CHAPTER 3: RESEARCH OBJECTIVES AND RESEARCH METHODOLOGY

3.1 Introduction

This chapter will present a detailed idea about the methodology followed in conducting this research. It will start with the objectives to be achieved in this study followed by the framework to conceptualize and operationalise those research objectives. It also highlights the sampling technique, data collection methods, questionnaire development and brief idea about data analysis tools. At the end of the chapter validity and reliability issues will be discussed to follow the quality standards of the research.

3.2 Objectives of the Study

Following are the broad objectives of the study:

1) To study the trends of online marketing as adopted by Indian railways.
2) To measure the perception, beliefs and attitude of consumers in India towards online marketing, the opportunities offered by it and the challenges posed by it.
3) To measure the perception, beliefs and attitude of Indian railway department in India towards online marketing offered by Indian railways, the opportunities offered by it and the challenges posed by it.
4) To measure the perception, beliefs and attitude of travel agents in India towards online marketing offered by Indian railways, the opportunities offered by it and the challenges posed by it.
5) To suggest an appropriate model for an effective online marketing in Indian railways.

3.3 Conceptualization and Operationalisation of Objectives

3.3.1 To study the trends of online marketing as adopted by Indian railways.

Under this objective pace and pattern of technological developments undertaken by Indian Railways will be studied. It will cover following concepts namely: Trends of
online ticket reservation (1-Ticket, E-Ticket and Agents online booking), different earnings through online marketing (promotional mails, banners on site, confirmation mail, text link, PNR alert) of Indian Railways, online tourism services (Rail tour packages, holiday packages, Tourist Trains, Online hotel booking, Online cab facility as well as air Segements) and web server analysis for online marketing purposes.

3.3.2 To measure the perception, beliefs and attitude of consumers in India towards online marketing offered by Indian railways

Conceptualization

Technology Acceptance Model (developed by Davis in 1986) along with some external constructs will be used to measure the consumers’ perception, beliefs and attitude towards Online Marketing of Indian Railways which is being shown in figure 3.1. In this section different constructs of TAM with their respective hypothesis and indicators have been explained.

3.3.2.1 Perceived Usefulness (PU)

TAM model reported perceived usefulness as direct antecedent of attitude and behavioral intention. Chen et. al., (2002), and Heijden et. al., (2001) and Childers et. al., (2001) also found that perceived usefulness affects the attitude toward online shopping behavior of the consumer. In this study, it is a positive outcome of consumers when they use Online Marketing of Indian Railways, in this context following hypothesis is being proposed:

**H1**: Perceived Usefulness have positive impact on attitude towards Online Marketing of Indian Railways.

**H2**: Perceived Usefulness have positive impact on behavioral intention towards adoption of Online Marketing of Indian Railways.

**Indicators of Perceived usefulness**

1. Useful to purchase a ticket (PU1)
2. Saves time in purchasing a ticket (PU2)
3. Makes easier to buy a ticket (PU3)
4. Provides information in time (PU4)

3.3.2.2 Perceived Ease of use (PEOU)

This construct is also being adapted from TAM. This is an important antecedent of perceived usefulness and attitude. In this study, it refers to the degree to which consumers believe that using online marketing of Indian railways would be easy and simple, in this context following hypothesis are formulated:

**H3: Perceived Ease of Use has a positive impact on perceived usefulness of online marketing of Indian Railways.**

**H4: Perceived Ease of Use has a positive impact on attitude towards online marketing of Indian Railways.**

**Indicators of Perceived Ease of Use**

1. Easy to learn (PEOU1)
2. Easy to understand (PEOU2)
3. Simple (PEOU3)
4. Easy to use (PEOU4)
5. Interaction is clear (PEOU5)

3.3.2.3 Trust (TR)

Gefen et. al. (2003) introduced trust as third major belief in addition to perceived usefulness and perceived ease of use in predicting technology adoption. Egger 1999; Egger and Groot 2000, found that trust depends upon the firm’s reputation and its privacy policy. In this study trust refers to the consumers’ confidence in online marketing of Indian Railways.
H5: Trust has a positive impact on attitude towards online marketing of Indian Railways.

Indicators of Trust

1. Trustworthy (TR1)
2. Reliable (TR2)

3.3.2.4 Perceived Enjoyment (PE)

Goldsmith (2002) reported that perceived enjoyment is an important construct in determining online shopping behavior. In this study it could be defined as consumers perception that using online marketing of Indian Railways is interesting and a joyful activity.

H6: Perceived Enjoyment has a positive impact on attitude towards online marketing of Indian Railways.

Indicators of Perceived Enjoyment

1. Buying a ticket through internet is enjoyable (PE1)
2. Interesting (PE2)
3. Joyful activity (PE3)

3.3.2.5 Image (IM)

Image is one of the important determinants in technology adoption and attitude. Image could be defined as consumers' belief that use of online marketing of Indian railways is a status symbol and fits according to their lifestyle. To check this relation the proposed hypothesis is as follows:

H7: Image has a positive impact on attitude towards online marketing of Indian Railways.

