CHAPTER-VII

ANALYSIS OF USERS SATISFACTION TOWARDS HARYANA STATE TRANSPORT SERVICES
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Customer satisfaction forms the core of all marketing strategies in today’s competitive scenario. Satisfaction is a relative term and it differs from situation to situation and from person to person. Feelings a key determinant in satisfaction level, can be a mix of perceptions, expectations and actual experiences. Passenger transportation services can be understood as a bundle of satisfactions. Some of these satisfactions are tangibles; frequency and reliability, efficiency of counter service, quality of the vehicles of transportation and of the terminal facilities; courtesy and efficiency of transport personnel, comfort and conveniences of travel; and the speed, safety and price of the services being offered. Other passengers’ satisfactions, however, are intangible and may thought of as psychological image, how comfortable a traveler feels and many other subjective considerations. Although the supply of passenger transportation services is influenced by the market function, the major thrust traditionally has been toward the demand for these services. The salient features of transportation demand can be categorized as:

1. Instantaneous
2. Extreme Variability
3. Multiplicity
4. Inter model competition
5. Intra model competition
6. Intra class substitutability
7. Income elasticity
8. Conditions of service and non price competition

Passenger road transport being a service industry, quality of service has a special significance with reference to customer satisfaction. In order to constantly add value to the transport service and contemplate strategic action, transport corporations need to stay close to the traveling passenger. It is therefore, essential to establish a system that transmits customer feedback to transport management periodically and in time to enable prompt corrective action wherever necessary. Hence, the importance of the concept of users' satisfaction and its vital role in ensuring better quality of service in bus operations.

USERS' SATISFACTION

The user of the transport system contributes major inputs to the operation of the system and is the first to realise its quality. In terms of the inputs, the user contributes his or her time, out of pocket costs and fares, accident risk and personal efforts. In terms of output of the journey he moves from one place to another, level of comfort and contentment. It is therefore, apparent that productivity and efficiency of the operator must be synchronized with satisfaction of the user.

Methodology

To assess the satisfaction of the users of Haryana Roadways Transport Corporation service a questionnaire was administered with random sampling method. The Haryana Roadways Transport Corporation has 20 Depots and 17 Sub-Depots at present with 3133 buses which carry 10.87 lakhs passengers and travel a distance of 10.71 kms per day (as on 31.3.2008).

For the purpose of this study sample has been chosen from the Rewari and Rohtak cities of Haryana. Both cities have separate depot and bus terminals. From both the...
depots intra state and inter state services are provided and both are important link points in the state.

A questionnaire was developed by including **30 statements in 5 categories** where each category represents an element of quality such as safety, punctuality, regularity and frequency, comfort and convenience, quality of crew and social orientation. The statements were developed in such a fashion that the agreement with the statement would denote presence of the (high) quality and disagreement would denote absence of the (poor) quality. The respondents were asked to record their agreement or disagreement to the statements on a **5 point scale** ranging from strong agreement to the strong disagreement. An example is given below:

Haryana Roadways Bus generally reaches the destination in time:

<table>
<thead>
<tr>
<th>SA</th>
<th>A</th>
<th>UD</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>SD</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Where

SA - Strongly Agree
A - Agree
UD - Undecided
D - Disagree; and
SD - Strongly disagree

A total of **200** respondents were selected at random (100 each) from both the cities. Out of these 200 respondents 160 are Intra State and 40 are Inter State passengers. The respondents were administered a structured questionnaire and their remarks were noted down. Every 5th passenger at the bus stands of both the cities (Rewari and Rohtak) was selected for the purpose. Care was also taken to see that the respondents belonging to peak hour and slack hour traveling groups were included in the sample.
Service Quality Parameters

In order to study the perception of passengers it was decided to evaluate quality by selecting a sample of 50 passengers (pilot study) who were given 50 statements each and were asked to classify them into 5 different classes namely safety, punctuality, regularity and frequency, comfort and convenience, quality of crew and social orientation. The passengers were also requested to evolve new categories and statements if they wished so. The examples of statements given to respondents for classification are (a) buses do not ply very fast (b) buses generally leave the origin in time (c) crew of buses are honest in their dealings etc. Finally 30 statements were selected for the preparation of the questionnaire based on a consistency of classification of 80 percent of the passengers. Each category contained 6 statements.

