE

Table.6. Descriptive analysis of organization performance

Items	N	Percentage				Mean
		Disagree	Neutral	Agree	Strongly Agree	
Product quality has effect on profit maximization	282	-	-	47.5	52.5	4.52
Product quality has effect on competitiveness	282	1.1	4.3	50.7	44	4.38
Operational quality has effect on profit maximization	282	-	2.1	47.5	50.4	4.48
Operational quality has effect on competitiveness	282	1.1	6.7	51.8	40.4	4.32
Customer service quality has effect on profit maximization	282	-	0.4	50.7	48.9	4.49
Customer service quality has effect on competitiveness	282	1.1	5.0	55.3	38.7	4.32

Source: Survey Data 2017

As illustrated in the above table 52.5% of respondents with a mean value of (4.52) strongly agreed on product quality has effect on profit maximization. The remaining 47.5% was agreed. So, generally all the respondents agreed on the effect of product quality on profit maximization. The respondents agreed 50.7% with a mean of (4.38) on the product quality has effect on competitiveness. 44% of the respondents strongly agreed, 4.1%

and 1.1% was neutral and disagreed respectively. This implies that product quality has effect on competitiveness.

A 50.4% of the respondents with a mean value of (4.48) strongly agreed on the operational quality has effect on profit maximization. The other 47.5% and 2.1% was agreed and neutral respectively. From this we can conclude that operational quality has effect on profit maximization. Majority of the respondents which is 51.8 with a mean value of 4.32 agreed on operational quality effect on competitiveness. 40.4% was strongly agreed and the other 6.7% and 1.1% was neutral and disagreed respectively. This indicates that operational quality has effect on competitiveness.

The respondents also agreed 50.7% with a mean of (4.49) on the issue of customer service quality has effect on profit maximization. The other 48.9% and 0.4% was strongly agreed and neutral respectively. This shows that customer service quality has effect on company's profit maximization. 55.3% with a mean of (4.32) agreed on customer service quality has effect on competitiveness. 38.7% of the respondents strongly agreed and the other 5% and 1.1% was neutral and disagreed respectively. From this it is possible to say that customer service quality has effect on competitiveness.

**4.6 CORRELATION ANALYSIS**

Table.7. Correlation Matrix

		Product quality	Operational quality	Customer service quality	Organization performance
product quality	Pearson Correlation	1	.328**	.480**	.750**
	Sig. (2-tailed)		.000	.000	.000
	N	282	282	282	282
operational quality	Pearson Correlation	.328**	1	.159**	.436**
	Sig. (2-tailed)	.000		.007	.000
	N	282	282	282	282
customer service quality	Pearson Correlation	.480**	.159**	1	.578**
	Sig. (2-tailed)	.000	.007		.000
	N	282	282	282	282
organization performance	Pearson Correlation	.750**	.436**	.578**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	282	282	282	282

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

Source: Survey Data 2017

A set of Pearson correlations were computed to determine if there were any significant relationships between the variables. The main focus of this section being on the overall relationship between the dependent and independent variables below in the table Correlation coefficient of Pearson was applied to study the relation between constructs.

As cited by Bacha [6], according to (Burns and Burns, 2008) correlation Values between 0 and 0.3 (0 and -0.3) indicate a weak positive (negative) linear relationship via a shaky linear rule, Values between 0.3 and 0.7 (0.3 and -0.7) indicate a moderate positive (negative) linear relationship and values between 0.7 and 1.0 (-0.7 and -1.0) indicate a strong positive (negative) linear relationship via a firm linear rule. Therefore, in this study all correlation results are interpreted in light of this rule.

The data shows the relationship between product quality and operational quality. The value of correlation is 0.328. The correlation is significant at 0.01. This shows that there is a moderate positive relationship between product quality and operational quality.

In product quality and customer service quality the value of correlation is 0.480 and significant at 0.01. This indicates there is moderate positive relationship between two variables.

The data also shows the relationship between product quality and organization performance. The value of correlation is 0.750 which is significant at 0.01. This shows that there is strong positive relationship between product quality and organization performance.

