Need for Strengthening the Quality and Efficiency in the Products and Services of Indian Industry

S. Sakthi[1], Dr. Akila B[2]

[1]Research Scholar (Full-Time), Department of Commerce,
SRM Institute of Science and Technology, Kattankulathur
[2]Assistant Professor and Research Guide, Department of Commerce,
SRM Institute of Science and Technology, Kattankulathur

Abstract

The Quality plays an important role in the life of any product or service. It is of great interest to ensure that the products are produced according to the quality standards so that they may sustain in the market. In today's competitive world each and every single factor of a product which urges the product into the market from that of the competitors. The consumers using the quality products do not shift their preference unless it does not meet their needs. That is the reasons why most of the products which is of higher quality are preferred by the consumers without any hesitation even if the prices are tend to be higher. The products may be classified into tangible products (Mobile phones, Cricket bat, Consumables etc.) as well as intangible products include services like (Theatre, Restaurants, Banks, Insurance etc.). All these products have unique characteristics in their nature. This research paper is focused on the need for strengthening the quality of the products and services as well as its efficiency, and how such efficiency can be attained by the Indian Industry. This will be helpful to know how to strengthen the quality of products and attain its efficiency in the market. The data is collected from each and every individual who share their opinions. Some of the secondary data is also used to find out the results of the research. Statistical techniques like Percentage analysis, Reliability analysis, Cluster Analysis, Factor Analysis, and ANOVA are used to find out the desired results.

Keywords: Products, Quality, Efficiency, Services

INTRODUCTION

The Indian Industry has undergone a tremendous change in the products and services Industry. They highly play a major role in terms of developing the products and services quality and its Efficiency as a consideration of strengthening them. It is of great Interest to ensure that the products and services which are produced and delivered are according to the quality standards so that they can sustain in the market. In the competitive world various factors contribute to the products and services that move the product in the market from those of the competitors.

When the consumers use the products and experience the services with proper quality, they do not shift their preference from one to another. This is one of the strategies to retain the loyal customers. Many consumers prefer quality products because of its usage rate and efficiency in services even if their prices

are high. That is the reason why the Indian Industry focuses more on strengthening the Quality and Efficiency of Products and Services.

The need for strengthening the products and services includes some of the reasons like Trust Building with customers, reduces customer Complaints, Customer Loyalty, Customer satisfaction, Customer Retention, Increases the Return on Investment, Higher competition etc.

Some of the Strengthening factors include Price of the products and services, Technological usage, Taste and Preferences, Safe and Secure, Positioning in the market, Attractiveness, Life of the products etc. All these factors are considered as the contributing factors to the quality of products and services. While producing any products or delivering the services all these factors can be considered.

The products and services may not be restricted to one particular category say for example goods and services in case of Food industry. The products and services may include consumables like food Items, Beauty products, Theatre, Restaurants, Insurance, Banking, HR, Marketing, Finance services etc. All these belong to the category of Products and Services.

REVIEW OF LITERATURE

Mushtaq Hussain., Pratibha Ranabhat (2013)[1] in their Research paper "Influence of Service and Product Quality on Customer Retention" points out that delivering the high-quality services is a profitable strategy for success in the competitive environment. They focused on the comparative study on the product quality and as well as the service quality in food retailing. The study was conducted in a retail sector. This study has identified that the products quality is very much important when the customers make a purchase. They have also identified the ways through which how the customers can be retained.

Sara Qadeer (2013)[2] in the paper titled "Service Quality & Customer Satisfaction - A case study in Banking Sector" carried out the research with the view to find out the link between the service quality and customer satisfaction. The study was conducted in the banking sector from the employees working there. This study reveals that the service quality does not affect the customer satisfaction to certain extent. It is also found that not only the quality leads to satisfaction but also other factors relating to the service quality leads to customer satisfaction.

Albert Vitales Cruz (2015)[3] in the paper titled "Relationship between product quality and Customer satisfaction" has made an analysis to find out the quality and satisfaction using the cost and safety. The researcher carried out the study to identify the consumer needs to purchase the product. The results of the research provide that the Quality, cost and safety of the products enhances the customer satisfaction.

Ismail Razak, Nazief Nirwanto , Boge Triatmanto (2016)[4] examines the Impact of product quality and price on customer satisfaction. This study shows results that the quality and price of the products encourage the customer value and quality standards. The product quality also improves the customer satisfaction. It is found that the product quality and price are interrelated with the customer value which leads to customer satisfaction.

Ricko Achmadi Putra, Hartoyo Hartoyo, Megawati Simanjuntak (2017)[5] has made an attempt to study about The Impact of Product Quality, Service Quality, and Customer Loyalty Program Perception on Retail Customer Attitude. The study reveals that the factors influence the attitude of the retail customers with respect to the product quality. It is also found that the perception of the product quality affects the sale volume of the products.

