



ISSN: 0975-833X

Available online at <http://www.journalcra.com>

International Journal of Current Research  
Vol. 8, Issue, 02, pp.26771-26776, February, 2016

INTERNATIONAL JOURNAL  
OF CURRENT RESEARCH

## RESEARCH ARTICLE

### CUSTOMER RELATIONSHIP MANAGEMENT (CRM) -A STATISTICAL PERSPECTIVE

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#### ARTICLE INFO

##### Article History:

Received 22<sup>nd</sup> November, 2015  
Received in revised form  
15<sup>th</sup> December, 2015  
Accepted 09<sup>th</sup> January, 2016  
Published online 27<sup>th</sup> February, 2016

##### Key words:

Customer Satisfaction, Customer Relationship,  
Lifetime Customer Value (LCV), Customer  
service index, linear model.

#### ABSTRACT

Customer Relationship Management (CRM) is the basic need of all the organizations of this era to develop a competitive advantage. In this paper, we have shown with the help of an example that organization with highest value of Customer Service Index (CSI) attains maximum profit which establishes the fact that CRM is the need of hour. Some rudimentary statistical techniques along with regression study have been used to establish the theory.

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**Citation:** Sarvesh Singh and Alok Kumar Singh, 2016. "Customer Relationship Management (CRM)-A statistical perspective", *International Journal of Current Research*, 8, (01), 26771-26776.

## INTRODUCTION

Customers are not equally treated by managers at middle level and supervisory level of Indian corporate. Unless the perspective of the managers changes towards customer problems pertaining to services will always exist. At present scenario, it is a very well-known fact to everyone. This is also one of the reasons that the level of complexity is increasing day to day to retain customers with the advancement in IT sector, customers are getting frequent information about their purchasing. Media is educating them and they scout around for best product, brand name, product quality, operation and service support. The main aim of any organization is to satisfy his customer's needs and wants. The problems faced by customers like delay in attending the customers query, and delay in extending the timely service support. Due to manual operations are tackled by CRM with the establishment of Internet. CRM facility is also available online. Internet has improved the CRM among customers. Now a days, with the enhancement of Internet or info-tech tools, traditional CRM has been shifted to E-CRM. With this, customer service/support can be easily available at any time at anywhere. CRM aims at exploring the future customer,

building the existing customer database, purchasing pattern of existing and future customers and purchasing process like time of purchasing, place of purchasing, periodicity of purchase of customers etc. At present customer touch point (CTP) are used to handle customer quests through electronic communication like e-mail, phone and fax for effective communication. The main of CRM and E-CRM is to provide a good and effective customer satisfaction. Companies must ensure that customers get a new experience in purchasing and using their products and the impact of such purchase must be for a long time.

### Why CRM

According to a Harvard Business Review study:

- A satisfied customer in 10 years will bring 100 more customers to the company.
- It costs 7 times more to attract a new customer than to serve an old one.
- 20% of the company's loyal customer's account for 80% of its revenue (Pareto's principle).
- Approximately 70% of customers switch brands because they don't like the service or the provider.
- On an average a customer tells 9-10 people about a problem.

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- The chances of selling to an existing customer are 1 in 2; the chances of selling to a new customer are 1 in 16.

### The following are the main tasks of CRM

1. Management of customer relationship
2. Effective management of sales force.
3. Providing best service to customers.
4. Customer get information and solutions instantly.
5. The main aim is to satisfy customer with the customer needs and product plan.
6. Remind customers of service requirements, periodic follow-up and alerts which give the customers a sense of binding with the company.

Thus CRM holds a plethora of promise for improving customer loyalty resulting at the apogee and nadir line benefit. According to Bain & Co. Research, when companies retain just five percent more of their customers, corporate profit can be boosted a minimum of 25 percent. Whether it's improving forecasting accuracy establishing support policies or simply keeping your customers. CRM might just be the answer for your organization. However CRM is a variegated process, mediated by a set of information technologies that highlights on creating two way exchange with customers so that organization have close knowledge of their needs, wants and buying patterns. It is a process that helps to learn more about customers' needs and behaviours in order to develop stronger relationship with them. It is the philosophy, policy and coordinating strategy linking different players within an organization for the purpose of coordinating their efforts in creating an overall valuable series of experiences, products and services for the customer.