1. Safety
   I. Over Speeding  
   II. Running condition of the vehicle  
   III. Slowing down at turnings  
   IV. Running in competition with other vehicles  
   V. Stopping enough time for the passengers to get in and get down; and  
   VI. Sudden braking (related to rash driving)

2. Punctuality related to departures and arrivals of the buses, regularity and frequencies of the buses
   I. Punctuality in leaving the origin  
   II. Punctuality in reaching the destination  
   III. Punctuality in maintaining the timings at intermediate stops  
   IV. Cancellation of scheduled trips  
   V. Breakdowns; and  
   VI. Frequency of availability
3. **Comforts and Conveniences in the Bus**
   I. Quality of seats
   II. Quality of gangway
   III. Leakage of roof during monsoon
   IV. Quality of shutters and wind screens
   V. Provision of luggage racks
   VI. Cleanliness of stage carriages

4. **Quality of Crew**
   I. Behaviour of crew
   II. Efficiency of crew in the discharge of duties
   III. First aid capability of crew
   IV. Honesty of the crew
   V. Stopping of stage carriages at stops; and
   VI. Dress and cleanliness of crew

5. **Social Orientation**
   I. Operation of late night trips
   II. Operation of early morning trips
   III. Trips to interior villages
   IV. Trips exclusively for the benefit of the students
   V. Extra trips for special occasions; and
   VI. Provision of concession in fares to students and handicapped persons

**Satisfaction Scale**
The bus users’ satisfaction of each sample has been measured through a scale named as Users’ Satisfaction Scale (USS) for the purpose of this study. Scores have been
assigned to the responses of the users to the various questions regarding the various aspects of their travel in Haryana Roadways buses.

In order to analyse the data gathered from the passengers, the scaled responses were assigned scores ranging from 2 to -2 as follows:

- Strongly Agree: 2
- Agree: 1
- Undecided: 0
- Disagree: -1
- Strongly disagree: -2

Since each component of quality contained 6 statements, the total (sum) score for any component could vary between 12 and -12 (6*2 and 6*-2).

**Analysis of the Data**

The classification of respondents on the basis of the sum of the scores of the responses tabulated for each component of quality of service are incorporated in Tables as discussed in the coming section of this chapter.

**1. Users’ Satisfaction with regard to Safety**

To measure the perception of passengers traveling by Haryana State Transport buses both in the state and outside the state with regard to safety as many as six aspects related to safety of the journey were incorporated in the questionnaire. As discussed earlier users gave their scores on the basis of their assessment of the safety aspects in the buses of transport. Following table highlights the percentage of users satisfied with regard to safety in the buses and scores given by them both for inter state and intra state journey:
TABLE 7.1

USERS’ SATISFACTION WITH REGARD TO SAFETY

<table>
<thead>
<tr>
<th>Score</th>
<th>Intra - State Transport Operation</th>
<th>Inter – State Transport Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Count</td>
<td>Percent</td>
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<tr>
<td>-1</td>
<td>21</td>
<td>13.13</td>
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<tr>
<td>0</td>
<td>19</td>
<td>11.87</td>
</tr>
<tr>
<td>1</td>
<td>39</td>
<td>24.38</td>
</tr>
<tr>
<td>2</td>
<td>74</td>
<td>46.25</td>
</tr>
<tr>
<td>Total</td>
<td>160</td>
<td></td>
</tr>
</tbody>
</table>

Source: Field Survey

74 passengers out of 160 i.e. a percentage of 46.25 in Intra State Transport Operation category strongly agree that buses of Haryana State Transport are safe to travel and they gave a positive response to all the statements formulated for the purpose of measuring safety aspect. 24.38 percent of the passengers are satisfied with regard to safety aspect of the buses and 11.87% among them are neutral. Also 28 passengers out of 160 (17.50%) are not satisfied with the measures of safety adopted in the buses.