STATEMENT OF THE PROBLEM

The Quality of any product or service is considered as an important factor for making the purchase decision. But a problem which arises is that there is a need for strengthening the quality of products and services. When the Quality and efficiency of the product or the service is met by the industry it leads to growth and ultimately the customer attains the satisfaction. Another question which arises here is that the factors which contribute to such quality and the efficiency of the products.

Hence it is necessary to focus on finding the need for strengthening the quality and efficiency of the products and services, and also to find out the various factors which contributed to the quality of products and services.

OBJECTIVES OF THE STUDY

The following are the important objectives of the study:

1.   To find out the need for strengthening the Quality of the products and services
2.   To know the factors contributing to the quality of products and services
3.   To find out the relationship between the quality of products and services

SCOPE OF STUDY

This study focuses on the need for strengthening the quality and efficiency in the products and services of Indian industry. The study is restricted only to respondents in Chennai city. The future researches can focus on the respondents within the industry with large number of samples.

LIMITATIONS OF THE STUDY

This Study has certain limitations.

1.   The sample size of the study is limited to 150 respondents
2.   Limited time period
3.   Some of the Respondents were reluctant to share their opinion
4.   The results may differ because of different sample size.

RESEARCH METHODOLOGY
Sampling area
The Study is conducted within the Chennai city from the General Public
Sampling Technique
The method of sampling that is used is Convenient Sampling.
Sample Size
The number of sample size used for the study is 150 respondents
Statistical tools
The statistical method which is used for analyzing the data is Reliability Analysis, ANOVA, Factor Analysis and Cluster Analysis

ANALYSIS AND INTERPRETATION
Reliability Analysis

Reliability Statistics	
Cronbach's Alpha	N of Items
.966	28

Source: Computed Data

INTERPRETATION

The above tables show the Reliability statistics of the Questionnaire. The Cronbach's Alpha value is 0.966 which is more than 0.8 which is said to be Excellent; hence the reliability for the question is proved (i.e.) the questionnaire is reliable for the purpose of data collection.

Percentage and Frequency Analysis

S.no	Particulars	Number of Respondents	Percentage %
1	Age	18 - 25 years	97
		26 - 35 years	03
2	Gender	Male	69
		Female	31
3	Income	Below 1,00,000	70
		Between 1,00,000 and 3,00,000	22
		Above 3,00,000 and Below 5,00,000	7
		Above 5,00,000	1

Source: Computed Data

HYPOTHESIS

Ho: There is no significant relationship between Age and Need for strengthening the quality of Products and services

Table showing ANOVA for Age on the Need for strengthening the quality of Products and services

ANOVA		Sum of Squares	df	Mean Square	F	Sig.
Builds Trust with Customers	Between Groups	8.474	1	8.474	4.791	.030
	Within Groups	261.766	148	1.769		
	Total	270.240	149			
Leads to Recommendations	Between Groups	6.488	1	6.488	4.307	.040
	Within Groups	222.952	148	1.506		
	Total	229.440	149			
Security Effectiveness	Between Groups	4.190	1	4.190	2.907	.090
	Within Groups	213.310	148	1.441		

	Total	217.500	149			
Usability of the products	Between Groups	9.473	1	9.473	6.467	.012
	Within Groups	216.800	148	1.465		
	Total	226.273	149			
Longevity	Between Groups	5.959	1	5.959	3.811	.053
	Within Groups	231.434	148	1.564		
	Total	237.393	149			
Higher Competition	Between Groups	7.121	1	7.121	4.782	.030
	Within Groups	220.372	148	1.489		
	Total	227.493	149			
Builds Reputation	Between Groups	6.259	1	6.259	4.076	.045
	Within Groups	227.241	148	1.535		
	Total	233.500	149			
Customer Retention	Between Groups	9.567	1	9.567	5.875	.017
	Within Groups	240.993	148	1.628		
	Total	250.560	149			

Source: Computed Data

INTERPRETATION

From the above table it is found that the Need for strengthening the quality of Products and services is significant with respect to age (F=4.791, p=0.030). This implies that the People agree that Building the trust with the customers is a need for strengthening the quality of products and services.

It is found that the Need for strengthening the quality of Products and services is significant with respect to age. It Shows that Strengthening the Quality of products and services leads to recommendations with respect to age (F=4.307, p=0.40). This implies that the people agree that strengthening the Quality of products and services leads to recommendations.

It is inferred from the above table that the Need for strengthening the quality of Products and services is significant with respect to age that is (F=6.467, p=0.012). This implies that the people agree that when product is is of high quality then it can be worth to buy the product. That is the usage of the product is high.

It is exhibited from the above table that the Need for strengthening the quality of Products and services is significant with respect to age that is (F=3.811, p=0.053). This implies that the products and the services will last longer period of time when the products and services are strengthened in terms of quality and improving the efficiency.

