

# Customer Satisfaction Survey for Various Brands of Tractors: A Case Study

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**1. Abstract - India has the largest market in the world and ranked fourth out of top five countries in the term of tractor population, out of which twenty five percent shares is in Punjab state only. Due to competition in the market, it is hard to add new customer and to satisfy the existing ones. So, the customer satisfaction is critical part for tractor market. The present work was focus on customer satisfaction among users of various brands of tractors in Kotkapura region, who had recently purchased the tractors or were planning to purchase brand new or second hand tractors. The statistical Z-test, Total Point Score (TPS) and Percentage Point Score (PPS) test, Chi-square test was applied to calculate the overall satisfaction score. From the Z-test, TPS and PPS tests fifteen technical parameters were analyzed and according to these technical parameters the Swaraj tractor brand was found to be the most efficient with (24.14) overall satisfaction score followed by HMT (21.56), Mahindra (16.97), Johndeere (15.39) and Sonalika (10.22). From the Chi-square test income, age of respondents and Horse Power of tractors were related with brands, but education and land of respondents were not related with brands when consumers intend to purchase new or second hand tractors.**

## 2. INTRODUCTION

The level of automization in India is quite low as compared with other countries. India is the largest tractor market in the world. Out of all states of India, Punjab has the highest tractor density 100 tractors per 1000 hectares and in it state has more than four lakh tractors accounting for 25% of total tractors in country. Going by area under cultivation, 1.5 lakh tractors are sufficient thus Punjab state is over tractorised (Singh, 2000).

No specific relationship seems to exist between farm size and tractor size. Tractors are purchased not only for own farm working but to cater to custom work too. Tillage, threshing and transportation of farm produce and other many activities for which tractors are utilized. An average farmer finds work for his tractor for less than 400 hours in

a year as against the norms of 1000 hours recommended by bankers to recover the fixed investment cost (Singh and Sidhu, 1990).

The tractor is hypothecated as a primary security and there is registered mortgage of the land as a security against non-payment. Various concessions by the government of India have also helped the small farmers in purchase of tractors which include exemption in the excise duty on tractors of less than 1800cc engine capacity. If the tractor is used for only farming, then 25 HP (Horse Power) tractor is sufficient for 8-10 acres and 35 HP tractor is sufficient for 25-30 acres (Reghuram, 2000). It is well known that the sales of tractors are credit dependent. Therefore, the farmer demand for tractors is realized largely due to credit facility availability. Further, past sales of brand also affect its future sales as farmer go by the popularity of a tractor in their area. This is further reinforced by the after sale services facilities offered by the companies through dealers, price of the tractors, efficiency, maintenance cost and resale value of tractor. Sometimes factor like design or look of the body of the tractor and the driver is convenience also affect brand and model choice.

The tractor market segments can be in terms of the power configuration. In India there are five categories based on the engine power(HP) 20-30 HP, 30-40 HP, 40-50 HP, 50-60 HP and more than 60 HP. Demand for higher HP tractors are expected to increase with choice shifting to high powered tractors since they can be used for a variety of purpose (Reghuram, 2000).

Customer is a very important person in the market. Infact, he is the king of the market. Therefore, it is the utmost duty of an organization to safeguard his interests and meet his expectations with the products/services offered. Satisfaction is the sum total of customer's expressions of service quality and depends upon customer's own

perceptions and expectations. Service Satisfaction of the customers is an invaluable asset for the modern organizations, providing unmatched competitive edge. It helps in building long term relationship as well as brand equity the best approach to customer retention is to deliver high level of customer satisfaction that results in, strong customer loyalty. Satisfaction being a judgment, that a product or service feature or the product or service itself, provides a pleasurable level of consumption related fulfillment,

Customer Satisfaction can be defined as an overall evaluation of performance based on all prior experiences with a firm and has been linked to a firm's overall performance and health of an organization. Getting closer to customers and effectively responding to their needs is a way to boost their loyalty and encourage deeper business relationship. The Intensifying competition in market and the resultant increase in choice have made the customers more demanding with regards to the value of firm or an offer provides. As the consumer became more active informed and connected firms attempted to retain them with customer loyalty programs.

### 3. LITERATURE REVIEW

Bayraktar et al. (2012) analyzed and compared CS&L efficiency for mobile phone brands in an emerging telecommunication market, Turkey. The constructs of European Customer Satisfaction Index (ECSI) model were treated and used as input and output indicators of our DEA model. Drawing on the perceptual responses of 251 mobile phone users, the DEA models revealed that from the top six mobile phone brands in Turkey, Nokia features as the most efficient brand followed by LG and Sonny Ericsson in terms of CS&L efficiency, while Motorola, Samsung and Panasonic rank as the least efficient brands.

