

CUSTOMER SATISFACTION THROUGH SIX SIGMA APPROACH: A STUDY IN A TEXTILE SHOWROOM, DINDIGUL

¹ U. Geetha, ² A. Sabarirajan, ³ E. Manju, ⁴ K. Chandrasekar

¹Assistant Professor, ²Associate Professor, ³ Assistant Professor, ⁴ Assistant Professor

¹Department of Management Studies, PSNA College of Engg & Tech, Dindigul,

ABSTRACT: Effective quality control performance and enhancement models need to be established if the business is to survive. Six Sigma has been well noted as a significant business strategy that employs a fine structured continuous improvement methodology to reduce process inconsistency and waste within the business processes along with an effective application of statistical tools and techniques. The main focus of earlier studies has been on the improvement of manufacturers' quality with little emphasis on the customer related qualities of design, service, and customer satisfaction. The present study focuses on measurement of customer satisfaction in a textile showroom of Dindigul region of Tamil Nadu by using the six sigma methodology. The study further elaborates a combination of tools and techniques within the Six Sigma methodologies to achieve considerable benefits and customers' satisfaction.

Keywords: Six sigma, Customer satisfaction, Textile showroom; Customer expectation; Pareto Analysis, Root causes

I. INTRODUCTION

A century before, the scenario favored and revolved around manufacturers, which is reversed nowadays. Focus turned towards customers, since they decide the existence of a product. There exists a hectic competition in retaining the customer base and a new strategy is been adopted by many business called mass customization. This is possible in providing quality products that totally satisfies the customer. And of course, the ultimate aim of a business is to earn more profits and this can be achieved through long lasting customers. Companies are trying to fulfill the customer's expectation in various modes, and one such effort is Six Sigma. Six sigma is a quality tool used to reduce the variations and improves the quality of the product and process. The concepts of six sigma initially rooted in manufacturing and slowly penetrated to service as well. Different facets of six sigma were diagnosed by many researches. It is considered to be a powerful tool in aligning the organization's goal with the voice of the customer. Many tools and techniques are available under six sigma in filling the gap between organization and the customer expectation.

II. LITERATURE REVIEW

Massive competition is prevailing in world economic in recent days. Firms who implements quality tools are succeeding in its operations, and that reflects in the quality of outcome (Atmaca., et al 2009). At the time of world wars, priority is given to products rather than quality. Later arises a need for improvement in the quality and Japanese took these challenges in a positive sense. Most of the quality concepts rooted in Japan during 1950's and an effort was taken to improve the product quality using statistical tools in the area of production. Later these tools were adopted in services also. A system is built ensuring the interconnecting interactions among all the elements in a management for fulfilling the customer needs (Ali Erdogan & Hacer Canatan 2015) (Patir S, 2008).

Six Sigma (6σ) is one the tools under quality management, originated at Motorola in 1986 (Patricia Abreu., et al 2012). Sigma σ symbolizes the standard deviation, which measures the variability of the process. At the six sigma level, we obtain 99.999998% of conforming product parts, and the variability is only 3.4 defective parts per million productions (Yuksel H, 2012). The lower is the σ , denotes higher product conformity ratio. Six sigma is a structured and systemized technology (Kumar M., et al (2007) used to reduce errors in the production, to improve the process and product quality, to reduce the customer complaints and to achieve the customer satisfaction to the core.

Six sigma has a cycle for existing process "DMAIC: Define, Measure, Analyze, Improve and Control" (Carmen Cunha & Caroline Dominguez, 2015). It's a five step approach which defines the problem, measure the current process, analyze the root causes, framing and adopting strategies that reduce the error and control the future performance (Ali Erdogan & Hacer Canatan, 2015). Various tools and techniques are used to measure and analyze the exact root causes. Few such tools are Pareto analysis, Histogram, Run chart, Control Charts, Cause and Effect diagram, statistical tools, PDCA Cycle and FMEA (Thirunavukkarasu V, 2009).

Six sigma implementation is a project and specially trained consultants are used by the management for successful implementation. Initially the focus is on reducing errors in the products and now penetrated to services also. The application of six sigma extends its hand towards banking, health center, logistics and supply chain, finance etc., (Patricia Abreu., et al 2012). It emphasizes on improving the customer satisfaction, reducing complaints, expediting the delivery, reduction of cost and improving the customer service.

III. CASE STUDY

3.1. Define (D)

The company where this case study took place is one of the largest textile showrooms in Tamil Nadu having more than 20 branches. It is a well known branded showroom known for its collections and quality garments. After three years of marketing research, they started a new showroom in Dindigul just six months before, during a festival season. A grand welcome and support was given by the natives. All eyes were eager to watch the competition of this new comer with the existing native textile shops. Unfortunately, the scenario doesn't favour this new comer.