Indicators of Image

1. Status symbol (IM1)
2. Improves image (IM2)
3. Fits into my lifestyle (IM3)
3.3.2.6 Subjective Norm (SN)

One of the major weaknesses of TAM model is non-consideration of subjective norm. In fact, this construct is one of the main constructs in many models like Theory of reasoned action and Theory of planned behavior. In order to overcome this weakness subjective norm has also been considered in the present study research model. Subjective norm refers to the degree of perceived social influence on consumers’ decision to use online marketing of Indian Railways. Ajzen 1991, found that subjective norm have positive effect on intention to perform behavior. In this context proposed hypothesis is given below:

**H8: Subjective Norm has a positive impact on attitude towards online marketing of Indian Railways.**

**Indicators of Subjective Norm**

1. People who influence my behavior think I should purchase a ticket through internet (SN1)
2. People who are important to me think I should get information about trains through internet (SN2)

3.3.2.7 Facilitating Condition (FC)

Facilitating condition has been tested in number of technology acceptance studies (Venkatesh, 2000). In the present study facilitating condition represents the degree of consumers’ belief about the availability of required resources and knowledge to use online marketing of Indian Railways. To examine the relation of this construct with attitude the proposed hypothesis is:

**H9: Facilitating Condition has a positive impact on attitude towards online marketing of Indian Railways.**

**Indicators of Facilitating Condition**

1. I have personal computer (FC1)
2. I have stable internet connection(FC2)
3. I have knowledge to use it (FC3)
3.3.2.8 Perceived Risk (PR)

Now a day's perceived risk is an important determinant in shaping the attitude and intention to use the online services. In case of online transactions individual may perceive various kinds of risks like financial risk, risk of privacy, illegal activities on internet etc. Perceived risk could be defined as uncertainties of possible negative consequences of using a product or service (Dehbashi, 2007). In present study perceived risk could be defined as the consumers' perceived lack of privacy, financial risk and risk of internet hackers. Therefore in the present research following hypothesis could be considered

H10: Perceived Risk has a negative impact on attitude towards online marketing of Indian Railways.

Indicators of Perceived Risk

1. Personal information is not safe (PR1)
2. Risk in monetary transactions (PR2)
3. Risk of internet hackers (PR3)
4. Money deducted without ticket booking (PR4)
5. Wastage of money (PR5)

3.3.2.9 Attitude (ATT)

In TAM model attitude is being defined as the intermediary affective rejoinder between perceived usefulness and ease of use beliefs and behavioral intentions to adopt internet based technologies. In this research attitude represents consumers' positive and negative feelings towards online marketing of Indian Railways that affects the intention to use it. So it can be concluded:

H11: Attitude has a positive direct impact on behavioral intention toward online marketing of Indian Railways.

Indicators of Attitude

1. It is good idea to buy a ticket through internet (ATT1)
2. I like the idea to get information through internet (ATT2)
3. It is pleasant to use (ATT3)
4. Using online services is wise idea (ATT4)

3.3.2.10 Behavioral Intention (BI)

Most of the researches have not concentrated on the relationship between behavioral intention and actual use. But behavioral intention toward actual use or adoption of online technology is an indication of decision maker’s readiness to adoption. It can be concluded that behavioral intention is significant predictor of actual use (Taylor and Todd, 1995; Pavlou, 2003). In the present study, behavioral intention refers to consumers’ perceived intention to adopt online marketing of Indian Railways. In this reference following hypothesis is formulated.

H12: Behavioral Intention has a positive direct impact on actual use of Online Marketing of Indian Railways.

Indicators of Behavioral Intention

1. It is better to buy a ticket through internet than going to reservation centre (BI1)
2. I will strongly recommend others to use it (BI2)
3. I will purchase a ticket through internet in near future (BI3)

3.3.2.11 Actual Use (AU)

Considering that online marketing in India is still relatively new, it is reasonable for the present study to focus on its adoption. Thereby, the link between behavioral intention and actual use is also being tested in this study.

Indicators of Actual Use

1. I will use it on regular basis (AU1)
2. I will use it frequently (AU2)

Operationalisation

All the indicators of the constructs of TAM will be measured on a five point likert scale ranging from Strongly Disagree = 1, Disagree = 2, Neutral = 3, Agree = 4 to Strongly Agree = 5. This scale is widely used to measure attitude.
3.3.3 To identify the main opportunities for consumers offered by Online Marketing of Indian Railways

Conceptualization

On the basis of review of literature and deep discussion with consumers, present study has considered following seven variables to identify the major opportunities offered by online marketing of Indian Railways to its consumers.

1. Convenient
2. Time saving
3. No long queues
4. Buying tickets 24/7 (at any time & from anywhere)
5. Price saving
6. Easy access to information
7. New technology experience

**Operationalisation**

The respondents will be asked to rank all the opportunities in order of their importance (Rank 1 for most important, 2 for 2\textsuperscript{nd} important and so on up to 7) why they opted for online marketing of Indian Railways. All the missing values (No response) will be replaced with median value 4.

3.3.4 To identify the major challenges posed by Online Marketing of Indian Railways

**Conceptualization**

On the basis of review of literature and deep discussion with consumers, present study has considered following nine variables to identify the major challenges posed by online marketing of Indian Railways to its consumers.