Jiaying et al. (2011) conducted a questionnaire based survey focusing on Chinese farmers perception toward brands of agricultural machinery. The empirical study with tractor brands indicated that farmers showed different awareness to domestic and foreign agricultural machinery

brands. It was concluded that National tractor brands got more attention from consumers and Dong fang hong brand gained the most familiarity. Foreign brands, New Holland and John Deere had higher perceptible price, but Chinese brands, Dong fang hong and Foton acquired higher perceptible value, and domestic brands, Dong fang hong 28.17% and Shi feng 19.72% got more preference and purchase intention from consumers.

Haruna and Aikins (2012) conducted a survey to identify their personal profile, perception about the causes of tractor breakdown, and the major constraints affecting tractor maintenance and repair. Data was collected through questionnaire administration. Tractor owners and operators perceived the causes of tractor breakdown to be careless tractor operation, inadequate maintenance, aged tractors, poor roads to farms, use of fake spare parts for tractor maintenance and repair, and problems to tractor operation in the farms including stumps, roots, and buried stones. It was concluded that the major constraints affecting tractor maintenance and repair were found to be high cost of genuine spare parts, poor educational background of owners and operators, and lack of financial credit and there was need for the provision of professional training in tractor operation, financial credit and after-sales-service to tractor owners and operators.

### 4. RESULTS AND DISCUSSION

All the observed values of  $Z$  were more than 1.96 so the  $H_0$  was rejected and the data was significant. For the reduction of the area of research the T.P.S. (Total Point Score) and P.P.S. (Percentage Point Score) tests were applied as shown in Appendix – III. With the help of these statistical tests first fifteen parameters were selected for next observation shown in table 4.01, these fifteen parameters were those parameters which were most important and tips on each respondent at time of purchasing any brand of tractor.

Table 4.01: Average satisfaction score of various brands of Tractors.

TECHNICAL PARAMETERS	AVERAGE SATISFACTION SCORE OF AGREE RESPONDENTS WITH TECHNICAL PARAMETERS				
	HMT	SWARAJ	JOHNDEERE	MAHINDRA	SONALIKA
The resale value of tractor is good.	21.72	25.36	15.88	15.93	9.43
The availability of spare part is localized.	22.19	24.36	16.35	16.39	6.96
You are satisfied with the design of tractor.	22.46	26.10	15.92	16.20	11.86
The driving seat of tractor is comfortable.	21.75	23.17	15.23	16.66	11.57
The performance of gear box is good.	18.83	25.36	15.93	15.95	8.70
The satisfaction level of high, low and medium speed.	23.18	24.65	13.77	17.39	10.85
The performance of engine power is satisfactory.	23.22	26.10	14.48	17.36	8.68
You are satisfied with the performance of engine.	23.51	24.65	15.92	16.64	9.39
The lift control system of this tractor is best.	18.81	20.28	15.21	16.66	11.57
The performance of live PTO is excellent.	23.20	24.60	15.20	16.66	11.57
The braking system of tractor is good.	17.39	23.19	14.50	16.66	10.85
You are satisfied with the life of clutch plate.	21.87	22.54	14.60	17.69	9.43
You are satisfied with the company which manufacturing the tractor.	21.81	25.35	15.95	18.08	10.84
The material which is used for manufacturing the tractor is reliable.	21.05	21.75	16.73	18.88	10.14
You are satisfied with the improvement by the tractor company.	21.74	25.37	15.25	17.38	11.60

Overall Satisfaction Score of agree respondents with technical parameters of various tractor brands observed in pictorial form is depicted in figure 4.02. The highest satisfaction score of Swaraj was 24.14 followed by HMT with 21.56, Mahindra 16.97, Johndeere 15.39 and the lowest satisfaction score of Sonalika was 10.22.