However, in Intra State Transport Operations 55% of the passengers are completely satisfied and 27.5% of them are moderately satisfied with the safety aspects of the buses traveling from Haryana to another states. This indicates that safety conditions are better in Inter State Operations in comparison to operations with in the state. Also, only 12.5% of the passengers are not satisfied with the safety practices of HST buses.
The same can also be analysed from the comparative bar diagram of both types of operations carried out by the Haryana State Transport. Following graph highlights the different types of responses given by passengers traveling by the buses of Haryana State Transport.

GRAPH 7.1

USERS' SATISFACTION WITH REGARD TO SAFETY

Source: Field Survey
### TABLE 7.2

**USERS' SATISFACTION WITH REGARD TO PUNCTUALITY, REGULARITY AND FREQUENCY**

<table>
<thead>
<tr>
<th>Score</th>
<th>Count</th>
<th>Percent</th>
<th>Score</th>
<th>Count</th>
<th>Percent</th>
</tr>
</thead>
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<td>-2</td>
<td>4</td>
<td>10</td>
</tr>
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<td>23</td>
<td>14.38</td>
<td>-1</td>
<td>3</td>
<td>7.5</td>
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<tr>
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<td>27</td>
<td>16.87</td>
<td>0</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>1</td>
<td>38</td>
<td>23.75</td>
<td>1</td>
<td>8</td>
<td>20</td>
</tr>
<tr>
<td>2</td>
<td>58</td>
<td>36.25</td>
<td>2</td>
<td>23</td>
<td>57.5</td>
</tr>
<tr>
<td>Total</td>
<td>160</td>
<td></td>
<td></td>
<td>40</td>
<td></td>
</tr>
</tbody>
</table>

Source: Field Survey

To assess the users' satisfaction with regard to punctuality, regularity and frequency of buses, opinions of the travelers were obtained with regard to punctuality of buses in leaving the origin, reaching destination at time, cancellation and breakdowns of buses and frequency of availability of buses for various routes etc. Again the results indicate that more no. of users are satisfied in case of inter state operations in comparison to intra state operations of Haryana State Transport buses. 77.6 % of the passengers in Inter- State Operations category are satisfied with the punctuality, regularity and frequency of the buses in comparison to 60 percent in the intra state category. It has also been observed by the researcher during the course of the survey that intra state trips are more prone to cancellation in comparison to inter state trips of the transport buses. The percentage of dissatisfied passengers is also higher in case of intra state operations category vis-à-vis inter state operations category. In first category 23
percent of the travelers are not satisfied with the services but the same percentage is only 17.5 percent in case of passengers of inter state operations.

The position mentioned as above can also be analysed graphically with the help of following bar diagram:

GRAPH 7.2

USERS' SATISFACTION WITH REGARD TO PUNCTUALITY, REGULARITY AND FREQUENCY

Source: Field Survey

142
TABLE 7.3

USERS' SATISFACTION WITH REGARD TO COMFORT AND CONVENIENCE

<table>
<thead>
<tr>
<th>Score</th>
<th>Count</th>
<th>Percent</th>
<th>Score</th>
<th>Count</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>-2</td>
<td>11</td>
<td>6.87</td>
<td>-2</td>
<td>2</td>
<td>5</td>
</tr>
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<td>44</td>
<td>27.50</td>
<td>1</td>
<td>12</td>
<td>30</td>
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<tr>
<td>2</td>
<td>73</td>
<td>45.63</td>
<td>2</td>
<td>21</td>
<td>52.5</td>
</tr>
<tr>
<td>Total</td>
<td>160</td>
<td></td>
<td></td>
<td>40</td>
<td></td>
</tr>
</tbody>
</table>

Source: Field Survey

To assess the comfort and convenience in the buses respondents were asked to give their opinion with regard to the quality of the seats, quality of gangway, leakage in the buses in rainy seasons, shutters and wind screens in the buses, provision of luggage racks, cleanliness in the buses and also at bus stations.

