

# Factors Affecting Customer Satisfaction in the Taxi Service Market in India

Abdul Wahid Khan\*, Ambika Jangid\*, Ankit Bansal\*, Maruthappan S.\*,  
Shiven Chaudhary\*, Vinay Tyagi\*, Purba Halady Rao\*\*

## Abstract

In taxi service industry, like any other industry, the consumer is always at the centre of all managerial processes forming a focal point around which the business revolves. A company creates products and services with the needs and wants of the consumer in mind. Taxi service industry is one of the fastest growing transportation industries in India and in order to provide excellent service, the industry needs to identify and evaluate the existing products and services, as observed in the industry, finding out what the significant needs and preferences of the consumer are and what leads to customer satisfaction.

With this objective this empirical research was conducted to consider the taxi service industry in India and determine the factors affecting customer satisfaction in this industry. This industry has seen a very significant growth in the recent past and there are many players operating here, some of whom started as entrepreneurs having innovative ideas to implement in this market.

All the same, like in any other service industry, the most important feature here is customer satisfaction. In this research the authors endeavor to understand what constitutes customer satisfaction in this market. Using the empirical data base obtained from the survey, a preliminary significant testing was carried out followed by structural equation modeling, SEM, which brought out the factors which significantly lead to customer satisfaction.

**Keyword:** Customer Satisfaction, Empirical Research, Structural Equation Modeling, Exploratory Research

## Introduction

The taxi service industry in India has been seeing a phenomenal growth in the past 6-7 years. Over \$400 million (INR 2400 crores) of venture capital money has been injected into the taxi service companies in the past 4 years itself.

A major player in the market recently raised over \$ 210 million in Series D from a soft bank at a valuation of over \$1 billion to focus on expansion. Another player raised over \$30 million in its latest round while a third player, an international company, has acquired over \$1.5 Bn to fuel its international expansion. This player has also committed almost \$400 million to grow and promote its service in India.

The Indian radio taxi market alone is placed at a level anywhere between \$6-\$9 billion dollars by different estimates, and is forecasted to grow at 17-20% annually. More importantly, the organised taxi market is still minuscule as compared to rest of the taxi market in India; it constitutes only 4-5% of the market in terms of sheer number of vehicles. The rest is operated by players who own fleets of 2-50 cars and typically have a presence in 1 or 2 cities. (<http://knowledge.wharton.upenn.edu/article/indian-entrepreneurs-are-redefining-indias-taxi-service/>)

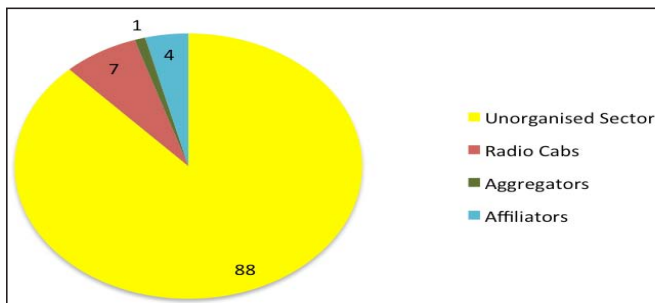
\* Indian Institute of Management Ranchi, Jharkhand, India.

\*\* Visiting faculty, Indian Institute of Management Ranchi, Jharkhand, India.  
Email: purbarao@gmail.com(Corresponding author)

## Market Size Potential

The unorganised sector constitutes of 88% of Indian taxi market, whereas radio cabs are at a market share of approximately 7%. Aggregators and affiliators hold the rest 5% of market.

With this in perspective one can now see why each player is trying to aggressively expand and is raising huge funding rounds. The major players have just conquered less than 3-4% of the total available market of India so far and have a huge opportunity in front of them. (<https://www.linkedin.com/pulse/20140811065310-165796846-india-radio-taxi-services-market-forecast-opportunities-2019>)



**Fig. 1: Market Size Potential for Taxi Service Market**

## Evolution of the Organised Taxi Sector in India

Two major taxi service companies started out in 2001 itself with small fleets. The market, however, started seeing traction only from 2006 onwards when the likes of large taxi companies came up. There are now several competitors eyeing for a piece of the pie.