1. Very busy network
2. Risky to use credit card
3. Difficulty in cancellation or refund
4. Lack of online payment facility
5. Lack of privacy of personal information
6. Risk of wrong ticket
7. Expensive
8. Complex system
9. Don’t know how to use

**Operationalisation**

The respondents will be asked to rank all the challenges faced by them in order of their importance (Rank 1 for most important, 2 for 2\textsuperscript{nd} important and so on up to 9). All the missing values (No response) will be replaced with median value 5.
3.3.5 To measure consumers attitude towards the various online tourism and information gathering services of Indian Railways:

Conceptualization

Indian Railways is also providing information gathering and ordering different tourism services via internet. To measure consumers’ attitude towards various online tourism and information gathering services of Indian Railways; the present study will consider the following 10 variables:

1. Online ticket reservation
2. Fare enquiry
3. Train schedule
4. Seat availability status
5. Train arrival and departure time
6. Frequently asked questions
7. Loyalty programs
8. Tour packages
9. Hotel booking
10. Car rental

Operationalisation

Each of these dimensions will be measured on 5-point Scale where 5 stands for “Very Good”, 4 for “Good”, 3 for Average, 2 for “Poor” and 1 stands for “Very Poor”. To know the adoption level the respondents will be classified as Users and Non Users. To identify the non users’ one option of “Not Used” will also be given.

3.3.6 To identify the factors affecting consumers’ perception of online marketing service quality of Indian Railways:

Conceptualization

Majority of scales have been developed by different researchers for measuring online service quality namely e-SERVQUAL, WEBQUAL, and eTailQ, which seems to be the most inclusive ones amongst those reported in the literature to date. But most of the scales have been used in the e-retailing context. There is a need to evaluate
railway website which is a tourism website. In the present study ESERVQUAL developed by Parasuraman et al., 2005 will be employed. The present will modify the statements of the ESERVQUAL in order to tailor the model in the context of online marketing of Indian Railways. Finally, 21 statements will be developed measured on five point Likert scale (ranging from 1 = strongly disagree to 5 = strongly agree) to identify the factors affecting consumers perception of online marketing service quality of Indian Railways.

### 3.3.7 To measure consumers’ attitude towards Indian Railways website:

#### Conceptualization

This consists of following 13 dimensions of website quality and customer care:

1. Registration
2. navigation
3. Login
4. Look and Feel
5. online Booking
6. Phone Promptness
7. Phone quality
8. Email Promptness
9. Email quality
10. Refund
11. cancellation
12. I-ticket
13. E-ticket

All the statements were measured on 3-point scale (Good=1, Average=2 and Poor=3).

### 3.3.8 To examine factors resisting the Non-Users to adopt online marketing of Indian Railways:

#### Conceptualization

In order to attain complete adoption there is a need to examine the factors resisting consumers to adopt online marketing of Indian Railways. In this regard, the present
study conceptualizes multiple variables preventing consumers to adopt this new technology. The variables will be measured on a five point Likert scale (ranging from 1 = strongly disagree to 5 = strongly agree). The following 12 variables included in the study are as follows:

1. Do not have adequate knowledge of using computer and internet
2. Lack of awareness about the benefits of online services of Indian Railways
3. Lack of sufficient information about how to make use of online services (online reservation)
4. Fear of Security and Privacy of your monetary transactions
5. Fear of making error while feeding information
6. Online reservation system would be too complicated to operate
7. Lack of interest in using internet for ticket reservation
8. No access to internet at home or office
9. Not reliable to reserve a ticket through internet
10. May not receive correct information over the internet
11. Using online services is time consuming
12. It is expensive to use online services of Indian railways

3.3.9 To measure the perception, beliefs and attitude of employees of Indian railway department in India towards online marketing offered by Indian railways

Conceptualization

Technology Acceptance Model which is used to measure the employees' perception, belief and attitude towards Online Marketing of Indian Railways is shown in figure. In this section different constructs of TAM with their respective hypothesis and indicators have been explained.

3.3.9.1 Perceived Usefulness (PU)

TAM model reported perceived usefulness as direct antecedent of attitude and behavioral intention. In this study, it is a positive outcome of employees when they
use Online Marketing of Indian Railways, in this context following hypothesis is being proposed:

**H1:** Perceived Usefulness have positive impact on attitude towards Online Marketing of Indian Railways.

**H2:** Perceived Usefulness have positive impact on behavioral intention towards adoption of Online Marketing of Indian Railways.

**Indicators of Perceived usefulness**

1. Useful in my Organization (PU1)
2. Improves the performance (PU2)
3. Increases the productivity (PU3)
4. Enhances the effectiveness (PU4)
5. Makes easier to do business (PU5)
6. Enables to complete work faster (PU6)

**3.3.9.2 Perceived Ease of Use (PEOU)**

This construct is also being adapted from TAM. This is an important antecedent of perceived usefulness and attitude. In this study, it refers to the degree to which employees believe that using online marketing of Indian railways would be easy and free of effort, in this context following hypothesis are formulated:

**H3:** Perceived Ease of Use has a positive impact on perceived usefulness of online marketing of Indian Railways.

**H4:** Perceived Ease of Use has a positive impact on attitude towards online marketing of Indian Railways.

**Indicators of Perceived Ease of Use**

1. Easy to learn (PEOU1)
2. Easy to understand (PEOU2)
3. Easy to use (PEOU3)
4. Simple (PEOU4)
5. Easy to become skillful (PEOU5)
6. Free of effort (PEOU6)

3.3.9.3 Attitude (ATT)

In TAM model attitude is being defined as the intermediary affective rejoinder between perceived usefulness and ease of use beliefs and behavioral intentions to adopt internet based technologies. In this research attitude represents employees’ positive and negative feelings towards online marketing of Indian Railways that affects the intention to use it. So it can be concluded:

**H5: Attitude has a positive direct impact on behavioral intention toward online marketing of Indian Railways.**

**Indicators of Attitude**

1. Using it is a good idea (ATT1)
2. Beneficial in my organization (ATT2)
3. I like the idea of using it (ATT3)
4. Using it in job is pleasant (ATT4)
5. Using it is a wise idea (ATT5)

3.3.9.4 Behavioral Intention (BI)

Most of the researches have not concentrated on the relationship between behavioral intention and actual use. But behavioral intention toward actual use or adoption of online technology is an indication of decision maker’s readiness to adoption. It can be concluded that behavioral intention is significant predictor of actual use (Taylor and Todd, 1995; Pavlou, 2003). In the present study, behavioral intention refers to employees’ perceived intention to adopt online marketing of Indian Railways. In this reference following hypothesis is formulated.

**H6: Behavioral Intention has a positive direct impact on actual use of Online Marketing of Indian Railways.**
**Indicators of Behavioral Intention**

4. It is good to use it in addition to traditional methods (BI1)
5. I will strongly recommend others to use it (BI2)
6. I intend to use it in near future (BI3)

**3.3.9.5 Actual use (AU)**

Considering that online marketing in India is still relatively new, it is reasonable for the present study to focus on its adoption. Thereby, the link between behavioral intention and actual use is also being tested in this study.

**Indicators of Actual Use**

3. I will use it on regular basis (AU1)
4. I will use it frequently (AU2)

The proposed conceptual model of adoption of online marketing of Indian Railways among employees of Indian Railway Department has been shown in figure:

**Figure 3.2: Research Framework for employees**
Operationalisation

All the indicators of the constructs of TAM will be measured on a five point Likert scale ranging from Strongly Disagree = 1, Disagree = 2, Neutral = 3, Agree = 4 to Strongly Agree = 5. This scale is widely used to measure attitude.

3.3.10 To Identify the Opportunities for Employees as Offered by Online Marketing of Indian Railways

Conceptualization

On the basis of extensive review of literature and discussion with railway employees, the present study has considered following eight variables to identify the major opportunities offered by Indian Railways.

1. Possibility of improvement in organizations image
2. It helps to expand customer base
3. Impetus for new product development
4. Possibility of extra revenue through banner ads, text links, etc.
5. Helps in handling large volume of sales
6. Possibility of improved customer services
7. Possibility of shortening of supply chain
8. Possibility of reduced costs

Operationalisation

The respondents will be asked to rate all the opportunities on a five point Likert-type scale ranging from strongly disagree (1), Disagree (2), Neutral (3), Agree (4) to Strongly agree (5) on the basis of their agreement or disagreement. All the missing values will be replaced with neutral value 3.

3.3.11 To Identify the Challenges for Employees as posed by Online Marketing of Indian Railways

Conceptualization

The adoption of online marketing by Indian Railways has also posed several challenges. In order to identify the main opportunities offered by Online Marketing
respondents will be presented with a list of following eight variables.

1. Problem in conducting online transactions due to heavy load on server.
2. Premature termination of site before completing the transactions
3. Unauthorized access to confidential information
4. Resistance from channel members
5. Lack of training
6. Lack of infrastructure
7. Difficulty with integrating online system with existing system
8. Lack of availability of technology

**Operationalisation**

The respondents will be asked to rate all the challenges on a five point scale (ranging from 1= not at all to 5= Greater Extent). All the missing values will be replaced with mid value 3.

3.3.12 To measure employees’ attitude towards readiness to embrace online technology of Indian Railways

**Conceptualization**

Deep insights of review of literature reflect that people have both negative and positive attitude towards technology. The findings of Parasuraman, 2001, showed that people beliefs can be categorized into four segments on the basis of their attitude towards technology. Two of these segments- optimism and innovativeness are contributors while the other two – discomfort and insecurity are inhibitors. Relative strength of these positive and negative beliefs determines peoples’ receptivity of technology. The four segments are relatively independent. In other words, one can simultaneously harbor positive and negative feelings about technology.

**Optimism:** A positive view of technology and a belief that it offers people increased control, flexibility, and efficiency in their lives.

**Innovativeness:** A tendency to be a technology pioneer and thought leader.

**Discomfort:** A perceived lack of control over technology and a feeling of being overwhelmed by it.

**Insecurity:** Distrust of technology and skepticism about its ability to work properly.
The present study will employ following 10-items of Technology Readiness scale (Parasuraman, 2000), consisting of 2 items for optimism, 3 items for innovativeness, 2 items for discomfort, and 3 items for insecurity. All the items will be measured on a 5-point Likert-type scale ranging from strongly disagree (1), Disagree (2), Neutral (3), Agree (4) to strongly agree(5).

**Statements for optimism**

1. Use of internet in providing services is very exciting
2. Use of internet based technologies makes you more efficient

**Statements for Innovativeness**

1. Other people come to you for guidance on online technologies
2. I don’t need help of other people in using online technologies
3. You are among the first in your friend circle to learn internet based technology

**Statements for Discomfort**

1. It is very complicated to use internet based technologies
2. It is awkward when you have difficulty in handling online device while people are watching you

**Statements for insecurity**

1. Online technologies are not reliable
2. Internet is not safe for monetary transactions
3. Lack of privacy of information sent through internet

On the basis of the responses of the employees; technology readiness index will be computed. Based on their TRI score, they will be identified as Explorer, Pioneer, Skeptic, Paranoid, or Laggard. The scores will be computed on the basis of the guidelines given under technology Readiness scale.