### Advantages of CRM

The advantages of CRM are immense. It helps organisation to retain customers and make a powerful marketing, creates amiable opportunities for cross selling and opens up the possibilities of active introduction of new brands and products. To be able to give these profits, organisations must be able to customize their product offering, optimize price, integrate products, services and deliver the service as promised and demanded by the customer base. Keeping the customer cheerful is obviously one way of ensuring that they stay with organisation. So by organizing overall relationship with customer, companies are able to unlock vigour of their customer base and maximize contribution to their business. After successful implementation of CRM, the following advantages seem reasonable.

- 1.Increased sales volume:** Sales can be increased by spending more time with customers and by knowing their preferences about the products.
- 2.Increased Margin:** Increased margin results from knowing customer better, and providing a value product as discounting prices.
- 3.Improved customer satisfaction:** By prompt response and good relationship with company will bring satisfaction among customers.
- 4.Decreased marketing administrative cost:** When the relation is better between customer and organisation it should resultant in minimizing the cost and time.

### Some practical issues of CRM

**1.Customer acquisition Vs. Retention:** A new customer is either originated from the market or converted from the competitor. Both involve a cost of acquisition. In the same way, to retain or 'recreate' a customer also involves the cost of acquisition. If we spend same amount on both, the cost of retention will give more benefit to the company. The main dilemma for marketers is to optimize the spending on acquisition and retention.

**2.Scoring a database:** Customer vary in their buyer behaviour and readiness to respond to promotion programs. After applying the concerned parameter to a database, if we are getting an increase in customer list, it is called scoring a database. Addressing company campaigns on a scored database will yield better results than on a raw database.

**3.Lifetime customer value:** Lifetime customer value is a reflection of the possible future business a company can expect from a loyal customer. The repeat purchase by the customer, his family purchase, the referral purchase are included in the long term customer value. It should also consider for which this loyal customer is a ready prospect.

**4.Data Mining:** Many a times, customer data in various forms for various purposes is residing in the organization's database itself. However, to analyze it as per the parameters needed for a CRM program needs skill. Out of the large number of customers existing on the database, a few may be exhibiting characteristics, which make them more receptive, loyal and useful to the organization in future. These are the Gems in the database and searching the database to list out these Gems is the process of Data mining. Any CRM initiative will produce more results at lesser costs if the Gems are properly identified.

**5.Outsourcing:** Outsourcing company activities to call centres and logistic companies will have implications on CRM. The customers presume and react to the good or bad actions by the outsourcing agency as if these are actions by the company itself. More the extent of outsourcing, more vigilant the company should be to the service quality of the agency.

**6.Visualizing the results of Data mining:** The results of data mining are to be presented in an easy to understand, practical form for the reader who will try to make future CRM programs. The purpose of conducting data mining should be well understood by all concerned.

### Example

Automotive dealers in India are sustaining their improvement on implementation of core after-sales processes, which is resulting in higher owner satisfaction with the vehicle service experience (Please See Table 1). The study, now in its 18th year, measures satisfaction among vehicle owners who visit an authorized dealership service centre for maintenance or repair work between the first 12 to 24 months of vehicle ownership. The study measures overall satisfaction in five factors (listed in order of importance): service quality (43%); vehicle pick-up (17%); service advisor (14%); service facility (14%); and service initiation (11%) (Please See Figure 4).