3.2. Measure (M)

This textile showroom is situated very near to the central busstand of dindigul. It has separate floors for women, kids, men, silk and common purpose garments. Floors are spacious enough to display all the garments in well arranged hanging racks. A pantry is situated at the side with an underground parking zone, which is not available in other showrooms. A well planned organization structure with right sized human resource. Around three billing points are available in each floor.

3.3. Analyze (A)

A study was conducted to know the satisfaction level and various customer's complaints, with a sample of around 100 randomly selected customers. Data was collected using structured questionnaire and further analysis is carried using few six sigma tools. Data was analyzed using Pareto Analysis, Cause and Effect diagram and Regression analysis.

3.3.1 Root Cause Analysis

From the study it is found that customers are disappointed due to some reasons. A root cause analysis was made to find out the reasons and it is portrayed in Figure 3.3.1. The customers compared this dindigul branch showroom with other branches and the following were found. Garments are costly, very less variety, Quality is not up to standard, Stock is old ie., this showroom is having the old stock sent by other branches and response of the sales person is not proper.

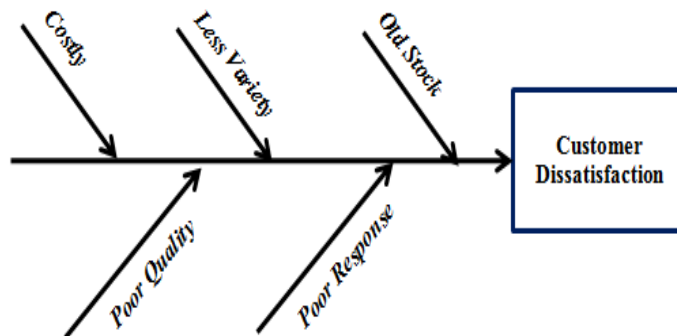


Fig: 3.3.1 Root Cause Analysis

3.3.2 Pareto Analysis

Based on root cause analysis, Pareto Diagram is constructed to find the vital few and useful-many factors as shown in Figure 3.3.2

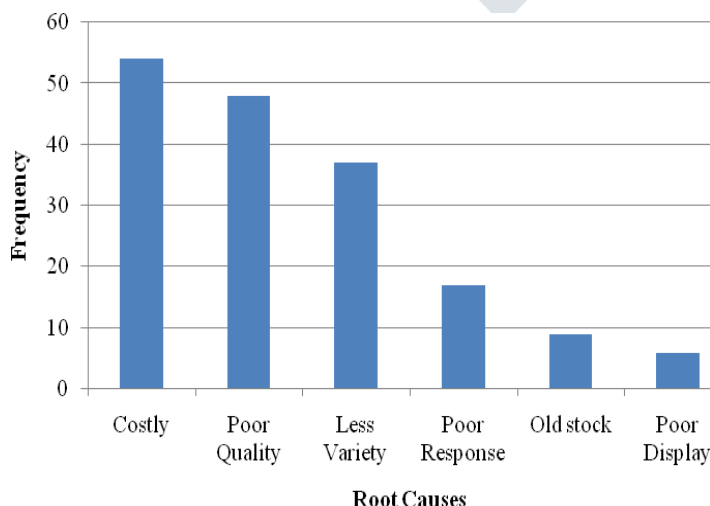


Fig: 3.3.2 Pareto Diagram

Cost, Quality and Variety falls in vital few categories which covers 80% of the satisfaction parameters of the customers, and more priority should be given to the abovesaid factors. Whereas response by the sales person, life of the stock and garments display falls in useful many categories which can be concentrated only 20%.

3.3.3 Multiple Regression Analysis

Here the dependent variable is Level of Customer Satisfaction (Y) and the independent variables are Price of garments (X_1), Quality of the garments (X_2), Variety of material (X_3), Life of the stock (X_4), Display of garments (X_5) and Sales person response (X_6) and the analysis is as follows:

Multiple R Value : 0.592

R Square Value : 0.351

F Value : 5.852

P Value: <0.001**

Table 3.3.3 Variables in Multiple Regression Analysis

Variables	Unstandardized Co-efficient	SE of B	Standardized Co-efficient	T value	P value
Constant	0.301	0.219	-	0.247	0.020*
X_1	-0.579	0.086	-0.508	-0.919	0.042*
X_2	0.501	0.144	0.641	3.483	0.001**
X_3	0.434	0.092	0.402	4.688	0.000**
X_4	0.218	0.095	0.295	2.299	0.025*
X_5	0.231	0.117	0.240	1.983	0.032*
X_6	0.008	0.115	0.009	0.071	0.944