**Optimism score:** It will be computed by taking the mean of 2 items measuring optimism of employees'.
Innovativeness score: It will be a mean of three items.
Discomfort score: Likewise it will be obtained by taking the average of two items.
Insecurity score: It will be calculated by taking the mean of three items.
TRI score: It will be computed by taking the average of all the above four dimensions as follows:

\[ \text{TRI} = \frac{\text{Optimism} + \text{Innovativeness} + (6 - \text{Insecurity}) + (6 - \text{Discomfort})}{4} \]

The employees will be further classified into four TR segments i.e. Explorers, Pioneers, Skeptics, Paranoids and Laggards on the basis of their TRI scores.

<table>
<thead>
<tr>
<th>TR Typologies</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explorers</td>
<td>Extremely high in technology readiness, ranking higher on driver and lower on inhibitors of adoption. They are easy group to attract when a new technology is introduced; they will comprise the first wave of customers.</td>
</tr>
<tr>
<td>Pioneers</td>
<td>Desire the benefits of the new frontier but more practical about the difficulties and dangers. Pioneers share the optimism and innovative tendencies of the explorers.</td>
</tr>
<tr>
<td>Skeptics</td>
<td>They do not believe strongly in technology and lack any desire for pure innovation.</td>
</tr>
<tr>
<td>Paranoids</td>
<td>Convinced of the fruits but unusually concerned about the risks. A Paranoid is like a child encountering a burning candle for the first time. The fame is fascinating, but also frightening and painful to touch.</td>
</tr>
<tr>
<td>Laggards</td>
<td>Never move unless are forced to do so. They opposite of explores are ranking lower in motivation and higher in inhibition than the market as a whole.</td>
</tr>
</tbody>
</table>

Source: Parasuraman and Colby (2001)
According to the guidelines of Parasuraman and Colby (2001) the employees TRI score will be computed as follows:

\[
\text{TRI score} = \text{Score of contributors (optimism and innovativeness)} - \text{Score of inhibitors (Insecurity and Discomfort)}
\]

Employees will be categorized on the basis of their scores following the criteria given in table:

Table 3.2: TR Typology

<table>
<thead>
<tr>
<th>Employees TRI Score</th>
<th>TR Typology</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 to 16</td>
<td>Explorer</td>
</tr>
<tr>
<td>1 to 6</td>
<td>Pioneers</td>
</tr>
<tr>
<td>0 to -4</td>
<td>Skeptics</td>
</tr>
<tr>
<td>-6 to -8</td>
<td>Paranoids</td>
</tr>
<tr>
<td>-10 to -16</td>
<td>Laggards</td>
</tr>
</tbody>
</table>

3.3.13 To measure the perception, beliefs and attitude of travel agents in India towards online marketing offered by Indian railways

Conceptualization

Technology Acceptance Model along with some external constructs is used to measure the travel agents perception, belief and attitude towards Online Marketing of Indian Railways which is being shown in figure. In this section different constructs of TAM with their respective hypothesis and indicators have been explained.
3.3.13.1 Perceived Usefulness (PU)

TAM model reported perceived usefulness as direct antecedent of attitude and behavioral intention. In this study, it is a positive outcome of travel agents when they use Online Marketing of Indian Railways in their agency, in this context following hypothesis is being proposed:

H1: Perceived Usefulness have positive impact on attitude towards Online Marketing of Indian Railways.

H2: Perceived Usefulness have positive impact on behavioral intention towards adoption of Online Marketing of Indian Railways.

Indicators of Perceived usefulness

1. Improves the performance (PU1)
2. Increases the productivity (PU2)
3. Makes easier to do business (PU3)
4. Enables to complete work faster (PU4)

3.3.13.2 Perceived Ease of use (PEOU)

This construct is also being adapted from TAM. This is an important antecedent of perceived usefulness and attitude. In this study, it refers to the degree to which travel agents believe that using online marketing of Indian railways in their agency would be easy, simple and free of effort in this context following hypothesis are formulated:

H3: Perceived Ease of Use has a positive impact on perceived usefulness of online marketing of Indian Railways.

H4: Perceived Ease of Use has a positive impact on attitude towards online marketing of Indian Railways.

Indicators of Perceived Ease of Use

1. Easy to learn (PEOU1)
2. Easy to understand (PEOU2)
3. Easy to use (PEOU 3)

4. Simple (PEOU4)

5. Easy to become skillful (PEOU5)

6. Interaction is clear (PEOU6)

3.3.13.3 Trust (TR)

Gefen et. al. (2003) introduced trust as third major belief in addition to perceived usefullness and perceived ease of use in predicting technology adoption. In this study trust refers to the travel agents confidence in online marketing of Indian Railways.

H5: Trust has a positive impact on attitude towards online marketing of Indian Railways.

Indicators of Trust

1. Provides reliable information (TR 1)
2. Trustworthy (TR 2)

3.3.13.4 Perceived Enjoyment (PE)

Goldsmith (2002) reported that perceived enjoyment is an important construct in determining online shopping behavior. In this study it could be defined as travel agents perception that using online marketing of Indian Railways is interesting and a joyful activity for their business.