The value of correlation between operational quality and customer service quality is 0.159 and significant at 0.01. This shows that there is weak positive relationship between these two variables.

The relationship between operational quality and organizational performance as the correlation value indicates 0.436 and significant at 0.01. This means the relation between operational quality and organization performance is moderate positive.

In the data we can see the relationship between customer service quality and organization performance. The correlation value is 0.578 and significant at 0.01. This indicates there is moderate positive relationship between customer service quality and organization performance.

**4.7 REGRESSION ANALYSIS OF STUDY VARIABLES**

Table.8. Model summary of organization performance

Model	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Std. Error of the Estimate
1	.815 <sup>a</sup>	.665	.661	.25609

a. Predictors: (Constant), customer service quality, operational quality, product quality

Source: Survey Data 2017

A standard multiple regression was performed between organization performance as the dependent variable and product quality, operational quality and customer service quality as independent variables.

The result of multiple regressions displayed in the model summary shows that the regression model of organization performance coefficients of determination R<sup>2</sup> was 0.665 and R is 0.815. The coefficient of determination R<sup>2</sup> indicates that 66.5% of the variation on organization performance can be explained by the set of independent variables product quality, operational quality

and customer service quality. The remaining 33.5% of variation of the dependent variable can be explained by other variables not included in the model. This shows the model has goodness of fit. On the other hand, adjusted R square provides an adjustment to the  $R^2$  statistics such that an independent variable that has a correlation to dependent variable increases adjusted  $R^2$  and any variable without a strong correlation will make adjusted  $R^2$  decrease. According to the adjusted  $R^2$ , the variation explained by the regression of dependent variable on the combined effect of all the predictor variables is 66.1%.

#### 4.8 ANOVA RESULT

Table 4.9. ANOVA result

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	36.115	3	12.038	183.555	.000 <sup>b</sup>
Residual	18.232	278	.066		
Total	54.347	281			
a. Dependent Variable: organization performance					
b. Predictors: (Constant), customer service quality, operational quality, product quality					

Source: Survey Data 2017

In the ANOVA results the  $F$  value is 183.555 which is significant with  $P > .001$ . This informs us the independent variables taken together as a set are significantly related to the independent variable. The  $F$  critical at 5% level of significance is 0.066. Since  $F$  calculated 183.555 is greater than shows that the model is significant. The value of  $F$  is large enough to conclude that the set coefficients of the independent variable are not equal to zero. This implies that at least one of the independent variables has an effect on the dependent variable.

#### 4.9 COEFFICIENT OF DEPENDENT VARIABLE

Table.10. Coefficient of dependent variable

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
(Constant)	-1.915	.315		-6.086	.000	-2.535	-1.296		
1 product quality	.650	.049	.545	13.161	.000	.552	.747	.705	1.419
operational quality	.320	.055	.212	5.772	.000	.211	.429	.892	1.120
customer service quality	.459	.064	.283	7.149	.000	.332	.585	.770	1.299
a. Dependent Variable: organization performance									

Source: Survey Data 2017

The result shows that the coefficient of dependent variable, organization performance, and all the independent variables. As

beta coefficient shows that product quality had a coefficient of 0.650 which is greater than zero. The  $t$  statistics is 13.161 which have a  $p$  value of .000 which is less than 0.05. This implies that product quality has a significant positive effect on organization performance.

And also operational quality has a coefficient of 0.320 which is greater than zero. The  $t$  statistics is 5.772 with a  $p$  value of .000 which is less than 0.05. This shows operational quality coefficient is significant at 0.05 significance level. From this we can understand that operational quality has a significant positive effect on organization performance.

Likely customer service quality also has coefficient of 0.459 which is greater than zero. And the  $t$  statistics is 7.149 with  $p$  value of .000 which is less than 0.05. This implies that customer service quality also has a significant positive effect on organization performance.

These significance levels tell us that variables uniquely contribute to the regression equation there by making a significant contribution to the prediction. So, all variables in this study have a significant contribution positive effect on the dependent variable.