### Phase 1: Fully Owned Fleets

In the initial phase of the market companies owned the complete fleet with the drivers as salaried employees. This was characterised by high capital costs to the company – car loan EMIs, high maintenance costs. While this model facilitated rapid expansion, it also came at a huge cost, caused high stress levels in drivers and there were driver strikes that affected the service.

Bookings were mainly done via telephone calls and cash was the dominant model.

### Phase 2: Fleet Aggregation model

Companies like Taxi ForSure and Ola started this model where small fleet owners or single car owners can put the company brand on the car, and get registered with them. Cars are free to take up non-company rides, but for every company-initiated ride, they pay the company a fixed percentage as commission. This model had low capital expenditure and lower maintenance costs.

Bookings was done via telephone calls as well as through their websites. While cash was still the dominant payment form, in-cab point of sales, terminal for credit / debit cards etc.started being used as well in this phase.

### Phase 3: The Hybrid Model

In this model, part of the fleet is owned by the company and part of the fleet is from an aggregation model, hence providing the best of both worlds – better control on cab availability and service quality while keeping costs low.

Bookings are done via telephone, website as well as mobile apps and the payments via cash, card and wallets.

## The Business Problem

The radio taxi space in India has huge headroom for growth and is far from saturation. While there is a good scope for expansion in tier 2 cities, the metros will still be the primary market for all players. Hence we might see price wars and more fleet variations. In such a situation the question, which lies ahead for companies like Ola is which customers are more likely to hire a cab of their company.

Since more and more hatchbacks and low cost options will be introduced to cater to the price conscious Indian market and to compete against other forms of public transportation, service assurance & quality and convenience will emerge as the long-term differentiators.

In such scenario the basic problem which companies are facing is - what factors should a cab aggregator focus to increase user satisfaction?

## Target Market

The radio taxi companies have targeted the customers based on the three criteria as following:

**1. Trendy and Tech Savvy Customers:** Most of the companies are going for market where taxi booking is through mobile application. The current trend in the mobile market is smartphone, which can be used for various purposes. One of the purposes, which Taxi companies are looking, is booking the taxi on-line through mobile application.

So basically companies are trying to target to trendy and tech savvy customers who can easily use the application and book taxi through mobile application.

**2. The Urban Traveler:** The primary market for the radio taxi companies is metro cities where urban people can easily take a cab service without any difficulty. The urban people live in a high traffic area. So in such a market travelling by a cab, which can be easily available, provides much comfort to the customers.

**3. Luxury:** Travelling in a public transport is a much tedious job. So people opt for travelling through their own personal vehicle. But owning a vehicle and using it is a rather expensive way. So people look for ways for luxurious rides. The companies are trying to target such population who are looking for luxurious rides at a much cheaper price.

## Literature Review

In our project, we have built the conceptual model on SERVQUAL on the basis of prevalent triangle comprising 'service quality-customer satisfaction-customer loyalty' in the service industry. Cronin and Taylor (1992) and Fornell (1991) were innovative thinkers in their time and they demonstrated the presence of the links in the triangle. Following is an abridgement of the researches that have been found on the relationships present between service quality, customer satisfaction and customer loyalty:

### i. Relationship between service quality and customer satisfaction

Cronin and Taylor (1992) first proved the precedence of service quality to customer satisfaction. Spreng and Mackoy (1996) researched in this field and proved positive effects of high service quality on customer satisfaction. Till date numerous research papers are presented on the subject. A study by Chao and Kao (2009) proves that

all elements of service quality and directly influence customer satisfaction.

### ii. Relationship between Service quality and Customer loyalty

Cronin and Taylor's (1992) study could not establish a significant effect on repurchase intentions or customer retention if applied to the service industry. Lenka, Suar, & Mohapatra (2009) found that service quality has positive impact on customer loyalty.

### iii. Relationship between Customer satisfaction and Customer loyalty

Anderson (1993), Bolton and Drew (1991), and Fornell (1992) have found a positive link between customer satisfaction and customer loyalty. Bloomer and Kasper (1995) proved the complex relationship between customer satisfaction and customer loyalty. Hart and Johnson (1999) demonstrated the presence of customer loyalty and satisfaction together when they are present in their true sense.