## Findings

**Table 1. Table Customer Service Index and Profits for different companies**

Company	Scale(Customer Service Index)	Profit(in crore)
Maruti	890	2783
Honda	863	-479
Hyundai	862	1108
Tata	834	334.52
Mahindra	830	3758.35
Toyota	829	1770
Nissan	798	410
Ford	790	-597
Volkswagen	785	420
Chevrolet(GM)	780	-3812

**Table 2. Table showing all types of rank correlation**

	scale(customer service index)	Profit
scale(customer service index)	1	0.454545455
Profit	0.454545455	1

**Table 3. Table showing summary statistics of the given data**

		Scale	Profit
N	Valid	10	10
	Missing	0	0
Mean		826.1000	569.5870
Median		829.5000	415.0000
Std. Deviation		37.60452	2069.89404
Skewness		.317	-.653
Std. Error of Skewness		.687	.687
Kurtosis		-1.078	1.620
Std. Error of Kurtosis		1.334	1.334
Minimum		780.00	-3812.00
Maximum		890.00	3758.35
Percentiles	25	788.7500	-508.5000
	50	829.5000	415.0000
	75	862.2500	2023.2500

**Table 4. Table showing summary statistics of a simulated sample**

$(y = 30.712x - 248.02)$			
Y(profit)		X(scale)	
Mean	530.2388405	Mean	824.8319497
Standard Error	11.598745	Standard Error	0.377661663
Median	535.4	Median	825
Standard Deviation	1341.198147	Standard Deviation	43.6701663
Sample Variance	1798812.471	Sample Variance	1907.083425
Kurtosis	-1.211027089	Kurtosis	-1.211027089
Skewness	0.004028186	Skewness	0.004028186
Range	4606.8	Range	150
Minimum	-1768	Minimum	750
Maximum	2838.8	Maximum	900
Sum	7089823.536	Sum	11028828
Count	13371	Count	13371

Overall customer satisfaction is measured on a 1,000-point scale, with a higher score indicating higher satisfaction. Overall service satisfaction in the mass market segment improves by 22 points to 856 in 2014 from 834 in 2013. The increase is attributed to strong improvements across all factors, with service initiation, service quality and vehicle pick-up improving by 22 points each. More vehicle owners are scheduling an appointment, rather than dropping in, and dealerships are getting vehicles in when they arrive for service, thereby reducing owner wait times. The study finds that 74%

of customers are scheduling an appointment in 2014, up from 70% in 2013, which is contributing to faster vehicle intake, as 75% of owners indicate their vehicle was taken in for service within 15 minutes of their arrival at the service centre in 2014, up from 68% in 2013. Additionally, dealerships are proactively promoting their express maintenance/ quick service options, as 27% of customers are offered this option for services such as an oil change in 2014, up from 22% in 2013. The India automotive industry has been facing significant challenges over the past two years due to an increase in new-vehicle sales.