The table above highlights that 82.5% of the passengers in second category are satisfied as against a percentage of 73% in case of first category with regard to comfort and convenience of the journey by the buses of Haryana State Transport. Also more no. of passengers are dissatisfied with the comfort and convenience aspect of Haryana State Transport in case of Intra State Operations in comparison to Inter State Operations of the Transport Buses.

The difference in the perceptions of passengers of both the categories can be attributed to the fact that more no. of buses of latest models, Air Conditioned Buses, and Haryana Gaurav – Aam Aadmi ki Khas Bus” etc. travels on inter state routes in comparison to internal routes of Haryana.
The responses of the passengers of both the categories with regard to this aspect are depicted graphically in the following graph:

GRAPH 7.3
USERS' SATISFACTION WITH REGARD TO COMFORT AND CONVENIENCE

Source: Field Survey
The next aspect considered is related to the quality of crew used in the Haryana State Transport buses. The crew includes both driver and conductor in it. The quality of the crew has been analysed with the help of the variables such as behaviour of crew with passengers especially with women and elderly people, efficiency of crew, availability of first aid, honesty of crew, cleanliness in the bus and uniform of crew members etc. 55 percent of the passengers in intra state and 60 percent of passengers in inter state category are satisfied with the behaviour of crew members towards them. However, a large percentage of travelers i.e. 45 percent and 40 percent respectively in both the categories are not satisfied with the behaviour of the staff members of the buses. The common complaints of passengers are related with the arrogant attitude, use of rough and abusive language by them, non-cooperation, fighting with travelers on the issue of change, not stopping the bus at the approved stoppages etc.

Source: Field Survey
To impart the training of people handling, soft skills and behavioural aspects etc. seminars and training sessions should be organized by HST.

The responses of the passengers of both the categories with regard to this aspect are depicted graphically in the following graph:

GRAPH 7.4

USERS' SATISFACTION WITH REGARD TO QUALITY OF CREW

Users' Satisfaction with regard to Quality of Crew

Source: Field Survey
TABLE 7.5

USERS' SATISFACTION WITH REGARD TO SOCIAL ORIENTATION

<table>
<thead>
<tr>
<th>Score</th>
<th>Score</th>
<th>Count</th>
<th>Count</th>
<th>Percent</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>-2</td>
<td>-2</td>
<td>18</td>
<td>2</td>
<td>11.25</td>
<td>5</td>
</tr>
<tr>
<td>-1</td>
<td>-1</td>
<td>23</td>
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<td>14.37</td>
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<td>40</td>
<td>11</td>
<td>25</td>
<td>27.5</td>
</tr>
<tr>
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<td>2</td>
<td>71</td>
<td>24</td>
<td>44.38</td>
<td>60</td>
</tr>
<tr>
<td>Total</td>
<td>Total</td>
<td>160</td>
<td>40</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Field Survey

The aspect of social orientation has been tested with the help of variables like operationalisation of late night and early morning trips by HST to major cities, trips to interior villages, trips for the benefit of students and pass holders, extra trips for social occasion such as "Suraj Kund Mela at Faridabad" etc.

The findings of the studies reveal that most of the passengers are satisfied with regard to these variables as mentioned above except in few cases where special buses for maroon places and special buses for students are not available.

As many as 70% of the passengers in the first category and 88% in second category are satisfied and they were of the opinion that late night and early morning bus services to major cities such as Delhi, Chandigarh, Gurgaon and Jaipur etc. is available from all the district headquarters of the state.

However, 25 percent passengers in First category and only 10 percent of the travelers in second category do not agree with the statements mentioned in the questionnaire.
Thus, it can be concluded from the analysis that Inter State Operations category has more no. of satisfied passengers in comparison to Intra State Operations category.