**Table 1: Definitions of Attributes**

<i>Attributes of service quality</i>	<i>Definitions</i>
Tangibles	Physical facilities, equipment and appearance of personnel
Reliability	Willingness to help customers and provide prompt service
Responsiveness	Willingness to help customers and provide prompt service
Assurance	Knowledge and courtesy of employees and their ability to inspire trust and confidence
Empathy	Caring and individualised attention that the firm provides to its customers combined to form one of the new elements known as assurance and the elements of access, communications and understanding the customer were combined to form empathy.

Numerous such research concepts led to a framework of service quality or generally called SERVQUAL

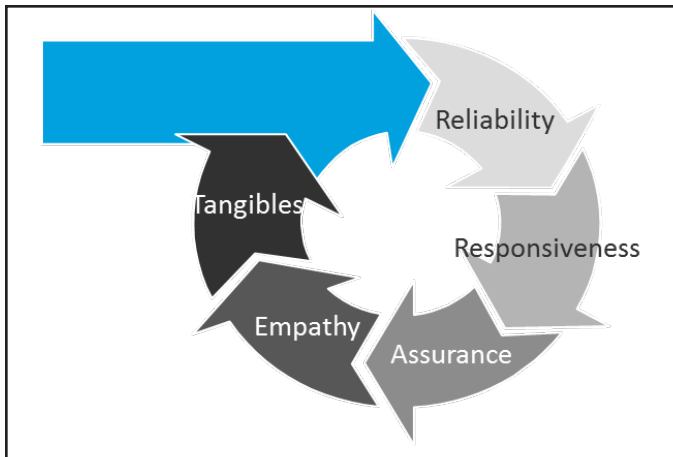


Fig. 2: Conceptual Model Used to Measure Customer Satisfaction

Source: Parasuraman, Zeithaml, and Berry (1988)

Different variations of the SERVQUAL have been hypothesized and proved for different industries. These research papers have proved the applicability of the SERVQUAL in the industry. Many industries like airlines, hotel, telecommunications, and hospitals have improved customer retention exploiting these researches.

For taxi industry, the SERVQUAL would take the form as shown in Fig. 3.

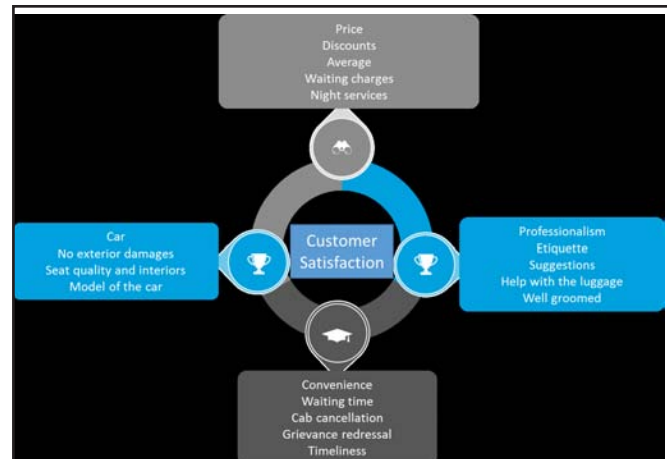


Fig. 3: SERVQUAL for Taxi Industry

Source: Parasuraman et al. 1988.

### The Research Question

Based on the above research findings, an empirical research was undertaken to find out whether price, professionalism, car, and convenience lead to customer satisfaction in the taxi-service industry in our country.

Diagrammatically, the research question leads to the conceptual model as shown in Fig. 4.