H6: Perceived Enjoyment has a positive impact on attitude towards online marketing of Indian Railways.

Indicators of Perceived Enjoyment

1. Joyful activity (PE1)
2. Interesting (PE2)
3. I enjoy to use it (PE3)
3.3.13.5 Image (IM)

Image is one of the important determinants in technology adoption and attitude. Image could be defined as travel agents belief that use of online marketing of Indian railways in their agency is prestigious, status symbol and improves the image. To check this relation the proposed hypothesis is as follows:

**H7: Image has a positive impact on attitude towards online marketing of Indian Railways.**

**Indicators of Image**

1. Improves image (IM1)
2. Status symbol (IM2)
3. Prestigious (IM3)

3.3.13.6 Subjective norm (SN)

One of the major weaknesses of TAM model is non-consideration of subjective norm. In fact, this construct is one of the main constructs in many models like Theory of reasoned action and Theory of planned behavior. In order to overcome this weakness subjective norm has also been considered in the present study research model. Subjective norm refers to the degree of perceived social influence on travel agents decision to use online marketing of Indian Railways. In this context proposed hypothesis is given below:

**H8: Subjective Norm has a positive impact on attitude towards online marketing of Indian Railways.**

**Indicators of Subjective Norm**

1. People who influence my behavior think I should use it (SN1)
2. People who are important to me think I should use it (SN2)

3.3.13.7 Facilitating Condition (FC)

Facilitating condition has been tested in number of technology acceptance studies (Venkatesh, 2000). In the present study facilitating condition represents the degree of travel agents belief about the availability of required resources like funds, technology,
training and help to use online marketing of Indian Railways. To examine the relation of this construct with attitude the proposed hypothesis is:

**H9: Facilitating Condition has a positive impact on attitude towards online marketing of Indian Railways.**

**Indicators of Facilitating Condition**

1. Specific group for help in difficulties (FC1)
2. Special training given (FC2)
3. Appropriate technology (FC3)
4. Sufficient funds (FC4)

**3.3.13.8 Perceived Risk (PR)**

Now a day's perceived risk is an important determinant in shaping the attitude and intention to use the online services. In case of online transactions individual may perceive various kinds of risks like financial risk, risk of privacy, security etc. In present study perceived risk could be defined as the travel agents perceived lack of privacy, financial risk and security of online transactions. Therefore in the present research following hypothesis could be considered

**H10: Perceived Risk has a negative impact on attitude towards online marketing of Indian Railways.**

**Indicators of Perceived Risk**

1. Online transactions are not secure (PR1)
2. Not safe for monetary transactions (PR2)
3. Lack of privacy (PR3)

**3.3.13.9 Attitude (ATT)**

In TAM model attitude is being defined as the intermediary affective rejoinder between perceived usefulness and ease of use beliefs and behavioral intentions to adopt internet based technologies. In this research attitude represents travel agents positive and negative feelings towards online marketing of Indian Railways that affects the intention to use it. So it can be concluded:
H11: Attitude has a positive direct impact on behavioral intention toward online marketing of Indian Railways.

Indicators of Attitude

1. Using it is a good idea (ATT1)
2. Beneficial in my organization (ATT2)
3. I like the idea of using it (ATT3)
4. Using it is a wise idea (ATT4)

3.3.13.10 Behavioral Intention (BI)

Most of the researches have not concentrated on the relationship between behavioral intention and actual use. But behavioral intention toward actual use or adoption of online technology is an indication of decision maker's readiness to adoption. It can be concluded that behavioral intention is significant predictor of actual use (Taylor and Todd, 1995; Pavlou, 2003). In the present study, behavioral intention refers to travel agents perceived intention to adopt online marketing of Indian Railways. In this reference following hypothesis is formulated.

H12: Behavioral Intention has a positive direct impact on actual use of Online Marketing of Indian Railways.

Indicators of Behavioral Intention

7. It is good to use it in addition to traditional methods (BI1)
8. I will strongly recommend others to use it (BI2)
9. I to use it in near future(BI3)

3.3.13.11 Actual use (AU)

Considering that online marketing in India is still relatively new, it is reasonable for the present study to focus on its adoption. Thereby, the link between behavioral intention and actual use is also being tested in this study.

Indicators of Actual Use

5. I will use it on regular basis (AU1)
6. I will use it frequently (AU2)
Operationalisation

All the indicators of the constructs of TAM will be measured on a five point likert scale ranging from Strongly Disagree = 1, Disagree = 2, Neutral = 3, Agree = 4 to Strongly Agree = 5. This scale is widely used to measure attitude.

3.3.14 To identify the main opportunities for Travel Agents as offered by online Marketing of Indian Railways
Conceptualization

On the basis of review of literature and deep discussion with travel agents, present study has considered following ten variables to identify the major opportunities offered by online marketing of Indian Railways to its consumers

1. Helps in handling large volume of sales
2. Possibility of reduced costs
3. Reaching for new markets
4. Possibility of improved customer services
5. Easy access to information
6. Possibility of improved profitability
7. Increase in customer base
8. Possibility of improvement in the organization’s image
9. Possibility of shortening of supply chain
10. Impetus for new product development

Operationalisation

The respondents will be asked to rank all the opportunities in order of their importance (Rank 1 for most important, 2 for 2\textsuperscript{nd} important and so on up to 10) why they opted for online marketing of Indian Railways.