It is understood from the above table that Need for strengthening the quality of Products and services is significant with respect to age that is (F=4.782, p=0.030). This implies that higher competition for the products in the market will lead to the strengthening of the product quality as well as its efficiency.

It shows that the Need for strengthening the quality of Products and services is significant with respect to age that is (F=4.076, p=0.045). This implies that High quality of products and services builds reputation among the people which is in turn agreed by the Customers.

It is inferred from the above table that the Need for strengthening the quality of Products and services is significant with respect to age that is (F=5.875, p=0.017). This implies that when the products and services provided is of higher quality this may lead to customer retention of using the same products or services without going for alternatives.

CLUSTER ANALYSIS

The Cluster Analysis is a technique which is used to classify the objects or factors into groups called clusters.

In the Process of Cluster Analysis, the agglomeration schedule was used to identify the homogeneous groups by the increase in the coefficient values. There is a jump in the coefficient values between the stages 132 and 133. This was the noticeable increase to stop the clustering.

Table showing the Final clusters for the Factors contributing to the quality of products and services

Factors	Clusters		
	1	2	3
Price of the Products and services	**4.087**	2.785	2.056
Easy to use	3.454	1.519	**4.092**
Attractiveness	1.430	3.224	**5.169**
Efficiency of the product	2.316	**5.023**	2.183
Life of the Product	3.220	1.124	**4.137**
Technological Usage	2.178	2.781	**5.118**
Positioning of the product	**4.010**	3.638	2.056

Source: Computed Data

Table showing the Number of Clusters for the Factors contributing to the quality of products and services

Clusters	1	50.000
	2	22.000
	3	78.000
Valid		150.000

Source: Computed Data

INTERPRETATION

From the above two tables it is found that the first group consists of 50 respondents that is (33.33%) with moderate views over the factors contributing to the quality of products and services. This group is called as **"Moderate Factors"**

In the second group, there were 22 respondents that are (14.67%) which are of weak relating to the factors contributing to the quality of products and services. This group is called as **"Weak Factors"**

The third group of cluster consists of 78 respondents that is (52%) which is said to be strong with regard to the factors contributing to the quality of products and services. This group is called as **"Strong Factors"**.

Therefore, it is concluded that the factors which contributes to the quality of products and services are classified into 3 independent groups. The final cluster tables shows the variables with highest mean values. The Factors with highest mean values are Prices of the products and positioning of the products from Cluster 1 with mean values (4.087, 4.010) which is named as **Moderate factors**, Efficiency of the products from Cluster 2 with mean values (5.023) which is named as **Weak factors** and Easy to use, Attractiveness, Life of the product and Technological usage from Cluster 3 with mean values (4.092, 5.169, 4.137, 5.118) which is named as **"Strong Factors"**

FACTOR ANALYSIS

In order to reduce large number of Factors into few variables Factor Analysis is used.

Table showing the KMO and Bartlett's Test for Factors of need for Strengthening the Quality of products and services

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.886
Bartlett's Test of Sphericity	Approx. Chi-Square	224.813
	df	105
	Sig.	.000

Source: Computed Data

From the above table it is found that the Kaiser-Meyer-Olkin measure of sampling adequacy is 0.886. The value is greater than 0.5 which is good and acceptable for further analysis.

Then the analysis is followed by Bartlett's test of sphericity with approximate chi-square value 2.24813 are statistically at 5% level.

Therefore, it can be concluded that the fifteen variables are considered for reduction are suitably taken from the sample unit with considerable sample size. It is also designated with the meaningful reduction and able to form the factors with significant variance.

The following table measures the variance of the fifteen variables:

Table showing the Communalities for Factors of need for Strengthening the Quality of products and services

Communalities	Initial	Extraction
Builds Trust with Customers	1.000	.969
Leads to Recommendations	1.000	.912
Reduces Customer Complaints	1.000	.922
Product attraction	1.000	.926
It creates high Return on Investment	1.000	.884
It leads to Growth	1.000	.928
Security Effectiveness	1.000	.888

Usability of the products	1.000	.957
Longevity	1.000	.939
Customer Loyalty	1.000	.978
Higher Competition	1.000	.981
Increases Customer Expectations	1.000	.888
Builds Reputation	1.000	.887
Customer Satisfaction	1.000	.981
Customer Retention	1.000	.957

Source: Computed Data

Extraction Method: Principal Component Analysis

From the above table it is found that the fifteen variables show the variance. Every variable in the communalities table is expected to share 100% variance. Hence initially every item is having 1.00 which means 100% variance shared by each factor. The extraction value is ranging from 0.884 to 0.981 which shows that minimum variance share of factor after extraction is 88.4% and the maximum variance share of factor after extraction is 98.1%. This variation is significant in reducing the factors.