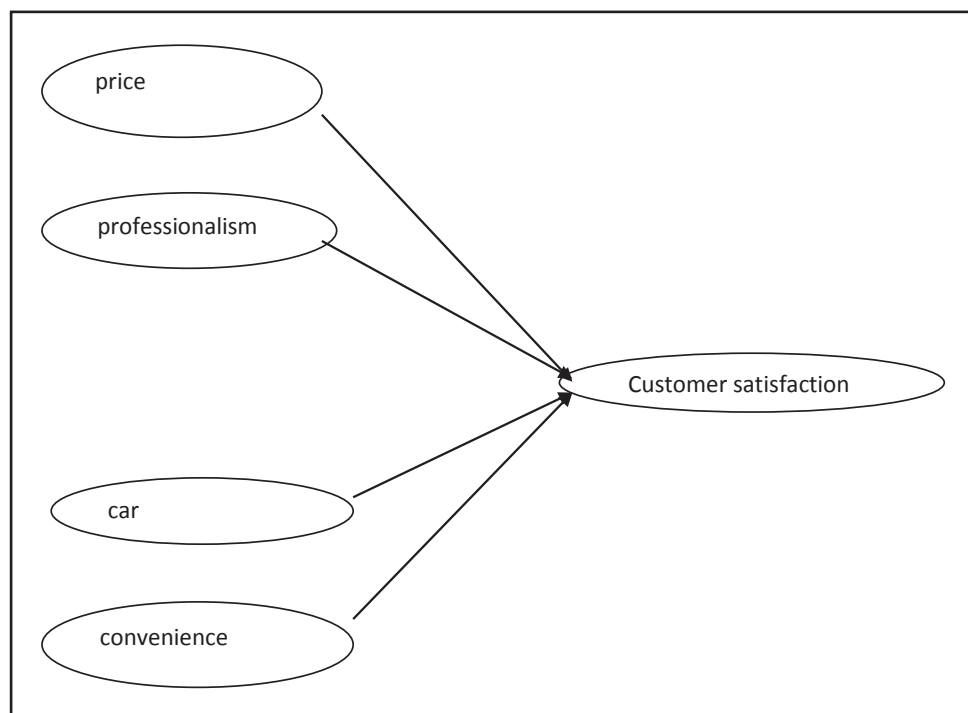


Fig. 4: Conceptual Model Showing Possible Linkages between Price, Professionalism, Car, Convenience and Customer Satisfaction in the Taxi Service Industry in India

## Data Collection Method

### Invitation Online Sampling

In the survey, non-probability method of sampling was used with samples of Internet users employed. The complete random sampling method of data collection would have yielded better results. However, for random sampling one would need a sampling frame, list of items in the population, from where random sample could be drawn. No such sampling frame could be made available at that point of time so the researchers had to take recourse to non-probability method of sampling. One time survey was been launched to collect responses with a target of more than 120. The respondents having the survey online link would be able to participate in the survey conducted.

- **Login Id Protected:** The survey can be filled only once from a login id. This helped us to avoid the duplicate responses. Email login id of each response would be recorded
- **Reminder Invitation:** Invitations helped us to remind our potential respondents, so that they won't miss to join our survey.
- **Summary of the survey findings** also has been presented to the respondents (as we believed that the action could motivate the respondents to answer the questionnaire).

**Advantages:** Cost of research is low and faster response rate is possible with this sampling method.

**Limitation:** It suffers from the same limitations as that of non-probability sampling. Thus the sample was perhaps not totally representative of the population. Also the

relationship between the sample & the population was unknown.

### Sample Size & Margin of Error

Here the level of confidence is considered as 95% which is the industry standard. Margin of error is taken as 10%. Based on this data, the sample size is arrived using the following formula:

$$n = z^2 / (4 * \text{Margin of Error}^2)$$

The above formula holds for a target population which is infinite. For such an infinite population the required sample size for 10 % margin of error and 95% level of confidence works out to 100.

Thus a sample of size 100 at least is required.

However, in this research, 120 responses were collected from target population.

Out of the total responses, 15 responses are discarded as the extreme responses, outliers. Extreme responses are defined as the responses having entirely 1's or 5's (on a 5 point-Likert scale) throughout a response.

Hence, the final sample size considered for analysis is n= 105.

### Questionnaire

Six different categories of responses collected using the questionnaire is structured as shown in Fig. 5.