The responses given by different respondents of both the categories have also been shown graphically in the following graph:

**GRAPH 7.5**

**USERS' SATISFACTION WITH REGARD TO SOCIAL ORIENTATION**

**Users' Satisfaction with regard to Social Orientation**

Source: Field Survey
Revealed Preference of the Users

The Researcher is much benefited in receiving a package of constructive proposals to improve the HST services at different levels. From the users' point of view the following areas are to be taken care of by the management:

1. Cleaning the bus middle lane and filling up drinking water containers in between stop-over.
2. Broadening of the leg space.
3. Apportioning more space for light baggage inside the bus.
4. Periodical check-up of the buses' seats and handles etc.
5. Provision for proper ventilation and light through shutters (windows).
6. Provision of Newspapers/Magazines etc. during the journey.
7. Installation of machines for snacks and drink bottles inside the bus.
8. Provision for music inside the bus.
9. Avoidance of too many stops during the day time journey.
10. Stop-over only at approved hotels on the high way.
11. Avoidance of rash and negligent driving.
12. Courteous behaviour of conductors towards all kinds of customers.

It is true that transportation service is not one way. Passengers can equally contribute to improve service quality. Passengers should extend their complete cooperation to the conductors and drivers of the buses. Passengers should tender exact fare, while taking the ticket to avoid the problem of change. One conductor versus 100 passengers should be kept in mind whenever a passenger deals with a conductor. The transportation system thus means operations of four agencies. The operator, namely HST in this case, receives inputs from users, the society and the government, while it delivers services primarily to the users but indirectly to the society at large.
and the Government. The continuous flow of inputs is essentially a closed system and quality cannot be achieved unless equilibrium exists between support received and support provided by each of the four actors of the system. It is imperative to conceive the system in its totality and then to dissect the overall system appropriately for achieving quality of service in the transportation system. Service is a great marketing bargain. Effective service helps in building stable, long-term relationships with users-so essential for HST’s maintaining image and growth. And only by being in constant touch with the user and monitoring user needs and preferences, can user strive to meet and satisfy their expectations. In the future, between services is likely to become the key competitive weapon. For quality’s sake HST should adopt a user driven culture because satisfaction is the ultimate criterion for success.

Environmental & Social Aspects

Road projects generally improve economic and social welfare of people, reduce travel time, lower cost of vehicle operation and improve access to markets, medical and educational facilities. However, people in the direct path of the roads are affected due to loss of community assets. Other adverse impacts could be soil erosion, interference with animal and plant life. It is, therefore, essential to carry out social and environmental impact assessments to ensure that the individuals affected adversely are compensated and resettled adequately and mitigation measures to reduce the adverse environment impact are put on ground. The World Bank and the ADB also mandate such requirements as per their policy and guidelines as part of loan assistance programmes and execution of works by the implementation agencies.

7.1.1 The adverse impact of highways on the environment may be in the following ways:-

- Noise
- Air pollution
7.1.2 Vehicles are a major source of pollution. The automobile industry is well proved to meet progressive tighter emission norms for various categories of vehicles. The Government has also laid down emission standards. Apart from strict emission norms for new vehicles, attention has to be paid for regular maintenance and inspection of vehicles to ensure sustained emission performance. The automobile industries and vehicle operator should act in unison to bring about improvements in this direction.

7.2 Environment Aspects

(i) With increase in traffic volumes over years, suitable mitigation measures need to be in-built in design and construction of roads to preserve the environment. The Environment Impact Assessment (EIA) Notification in 1994 of the Ministry of Environment and Forests (MOEF) requires central government clearance for highway projects costing more than Rs.50 crore. However, four-laning and widening projects have been exempted from obtaining such clearance. Roads in the Himalayan region and forest area, regardless of investment value, are subject to EIA.

Several states are now ensuring adherence to these provisions and put in place environment management plan for all projects sequel to preparation of Environment Impact Assessment (EIA).