Note: ** Denotes significant at 1% level * Denotes significant at 5% level

The multiple regression equation is

$$Y = 0.301 - 0.579X_1 + 0.501X_2 + 0.434X_3 + 0.218X_4 + 0.231X_5 + 0.008X_6$$

Here the coefficient of X_1 is -0.579 represents the partial effect of price on customer satisfaction, for every unit increase in price impacts 0.579 unit decrease in satisfaction. Similarly every unit increase of, Quality of the garments (X_2) impacts 0.501 units, Variety of material (X_3) impacts 0.434 units, Life of the stock (X_4) impacts 0.218 units, Display of garments (X_5) impacts 0.231 units and Sales person response (X_6) impacts 0.008 unit in customer satisfaction respectively.

Based on the standardized coefficient, Quality of the garments (0.641) is the most important factor, followed by price (0.508), Variety of material (0.402), Life of the stock (0.295), Display of garments (0.240) and Sales person response (0.009).

3.4 Improve(I) and Control(C)

Table 3.4 Suggestions for Improvement

Factors	Complaints	Suggestion
Price of garments	Material is too costly	Should follow the pricing similar to other branches of this showroom in Tamilnadu
Quality of the garments	Quality is not good	Pricing based on quality
Variety of material	Variety is very less	Should maintain stock similar to other branches of this showroom in Tamilnadu
Life of the stock	Old stock materials could find	Clear the old stock
Display of garments	Rural based customers expects sales person to show	Help the customers in selecting the garments
Sales person response	Sales person approach should be pleasing and recommending	Approach should be pleasing

The above said strategies are suggested for improvement, and the results will be discussed in next paper.

IV. CONCLUSION

This paper describes the importance of six sigma in resolving the complaints and to increase the customer satisfaction with reference to a textile shop. Due to the poor market coverage, frequent customer complaints and more customers' turnover, this showroom realized the importance of six sigma and planned to implement this project. Root causes for poor customer satisfaction were identified and strategies were suggested to improve the market. The outcome of six sigma project in this aspect will be discussed in future.

REFERENCES:

- [1] Ali Erdogan & Hacer Canatan (2015), 'Literature Search consisting of the areas of six sigma's usage', World conference on Technology, Innovation and Entrepreneurship. Procedia – Social and Behavioural Sciences 195,pp 695-704.
- [2] Carmen Cunha & Caroline Dominguez (2015), 'A DMAIC Project to improve warranty billing's operations: a case study in Portuguese car dealer', Conference on Enterprise Information System/ International Conference on Project Management/ Conference on Health and Social Care Information Systems and Technologies, Centeris/ ProjMAN/ HCist, 07-09 October, 2015
- [3] Muzaffer Erturka.,et al (2016), 'The effects of six sigma approach on business performance: A Study of White Goods (home appliances) Sector in Turkey', 5th International Conference on Leadership, Technology, Innovation and Business Management,Procedia Social and Behavioural Sciences, pp 444-452
- [4] Shibashish Chakraborty & Kalyan Sengupta (2014), 'Structural Equation Modelling of determinants of customer satisfaction of mobile network providers: Case of Kolkata, India, IIMB Management Review 26, pp 234-248
- [5] Muhammad Imran Qureshi., et al (2012), 'Customer Satisfaction Measurement and Analysis using Six Sigma in Telecom Sector of Pakistan', European Journal of Sustainable Development, Vol 1, No 1
- [6] Jitender Kumar & Vikas Tayal (2012), 'Improvement in customer satisfaction by using six sigma', International Journal of Computer Science and Communication Engineering IJCSCE Special Issue on "Emerging Trends in Engineering" ICETIE
- [7] Patricia Abreu., et al (2012), 'Using Six sigma to improve complaints handling', Proceedings of the World Congress on Engineering, Vol III, 04-06 July, London, UK
- [8] Thirunavukkarasu V 2009,'Design and Development of total Six Sigma function deployment technique', Ph.D, Anna University
- [9] Patir S (2008) Kumar M., et al (2007),'Winning customer loyalty in an automotive company through six sigma: a case study", Online, November 2006, pp 849-866
- [10] Yuksel, H, (2012) Hizmet Isletmelerinde Altı Sigma Uygulamaları: Literatür Arastırması. Selçuk Üniversitesi SBE Dergisi, 329.
- [11] Atmaca, Ediz, Girenes S.S.,2009, "Literatür Arastırması:Altı sigma Metodolojisi" Suleyman Demirel Üniversitesi IIBF Dergisi, C.14,S.3.