According to Burns [9] high correlations of 0.90 and above implies the two variables are measuring the same variance and will over-inflate  $R$ . Therefore, only one of the two is needed. The Variance Inflation Factor (VIF) measures the impact of co-linearity among the dependent variables in a multiple regression model on the precision of estimation. Typically, a VIF value greater than 10.0 is of concern. Since, the maximum value of VIF is 1.419 and the minimum one is 1.120, multi-co-linearity is not the problem of this model and inter correlations are not sufficiently high to cause concern. On the other hand, tolerance below 0.1 indicates a serious problem and below 0.2 indicates a potential problem. The tolerances of the variables are ranges between 0.705 and 0.892. The data satisfied the assumptions of multi-co-linearity, normality of residuals, and homoscedasticity while no outliers were identified.

The constant term was -1.915 and insignificant. The constant term is the value of the dependent variable when all the independent variables are equal to zero. The objective of the regression in this study is to find such an equation that could be used to find the effect of predictors on dependent variable. The specified regression takes the following form.

$$y = -1.915 + 0.650x_1 + 0.32x_2 + 0.459x_3 + \varepsilon \quad (1)$$

where,  $y$  = organization performance,  $x_1$  = product quality,  $x_2$  = operational quality,  $x_3$  = customer service quality and  $\varepsilon$  = error term.

The regression equation in Eq.(1) shows that by taking all factors into account constant at zero, organization performance will have a value of -1.915. And the findings presented also shows that taking all other independent variable at zero, a unit increase in product quality would lead to 0.650 or 65% increase in organization performance, a unit increase in operational performance would increase 0.32 or 32% increase in organization performance and a unit increase in customer service quality would increase 0.459 or 45.9% increase in organization performance.



## 5. CONCLUSION

In this study three basic research questions are developed and addressed and the major factors affecting the performance of an organization are identified. The factors considered to be affecting an organization in this context are identified as performance, reliability, durability, and serviceability of the product.

The study concludes that the product quality has a largest significant positive effect on organization performance. Product quality includes the performance, reliability, durability and serviceability features and all this has a significant positive effect on profit maximization and competitiveness of the company.

In operation quality this study concluded that operation quality has a least significant positive effect on organization performance compared to product quality and customer service quality. Operational quality comprises waste reduction, management cost reduction, efficient use of raw material, and distribution capacity of the organization. So, this study concludes that operational quality has a significant positive effect on profit maximization and competitiveness of the company.

Next to product quality, customer service quality has moderate positive significant effect on an organization's performance is another conclusion drawn by this study. The customer service quality includes reliability of the service provider, accessibility and convenience of the service, responsiveness, completeness and consistency of the service. So customer service quality has a significant positive effect on profit maximization and profitability of the company.

## 6. RECOMMENDATION

Based on the findings of the study, the researcher recommends the following suggestions, which, if adopted, would eventually increase the performance of the organization.

The company should ensure that the design of its product caters to its customer's requirements by addressing the quality issues from the beginning, and by selecting and tracking the key performance characteristics. It would add to the finesse of the product if suitable training on quality issues is imparted to the concerned employees.

Also, it would be nice if the company improves operational quality. Doing so would facilitate the company to reduce the management cost, order cycle time, and improve the efficiency of raw material use and the distribution capacity.

The company also recommends the improvement of customer service quality because in TQM customer is the central point. The company should listen to the customer and receive feedbacks from them, thereby enhancing the quality of its service and customer satisfaction. To do so the company should establish a customer information system to ensure the continuous flow of information.

The Total Quality Management (TQM) approach, a major discovery in the history of business and management, is also recommended. It is a reliable tool in the hands of organization management to practice and enjoy the taste of success with the dedicated and trained workforce. The companies that are not delivering quality are liable to suffer loss and can become bankrupt. So, the adoption of Total Quality Management in day to day matters is highly advised for optimum results.

Companies should organize quality improvement teams to investigate and initiate possible improvements to realize increased employee value, informed employees, technical training, quality training, and employee participation.

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