

Performance Management towards Customer Satisfaction - A Survey of Six Sigma Belt Holders.

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Abstract

In the current business environment, customer satisfaction is the key to business success. Literature indicates that there are several studies on Six Sigma companies focusing on various dimensions. The present study focuses on how to manage performance of an organization to enhance customer satisfaction. In order to determine the influencing factors, the dimensions considered are voice of the customer, end-user of the service, response to customer needs in minimum time, service line value to the customer, corrective action system for quantifying areas for improvement not being met, on time delivery of service. The sample comprise of Six Sigma belt holders in servicesector implementingSix Sigma. The results indicate that mechanism to hear the voice of customer for on time delivery and service value to the customer are the factors influencing customer satisfaction.

Key word: Influencing factors, Performance Management, Customer Satisfaction, Six Sigma.

Introduction

Customer satisfaction and if possible, customer delight has been major focus of corporate executives in the present day competing organizations. There are several research studies in this direction to provide useful insights to the decision makers. Differentiation in terms of quality, price and on time delivery have drawn attention of researchers. Quality circles, TQM, Kaizen andSix Sigma areleading approaches focusing on customer satisfaction. The key to success of any program is Business Processing Re-engineering. The thrust of Six Sigma is to focus on process improvements in order to satisfy internal and external customers of an organization.

A literature review indicates thatmost of the research is focused on manufacturing organizations. This research paper is focusing on implementation of Six Sigma in the service sector. Six Sigma program aims to reduce the number of defects to the extent of 3.4 or less per million opportunities, which is close to perfect. A defect can be anything from a faulty part to an incorrect customer bill (Paul, 1996).According to Linderman et al, 2002, it is a systematic method for strategic process improvement and new product and service development to reduce defects defined by customers.Higher conformance results in increased customer satisfaction (Gryna, 2001). According to Schroder (2000) Six Sigmais a business process to

improve everyday business activities to minimize waste and resources to enhance customer satisfaction. It is a methodology to meet high customer expectations and requirements (Antony, 2002). Simmerman (1993), in his study found that the profits of a company may increase by 100% if it retains 5% of customers. If employees are trained customer satisfaction can increase by 14% (Sousa, 2002; Motwani, 2006; Inderman, 2003).

Objectives of the study

1. To understand the role of Voice of the customer (VOC).
2. To study the factors influencing customer satisfaction.

Research Design

The research design explains scope of the study, period, sample, data collection and analysis, reliability analysis so on. The **Scope of the study** is limited to qualitative data on the dimensions like:

1. Voice of the Customer.
2. End-user of the product.
3. Response to customer needs in minimum time.
4. Service line value to the customer.
5. Corrective action system for quantifying areas for improvement not being met.
6. On time delivery of Service.

The geographic scope of the study is limited to service organizations from IT/ITES, Finance & Banking, Insurance, Hospitals, Travelling and Telecom sectors which are located in Hyderabad and Secunderabad.

The data is collected from Six Sigma belt holders who implemented Six Sigma projects before November 2010 or in the process of implementation of Six Sigma during this survey period, i.e. November 2010 to April 2011. The population frame is the Six Sigma belt holders i.e. Sponsors/Champions, Master Black belts, Black belts, Green belts in IT/ITES, Banking/Financial, Insurance, Hospitals, Travel and Telecommunication services located in Hyderabad and Secunderabad, in Andhra Pradesh, India. Most of the sample companies are Bombay Stock Exchange listed and have implemented Six Sigma or in the process of implementing Six Sigma. The sample companies are divided into Indian multinational and multi nationals. A multistage sampling technique is being followed for the purpose of data collection. In the first stage stratified random sampling technique was adapted by making sample companies as strata. During first stage of data collection; care is taken to ensure that all types of Six Sigma belt holders are available from each of the sample companies. In the second stage, convenience sampling technique is being adopted to collect data. This is because of the busy schedules of the executives and getting appointment from most of the belt holders was very difficult.

Sample size

The primary data is collected through a structured questionnaire. Total 620 questionnaires are distributed to various belt holders across sample companies, among these 317 valid questionnaires (212 questionnaires are through the field survey and 107 respondents through emails) are received for the purpose of data analysis. It is worth to mention the required sample size for this study (as suggested by James E. Bartlett, II *et al*, 2001) is 267. Thus the sample of 317 is a valid sample for this research study.

Data Collection

For the proposed study; the data is collected only from the Six Sigma implementation team members and belt holders like sponsors, Master Black belts, Black belts, Green belts who are well aware of the implementation process, real time problem solving, and recording results during and after implementation of Six Sigma in their respective service organizations. The researcher approached quality heads of the sample organizations to meet the respondents (Six Sigma belt holders) personally and distributed questionnaire and collected the filled in questionnaires after 10-15 days gap.

Data Analysis

Data analysis was carried out to test the reliability of the questionnaire using Cronbach's alpha. Later KMO & Bartlett's test was conducted to determine the sample adequacy. Accordingly factor analysis was carried out to determine the factors influencing customer satisfaction.

Table 1 Reliability Analysis

<i>Name of the Parameter</i>	<i>Cronbach's Alpha Value</i>
Customer Satisfaction Factor (6 Statements)	0.754

Factor Analysis for Customer Satisfaction

Table 2 KMO & Bartlett's Test

Name of the Parameter	Kaiser-Meyer-Olkin Measure of Sampling Adequacy	Bartlett's Test of Sphericity
Customer Satisfaction Factor (6 Statements)	0.711	.002

Since KMO value is $0.711 > 0.5$, the sample is adequate and hence the data are eligible for factor analysis.

Table 3 Total Variance Explained for customer satisfaction

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.402	56.694	56.694	3.402	56.694	56.694	2.655	44.249	44.249
2	1.146	19.104	75.798	1.146	19.104	75.798	1.893	31.549	75.798
3	.473	7.890	83.688						
4	.451	7.509	91.197						
5	.319	5.318	96.515						
6	.209	3.485	100.000						

Extraction Method: Principal Component Analysis.

From the above output tables only two factors are retained from total 6 factors because their Eigen value is greater than 1, where the total variance of these two factors retained is 75%.

Table 4 Rotated Component Matrix of customer satisfaction

	Component	
	1	2
Voice of the Customer	.842	.133
End-User of the product	.288	.820
Responding to Customer Needs	.620	.598
Service Line value to customer	.034	.877
Corrective Action system	.831	.252
On time Delivery	.887	.116

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

The concerned rotated component matrix reveals that Voice of the Customer and Service Line Value to Customer are most influencing factors in customer satisfaction area. However it may be observed that on time delivery, voice of the customer, corrective action system have close factor loadings (above 0.8) and hence may be renamed as first factor. The service line value to the customer and end user of the product has factor loadings 0.877 and 0.820 respectively. Being close, may be renamed as second influencing factor of customer satisfaction.

Table 5 Factors influencing customer satisfaction

S. No.	Influencing Factors	Factor Loading	Common Name
I	On time Delivery	.887	VOC MECHANISM
	Voice of the Customer	.842	
	Corrective Action system	.831	
II	<i>Service Line value to customer</i>	.877	VALUE TO END USER
	<i>End-User of the service</i>	.820	

Conclusion:

Results of this research study indicate that the influencing factors for the customer satisfaction are the Voice of Customer Mechanism; which comprise of on time delivery, voice of customer and corrective action plan. Subsequently; the second influencing factor is service value to the end user.

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