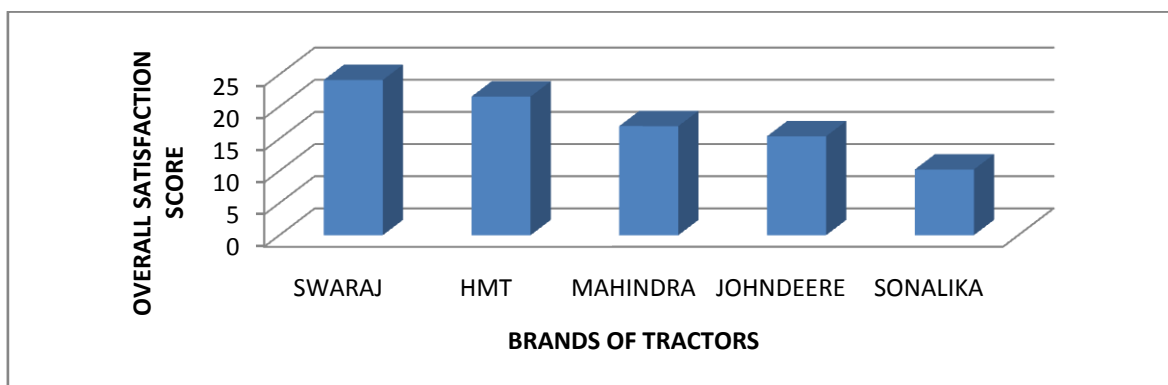


Fig 4.02: Overall satisfaction score of various brands of Tractors.

Chi-square test was applied to check the age of respondents were related or not related with tractor brands when the farmers wanted to purchase brand new or second hand tractor. The value of  $H_0$  was the ages of respondents were not related at the time of selection of brand. The calculated value of  $\chi^2$  was 18.911 which was more than the tabulated value 15.507 at 5% level of significance (degree of freedom 8), the null hypothesis was rejected (NHR), so the age of respondents were related with selection of brand. According to this study 20 - 30 years age group was in younger age group they were satisfied with only brand name (international or national), the respondents of the age group 30-50 years had more experience of the tractor and the knowledge of the income which was important factor for purchase tractor and more than 50 years age group was older age group and they were satisfied with their own tractors, they thought that the change of the tractor was waste of the money and checked for the education of respondents were related or not related with the tractor brands at the time of purchasing brand new or second hand tractor. The value of  $H_0$  was equal to the education of respondents were not related at the time of selection of brand. The calculated value of  $\chi^2$  was 17.135 which was less than tabulated value 26.296 at 5% level of significance (degree of freedom 16), the null hypothesis was accepted (NHA), so the education of the respondents were not related with selection of brand. According to this result the education was not affected at that time when the farmer wanted to purchase a brand new or second hand tractor because in many times illiterate or lower levels educated farmers had more knowledge and they had more experience about tractors than well educated and checked for the land was related or not related with tractor brand at the time of purchase a brand new or second hand tractor. The value of  $H_0$  was equal to the land of respondents which were not related at the time of selection of brand. The calculated value of  $\chi^2$  was 21.023 which was less than table value 26.296 at 5% level of significance (degree of freedom 16), the null hypothesis was accepted (NHA), so the respondent's agriculture land were not related with tractor brands. According to this study land were not affecting on selection of brand, some farmers had less agriculture own land but their thoughts different and some had more agriculture land their thoughts were different and the income of respondents were related or not related with tractor brands at the time of purchase a brand new or second hand tractor. The value of  $H_0$  was equal to the income of respondents were not related at the time of selection of brand. Calculated value of  $\chi^2$  was 10.811 which was more than tabulated value 9.488 at 5% level of significance (degree of freedom 4), the null hypothesis was rejected (NHR), so the income of respondents were related with tractor brands. According to this study if the income of the respondents (farmers) were more they wanted to purchase a new or second hand tractors with efficient brand if the incomes of respondents (farmers) were less than the thinking of farmers were different and checked for the HP of tractors were related or not in related with the tractor brands at the time of purchase a brand new or second hand

tractor. The value of  $H_0$  was the value of HP of Tractors was not related at the time of selection of brand. The calculated value of  $\chi^2$  was 34.828 which were more than tabulated value 26.296 at 5% level of significance (degree of freedom 16), the null hypothesis was rejected (NHR), so the HP of tractors were related with brands of tractors. According to this study HMT 50-60 HP (5911) tractors were more efficient than Swaraj 40-50 HP (744), Johndeere 50-60 HP (5310), Sonalika 50-60 HP (DI60).

## 5. CONCLUSION AND FUTURE SCOPE:

According to the Z-test the respondents (farmers) were satisfied with Swaraj brand with 24.14 overall satisfaction score followed by HMT with 21.56, Mahindra with 16.97, Johndeere with 15.39 and Sonalika with 10.22 overall satisfaction score. From the choice of particular tractors, Swaraj 744 was the most like among the farmers followed by HMT 5911, Mahindra DI 275, Johndeere 5310, Sonalika DI 60. According to the Chi-square test age and income of respondents and HP of various tractors inter-relate with selection of brand at the time of purchasing but education and land of respondents were not inter-relate with selection of brand at the time of purchasing.

This research work can be extended by finding the limitations in various Brands for success in future time with doing rework on those limitations by manufacturing company. Similar type of study can be done on large region.

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