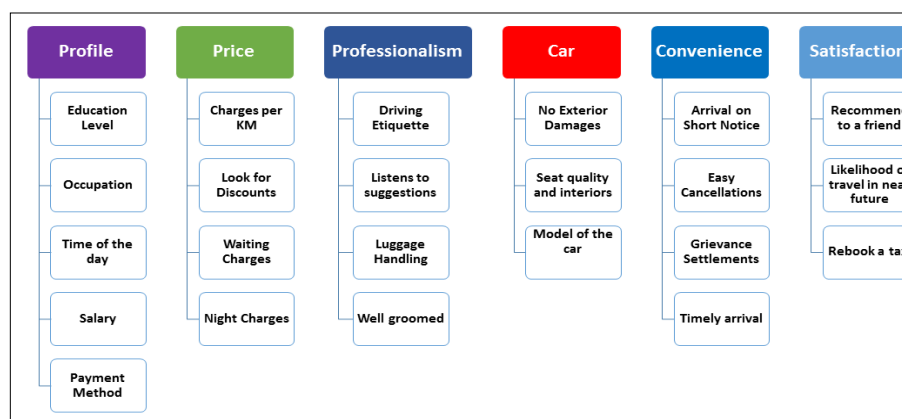


Fig. 5: Categories of Responses

## Gap Analysis

On analysing the responses collected, there were five attributes on which level of importance are obtained on a 5 point scale. The five attributes are presented as follows:

- Importance attributed to price while hiring a cab
- Importance attributed to the professionalism of driver
- Importance attributed to easiness of booking
- Importance attributed to quality of cab hired
- Importance attributed to responsiveness of cab service providers

**Price** attribute includes the discounts given, waiting charges, per km charges & night time charges levied. **Professionalism** attribute includes driving skills, soft skills & etiquette of driver.

**Convenience/easiness of booking** attribute denotes the level of easiness while booking a cab, addressing customer grievances & user interface (in case of App based) of the service provider.

**Car quality** attribute includes the car model & interiors.

Also another attribute, **responsiveness**, was included referring to the availability of instant cab service.

**t-Value Computation:** t-Value is computed using the following formula:

$$t = (\text{Sample Mean} - 2.5) / \text{Standard Error}$$

Here cut off level is taken as 2.5, which is the median of the scale. The level of significance is taken as 5%. t-Value is associated with null hypothesis as follows (based on one tail test):

$$H_0: t\text{-Value} \leq 1.645$$

$$H_1: t\text{-Value} > 1.645$$

Thus if t-Value is greater than 1.645, the attribute is considered to be significantly important by the market. Out of the five attributes, four attributes are considered to be significant by the market.

Thus it emerges that price of hiring a cab, professionalism of driver, easiness of booking & responsiveness of cab service providers are the significantly important attributes considered by the market.

**Table 2: Average Importance Ratings on the Attributes Associated with Cab Services**

Attributes	Importance Mean	t-Value
Price of hiring a cab	3.63	9.265
Professionalism of driver	3.46	2.720
Convenience/Easiness of booking	3.56	4.263
Quality of cab hired	2.39	1.094
Responsiveness of service providers	3.74	12.027

## Structural Equation Modelling

Structural Equation Modeling (SEM) is an analytical method that provides parameter estimates of the direct and indirect links between observed and unobserved variables. This method is similar to regression in that there is a quantification of relationship between dependent and independent variables. In fact it constitutes a series of regression equations between various categories of variables considered in the research. One of the unique features of SEM is its ability to provide parameter estimates for relationships among unobserved variables or latent constructs (Sroufe *et al*, 1999) which are measured using indicator or manifest variables. These variables again are obtained from respondents in response to questions in the questionnaire.

The convergence of the model is evaluated by Chi Square, associated degrees of freedom and the significance level, p-value, which should be greater than .05 for acceptance of the model.

In this multivariate modeling approach the series of regression equations ultimately lead to an acceptable model as evaluated by various indicators of goodness of fit such as Chi-square value, overall model p-value, CFI, NFI etc. SEM is a largely confirmatory, rather than exploratory, technique. That is, researchers are more likely to use SEM to determine whether a certain model is valid, rather than using SEM to “find” a suitable model-although SEM analyses often involve a certain exploratory element.

In order to apply structural equation modeling, the research considered the following constructs:

Price related attributes,  
 Professionalism of driver,  
 Convenience  
 Quality of car hired  
 Responsiveness of service providers.