3.3.15 To identify the major challenges for Travel Agents as posed by Online Marketing of Indian Railways

Conceptualization

In order to identify the main challenges posed by Online Marketing respondents will be presented with a list of following eleven variables.

1. Lack of government support
2. Lack of infrastructure
3. Lack of technology
4. Security
5. Resistance from channel members
6. Lack of training
7. Lack of confidence in the benefits of online marketing
8. Difficulty with integrating online marketing and existing system
9. Lack of skilled employees
10. Threat of disintermediation
11. Lack of funds

**Operationalisation**

The respondents will be asked to rank all the challenges in order of their importance (Rank 1 for most important, 2 for 2nd important and so on up to 11) of the problems faced by them with online marketing of Indian Railways.

**3.3.16 To measure attitude towards criticality of online marketing of Indian Railways**

In order to understand the criticality (importance) of online marketing of Indian Railways for travel agents as a part of their marketing strategies, they were asked to present their attitude regarding the issue on a 4-point scale ranging from 1=Very Critical, 2=Somewhat critical, 3= Not at all Critical and 4= Don’t Know.

**3.3.17 To Appraise the Business Performance of the Travel Agencies after the Adoption of online Marketing of Indian Railways**

The purpose of this issue is to understand the impact of online marketing on the business performance of the travel agency after the adoption of online marketing of Indian railways. To appraise the impact of business performance five performance parameters will be taken namely Sales revenue, Cost of sale, Market share, Customer satisfaction and organizational image. Then the respondents were asked to report their agreement or disagreement, on a five point likert scale ranging from Strongly Disagree to Strongly Agree.

**3.3.18 To determine the effect on Number of Levels of Distribution Channel**

In order to determine the effect of online marketing on the length of distribution channel respondents will be asked to report the changes, in terms of Reduced, No change or increased, after the introduction of online marketing of Indian Railways.
3.3.19 To identify the main reason of Growth of Online Marketing

In order to identify the main reasons for the growth of the online marketing, the respondents will be asked to select suitable reasons of growth out of given six reasons.

3.4 Research Methodology

3.4.1 Research Design

The present research is descriptive and diagnostic in nature as it describes what is happening, why is it happening and possible solution for it via understanding and analyzing attitude of consumers, employees and travel agents towards the various aspects of online marketing of Indian Railways.

3.4.2 Sample Design: The sample design of the present study comprises the following elements:

- **Universe:** Indian Railways
- **Sampling Element:** Online Marketing
- **Sampling Unit:** Based on data provided by Internet Ticketing Reservation Centre of Indian Railways (An undertaking of IRCTC)
- **Area of the study:** India

3.4.3 Nature and Sources of Data: The present study has employed both the types of data primary and secondary according to the requirement of the present study. The primary data has been collected by conducting a survey through six set of structured questionnaires, four for consumers of railway services, one for railway employees and one for travel agents to know their views on various dimensions of online marketing. To analyze the trends of online marketing secondary data has been collected from the records maintained by Based on data provided by Internet Ticketing Reservation Centre of Indian Railways of Indian Railways.

3.4.4 Questionnaire Design: In order to collect the primary data from the target population following six set of structured questionnaires have been constructed:
3.4.4.1 Consumers Questionnaire: - In the light of need of research objectives following four different questionnaires have been structured for consumers:

- **To Measure Attitude:** - It is divided into four sections:
  
  **Section I:** It collects the demographic information about respondents' age, gender, marital status, education, occupation, and income. In addition, it looks for the information related with the internet usage, access to internet and length of using online services of Indian Railways.
  
  **Section II:** It is devoted to measure the different constructs of Technology Acceptance Model i.e. Perceived Usefulness, Perceived Ease of Use, Perceived Enjoyment, Trust, Image, Subjective Norm, Perceived Risk, Attitude, Behavioral Intention and Actual Use on a five point scale.
  
  **Section III:** It contains ordinal (ranking) questions to identify the various opportunities and challenges of online marketing for consumers.
  
  **Section IV:** This section aims to elicit information regarding the adoption and evaluation of various online services i.e. hotel booking, car rental, tour packages, seat availability status, train arrival & departure time, online ticket reservation, fair enquiry, train schedule, frequently asked questions and loyalty programs. The services have been evaluated on a five point scale whereas to know the adoption level an option of not used has also been given.

- **To Measure Online Marketing Service Quality:** - First, it collects the demographic information about respondents' age, gender, education, occupation, and income. In addition, it looks for the information related with the length of using online services of Indian Railways. It is also used to determine respondent's perception on online marketing service quality using 21 items developed on the basis of ESERVQUAL (Parasuraman et al., 2005).

- **To Measure Attitude towards Website:** - For this purpose, feedback form uploaded on IRCTC website is used. It contains 13 aspects of website and customer care quality. The demographic information is collected from the respondents respective registration form.

- **To Examine Factors Resisting the Non-Users to adopt Online Marketing:** First, it seeks information regarding the respondents' demographic details such as gender, age, education, occupation, access to internet, internet usage, income and awareness about online marketing of Indian Railways. It also aims to elicit information regarding
non-users perception towards factors resisting them to use online marketing of Indian railways. Lastly, it attempts to investigate potential future use if online marketing of Indian Railways.