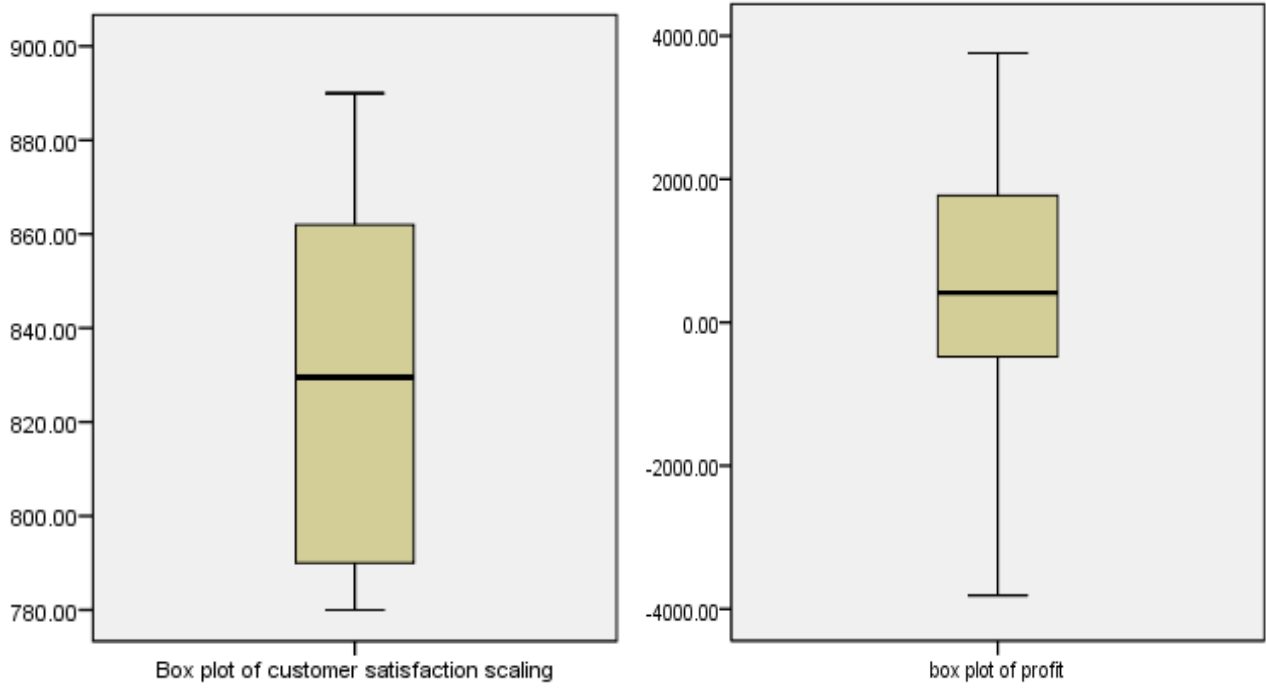


Fig. 1. Boxplots for the data of Customer Service Index and Profit of different companies



Fig. 2. Regression Analysis graph

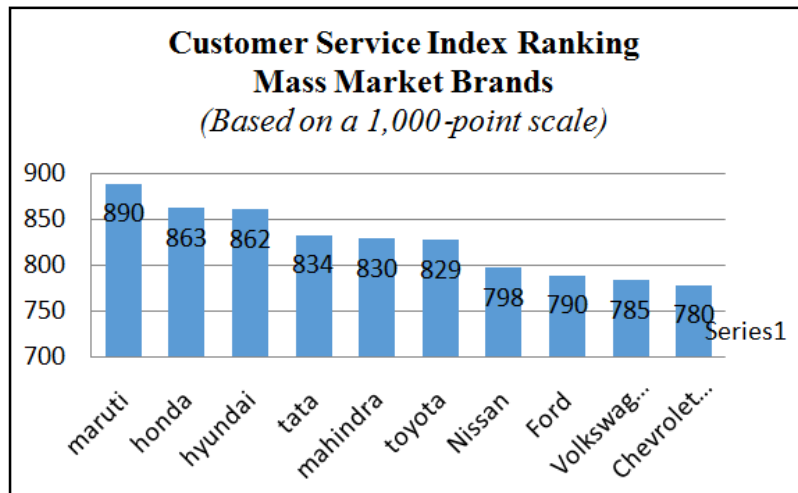


Fig. 3. Graph showing Customer Service Index of different companies

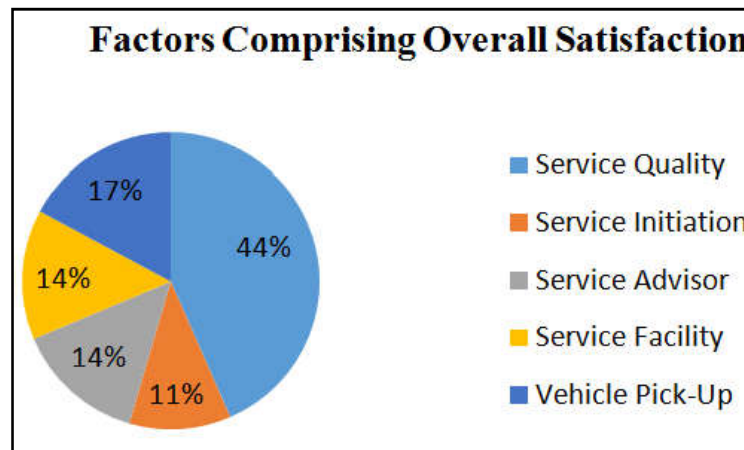


Fig. 4. Figure showing overall percentage of different factors affection overall satisfaction