First the Cronbach’s alpha was computed for each of these constructs.

Cronbach’s alpha is a measure of internal consistency, that is, how closely related a set of items are as a group. It is considered to be a measure of scale reliability.

Cronbach’s Alpha for price: = 0.4. It was therefore decided not to use Price construct in the model.

Cronbach’s Alpha for driver/professionalism = .803

Cronbach’s alpha for convenience = .816

Cronbach’s alpha for car condition = .829

Cronbach’s alpha for customer satisfaction was = .786

Upon running the model the indicators of goodness of fit were as shown I Table 3.

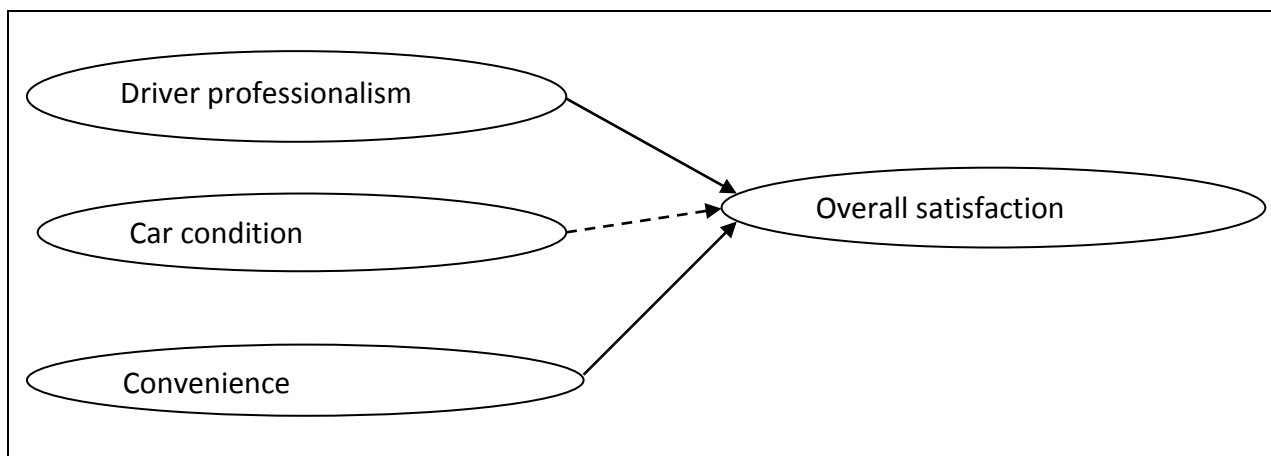
**Table 3: Indicators of Goodness of Fit**

Indicator		Our model	Remark
Chi-square/df		1.165	Good Fit
P-value overall		0.167	Good Fit
CFI		0.95	Acceptable Fit
NFI	.849		Acceptable fit

The estimates of result of AMOS output for the model were as follows:

	Estimate	S.E.	C.R.	P	Label
overallsatisfaction <--- driver	.975	.313	3.115	.002	
overallsatisfaction <--- car	2.889	18.791	.154	.878	
overallsatisfaction <--- convenience	.921	.291	3.161	.002	

Thus the final SEM model is as shown in Fig. 6.



**Fig. 6: Final Model Obtained from Structural Equation Modeling**

The continuous arrows indicate significant impact

Dotted lines indicate that the associated arrow may not be significant.

Following observations and conclusions can be made based on the results obtained above.

For driver professionalism and convenience, critical ratio came out to be > 1.96 and p value < 0.05.

Hence, driver professionalism and convenience were found out to be having a significant impact on overall satisfaction

As observed from the outcome of the model Driver professionalism and convenience of booking significantly impact overall satisfaction but car-condition does not. This perhaps could be explained by the fact that customers

in general assume the car to be in good condition for all taxi service companies. So this does not constitute a differentiating factor.

## Suggestions for Improving the Research

In the Structural Equation Modeling, the price construct was not considered because it had a low level of Cronbach's alpha. However, in the exploratory research comprising the t-test it was considered most important.

Thus, the price construct would need to be investigated more, perhaps through qualitative analysis in the sense one would need to check what exactly the customers look for in price.

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