7.3 Social Concerns

Several states are now mandating requirements of rehabilitation and resettlement of people affected due to various infrastructure and industrial projects including roads. These aspects are new getting incorporated at the time of preparing Detailed Project Reports and a proper R&R Plan is then implemented before actual execution of works on the ground.

7.4 Forward Path

The following actions can go a long way in effectively tackling of the environment and social impacts resulting from upgradation of road projects.

(i) Creation of special cells in the MORT&HB/NDAI/PWDs of States / UTs to coordinate all activities related to environmental impacts of highway projects.

(ii) The social dimensions of resettlement and rehabilitation of affected people must be incorporated in all highway projects involving displacement
of people at the project preparation stage itself and proper R&R plan implemented before execution of works.

(iii) Removal of encroachments on NH/SH & MDR land and to prevent future encroachments.

(iv) A Corridor Management Plan should be drawn up for major state highways so that the problems of ribbon development, encroachments, uncontrolled access and poor safety can be tackled.

(v) Control on roadside advertisements to preserve the visual aesthetics.

(iv) Consideration may be given to recycling of existing pavements to reduce the need for more road building aggregates.

(v) Promotion of use of waste materials such as fly-ash and copper slag, etc.

(vii) Use of bio-engineering techniques for protection of slopes in hill areas and reducing risk of landslides.

(viii) Implementation of the Control of National Highway (Land and Traffic Act), 2002 for improved traffic management and control of access on National Highways.

(ix) Upgradation of vehicle technology to meet the future emission standards laid down by the Government.

(x) An effective Inspection and Maintenance programme of in-use vehicles.
7.5 Measures for Energy Conservation, Environmental Protection and reduction in pollution

In view of ever increasing prices of petroleum products, there is urgent need to undertake research on conservation of energy with special reference to its impact on environment. In order to contain air and noise pollution stricter steps needs to be taken at National level. Efforts needed in this area during the next five years are:

1. Use of marginal materials and development of new technologies for saving energy and materials in road construction.
2. Development of relationship between traffic and air pollution for different scenario such as Terrain, Traffic Volume, Traffic mix, vehicle speed, speed restrictions, road width & conditions, roadside features, etc.
4. Development of air and noise pollution model for Indian conditions.
5. Development of mitigation techniques to reduce air & noise pollution.

7.6 Measures for effective Land Management for optimum utilization of road capacity.

Road network increases the accessibility and hence the development of business alongside road takes place in the absence of any effective control through planning, policies and legislation. Therefore, while acquiring land for road projects, provision should also be made for acquiring land for providing wayside amenities. In order to avoid encroachments, the encroachers should be dealt severely by making it a cognizable offence. The powers given to the Highway Administrations under the Control of National Highways (Land & Traffic) Act, 2002 needs to be suitably supplemented by proper institutional arrangements and
supporting structure including providing actual support of local administration at the field level to make the enforcement of the provisions under the Act effective.

The following areas also require critical considerations:

1. Need for policy on utilization of right of way (ROW) of National Highways.
2. Study the implementation of various provisions of the Control of National Highways (Land & Traffic) Act, 2002, its effectiveness and the modifications required.
3. Need to establish guidelines for Asset Management inventories, creation and updating of relevant records.
4. Need for developing intervention criteria for maintenance/ rehabilitation/disposal of highway assets.
5. Need to develop norms for depreciation of road assets to establish the market value of a road stretch. This will be quite relevant for BOT/Annuity projects.
6. Need to develop norms for road user participation in highway asset management. This aspect will gain importance once GQ/NHDP will be tolled and road user will demand quality service for their payments.
7. Need to develop norms for establishing ROW boundaries understandable to Engineers for effective land management.
8. Establishing norms for setting up wayside amenities for all income group road users.
9. Need to study impact of ribbon development on speed, accidents & road capacity.

Need to study impacts of road access on speed, accidents and feasibility of paying charges for access denial/permission on road capacity.
References


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