Dealerships across most brands have risen to the challenge by placing stringent focus on a combination of implementing core processes and offering convenience, such as quick service, to ensure a superior customer experience with after-sales service. The study also finds that overall quality of work done during service is improving, as 95% of owners indicate the work was done right the first time in 2014, up from 93% in 2013. Additionally, 94% of customers indicate they had no problems during the post-service follow-up call with their dealer, which is a 7% increase from 2013. In the following example, the data has been taken from J. D. Power Reports and we have calculated different rank correlation. Also by detecting outliers in the data by boxplots and regression analysis graph, we have fitted a linear model and then obtained summary statistics for the simulated data. From the box plots we can see that two points are acting as outliers (Please See Figure 1) and from the above graph (Please See Figure 2), it is clear that linear model is best fitting model for the given data.

#### Linear model obtained

The summary statistics of the simulated sample is almost same as that of original data (Please See Table 3 and Table 4). It means that the linear model is the best predictor for the profit of the companies. Here we are using customer satisfaction scale as an independent variable from which we can predict the profit. Some difference between the original profit and the simulated profit occurs due to the presence of an outlier. By the study of this outlier, we can say that profit of the companies is not totally dependent on customer satisfaction.

#### Key findings

1. The study identifies 22 service standards that enhance the overall customer service experience. Nearly one-third (28%) of customers indicate their dealer implemented all 22 service standards in 2014, a 5% increase, compared with 2013. Overall satisfaction improves by 43 points to 899 when all standards are met.
2. Waiting time at the dealership has been reduced, as 85% of customers indicate they were attended immediately on arrival at the service centre in 2014, up from 82% in 2013. Additionally, 95% of customers indicate they received

proactive communication from their service advisor, compared with 93% in 2013.

3. Service advisors are prepared to receive the customers, as 74% of owners indicate their advisor knew about their vehicle history, which improves overall satisfaction by 14 points.
4. Customers expect to receive their vehicle within 20 minutes of their arrival at the
5. Dealership once service has been completed, an expectation that 85% of customers indicate was met in 2014, up 2% from 2013. On average, satisfaction improves by 7 points when this expectation is met.
6. Owners who are highly satisfied (satisfaction scores of 956 or higher) are nearly twice as likely to recommend their service dealer to family and friends compared with those who are highly dissatisfied (scores of 789 or lower). Additionally, highly satisfied customers are twice as likely to revisit their service dealer for post-warranty service.
7. Rank correlation (**0.454**) between CSI and profit of car's company (Please See Table2) shows that companies' profit depends on customer relation with company i.e. a company which have high CSI, attains high profit.
8. The simulated results are showing good results which are almost same as the original data. It means that the linear model is the best predictor for the profit of the companies. Here we are using customer satisfaction scale as an independent variable from which we can predict the profit.
9. Some difference between the original profit and the simulated profit occurs due to the presence of an outlier. By the study of this outlier, we can say that profits of the companies are not totally dependent on customer satisfaction.

#### Rankings

Maruti Suzuki ranks highest in customer satisfaction with dealer service among mass market brands for a 15th consecutive year with a score of 890. Maruti Suzuki performs particularly well across all factors (Figure 3).

#### Conclusion

Customer relationship management does not enable a quick win. It is a long-term approach that has to be adopted at a

strategic level. Whilst the value of customer relationship management has been identified by organizations, they are yet to look at the bigger picture and understand all of associated benefits that would enable their business strategies to be successful. Those responsible for delivery are perhaps the most informed about these strategic benefits yet the transformation is long-drawn-out process. The competencies required to deliver these customer benefits are: to deliver on its service promise, integrate products and service channels effectively, customize products & service and their respective prices, create opportunities for cross selling and delivery mechanisms for the onward promotion of these products and services and reduce the gestation period to market by allowing quick and effective introduction of new products and services.

### Acknowledgement

The first author gratefully acknowledges the financial support in the form of scholarship, given by University Grant Commission, New Delhi. The second author acknowledges the financial support in the form of scholarship, given by University of Allahabad.

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