Table showing Total variance Explained for Factors of need for Strengthening the Quality of products and services

Component	Initial Eigen values			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	9.572	63.811	63.811	6.245	41.631	41.631
2	1.152	7.681	71.492	4.479	29.861	71.492
3	.780	5.201	76.693			
4	.689	4.591	81.284			
5	.539	3.596	84.880			
6	.472	3.144	88.024			
7	.426	2.840	90.864			
8	.366	2.442	93.306			
9	.262	1.745	95.051			
10	.189	1.258	96.310			
11	.168	1.118	97.428			
12	.121	.806	98.234			
13	.115	.768	99.001			
14	.080	.533	99.535			
15	.070	.465	100.000			

Source: Computed Data

Extraction Method: Principal Component Analysis.

From the above table it is found that the Fifteen Variables are reduced into two Predominant factors with Eigen Values 6.245,4.479 and individual variance 41.631 and 29.861. The total variance is explained

by these fifteen variables through 2 Predominant Factors is 71.492. The derived variance is statistically significant for derivations of factors through grouping of variables.

The following table clearly explains the grouping of variables into the predominant factors:

Table showing Rotated Component Matrix for Factors of need for Strengthening the Quality of products and services

	Component	
	1	**2**
Builds Trust with Customers	.918	
Leads to Recommendations	.825	
Reduces Customer Complaints	.821	
Product attraction	.791	
It creates high Return on Investment	.729	
It leads to Growth	.726	
Security Effectiveness	.718	
Usability of the products	.645	
Longevity	.632	
Customer Loyalty		.838
Higher Competition		.756
Increases Customer Expectations		.707
Builds Reputation		.701
Customer Satisfaction		.632
Customer Retention		.527

Source: Computed Data
Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

From the above table it is found that 9 variables create the first factors and the variables are given below:

Builds Trust with Customers	(0.918)
Leads to Recommendations	(0.825)
Reduces Customer Complaints	(0.821)
Product attraction	(0.791)
It creates high Return on Investment	(0.729)
It leads to Growth	(0.726)
Security Effectiveness	(0.718)
Usability of the products	(0.645)
Longevity	(0.632)

Therefore, these factors are suitably named as **"Growth Factors"**

Similarly the second factor comprises 6 variables:

Customer Loyalty	(0.838)
Higher Competition	(0.756)
Increases Customer Expectations	(0.707)

Builds Reputation	(0.701)
Customer Satisfaction	(0.632)
Customer Retention	(0.527)

Therefore, these factors can be identified as **"Retention Factors"**

Thus, the analysis is concluded that the need for Strengthening the Quality of products and services can be ascertained through the predominant factors viz., the Growth Factors and Retention Factors. This reveals that the factor analysis results in two predominant factors based on the information about the need for strengthening the quality.

FINDINGS

The following are the findings of this study:

➢ 97% of the respondents belong to the age category of 18-25

➢ 69% of the respondents are Male

➢ 70% of the employees belong to the category with annual Income of Below Rs.1,00,000

➢ Most of the respondents said that the need for strengthening the quality and efficiency of products and services is it builds trust with customers, Leads to recommendations, Reduces customer Complaints, It creates high return on Investment and Builds Reputation.

➢ Majority of the respondents view on the factors which contributes to the quality and efficiency of the products is Attractiveness, Safe and secure, taste and preferences.

➢ The reliability analysis of the questionnaire shows the Cronbach's Alpha value is 0.966 which is more than 0.8 which is said to be Excellent.

➢ The overall results of the ANOVA table shows that There is a significant relationship between Age and Need for strengthening the quality of Products and services.

➢ The Factors contributing to the Quality and Efficiency of products and services are classified into 3 categories namely Strong Factors, Moderate Factors and Weak Factors. Of this Cluster 3 is treated as Strong Factors, Cluster 1 is treated as moderate Factors and Cluster 2 is treated as Weak Factors based on their mean values.

➢ The Need for strengthening the quality of products and services is ascertained through two predominant factors namely Growth factors and Retention Factors. These factors are based on the information of the need factors.

SUGGESTIONS

Some of the suggestions are:

➢ The Industries when providing or delivering the products or service should provide in such a way that it satisfies the customers those who are using them. This will help in increasing the growth rate of the Industry as well as the market score of the product or service

➢ Various essential factors to be considered in designing the quality of the products and services so that it attracts the huge number of customers in choosing the products and services

➢ Quality plays a major role, therefore due care should be taken when delivering the products and services to the customers so that they remain constant without shifting their preferences.

CONLCUSION

From the results it can be concluded that, there is a need for strengthening the quality and the efficiency of the products and services. This is because customers prefer products which are of high-quality standards considering in view the usage and the longevity of the products and services. Therefore, the factors which contributes to the products and services Quality and Efficiency should be given due importance which will impact the Indian Industry.

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