3.4.4.2 Employees Questionnaire: The questionnaire is divided into four sections. The first section belongs to demographic while the second section is dedicated to measure all the constructs of the TAM model. Third section is devoted to identify opportunities and challenges. Finally, fourth section seeks the information regarding their attitude towards readiness to embrace online technology of Indian Railways.

3.4.4.3 Travel Agents Questionnaire: Questionnaire starts with a set of questions related with their annual turnover, establishment, and number of computers, employees and length of using online services of Indian Railways. After that it is devoted to measure the different construct items of Technology Acceptance model. At last questions related with opportunities, challenges and impact of online marketing on their business is asked.

3.4.5 Data Collection

3.4.5.1 Procedure to collect data from Consumers:

To Measure Attitude: Web survey method is used to collect the primary data from the target population. To approach the target population a text link of the questionnaire with the railway ticket booking confirmation mail; is taken from Internet Ticketing Reservation centre. It gives an opportunity to users who have booked their tickets through internet to participate in the survey by clicking on the text link. It's a non random convenience sampling.

The target population of this survey is defined as:

Target population: Travelers who are booking online railway tickets.

Time: 3rd July to 17th August of 2010.

Sampling: Online sampling (Non random).

785 users filled the questionnaire out of which 18 were incomplete and excluded from the analysis. This yields a response rate of 97.7%. It implies that final sample size for this survey is equal to 767.
**To Measure Online Marketing Service Quality:** - The questionnaire is distributed to the respondents who have participated in the previous web survey measuring perception, belief and attitude of consumers. The questionnaire is sent by e-mail to the target population during the month of July and August 2010. Totally 787 questionnaires were mailed to potential respondents, and 158 of the 787 individuals replied at a response rate of 20.08 percent. Among 158 questionnaires, 8 incomplete questionnaires were removed from the further analysis. The remaining 150 responses formed the basis of the present study.

**To Measure Attitude towards Website:** - Secondary data is collected from the Based on data provided by Internet Ticketing Reservation Centre of Indian Railways of Indian Railways. Target population for this purpose is users IRCTC website. Data is collected during the month of March, 2010. During this period 2449 users filled the feedback form of IRCTC website. So the final sample size for this objective is 2449.

**To Examine Factors Resisting the Non-Users to adopt Online Marketing:**
Sampling unit for this survey is non users of online marketing of Indian railways. Convenient and judgment sampling technique is being followed for the administration of the survey. The questionnaires are distributed personally or via email to the target sample. Totally 156 individuals filled the questionnaires. Among 156 questionnaires, 12 incomplete questionnaires were removed from the further analysis. The remaining 144 responses formed the basis of this study.

**3.4.5.1 Procedure to collect data from Employees:** The population of interest is defined as the employees’ of Based on data provided by Internet Ticketing Reservation Centre of Indian Railways of Indian Railways Department. The present study limited the sampling frame to Based on data provided by Internet Ticketing Reservation Centre of Indian Railways as most of the online marketing activities of Indian Railways is being operated from there only. In order to conduct a self administered survey among the employees a written permission is sought from the Deputy General Manager of Indian Railways department. Finally the permission was granted on 16th September 2010.

The target population of this study is defined as:
**Elements:** Employees of Indian Railway Department
Sampling Units: Based on data provided by Internet Ticketing Reservation Centre of Indian Railways (IRCTC)

Extent: Executive employees dealing with online marketing of Indian railways

Time: 19th September and 20th September of 2010.

Sampling: Convenience sampling

Convenience sampling technique is being employed in the present study. The total number of employees in Based on data provided by Internet Ticketing Reservation Centre of Indian Railways is about 150. So it was decided to distribute the questionnaire to all the employees on the basis of convenience and to those who are willing to fill the questionnaire. Total number of questionnaires distributed was equal to 130, from which 110 respondents returned the questionnaire. Out of 110 filled questionnaires 17 were incomplete and excluded from the analysis. This yields a response rate of 78%. This means that final sample size for this study is equal to 93

3.4.5.1 Procedure to collect data from Travel Agents: Electronic mail survey method is employed to collect the primary data from the travel agents. The target population in this survey is the registered travel agents with IRCTC to use the online services of Indian Railways. To approach the target population an emailer facility from IRCTC is hired during the month of August. IRCTC has sent an email to 500 travel agents containing the text link of the website where the questionnaire is being posted. It gives an opportunity to registered travel agents of online services of Indian Railways to participate in the survey by clicking on the text link. It is a non random online convenience sampling. 68 travel agents filled the questionnaire out of which 7 were incomplete and excluded from the analysis. This yields a response rate of 12.2%. It implies that final sample size for this survey is equal to 61.

3.4.6 Statistical Analysis Techniques

3.4.6.1 Structural Equation Modeling

Structural Equation Modeling (SEM) technique will be used to analyze Technology Acceptance Model (TAM). It is a second generation data analysis technique which meets recognized standards for high quality statistical analysis (Gefen, 2000). SEM has a capability for simultaneous analysis differs greatly from most first generation
regression models such as linear regression, ANOVA, and MANOVA, which can analyze only one layer of linkages between independent and independent variable at a time. SEM enables researchers to answer a set of interrelated research questions in a single, systematic and comprehensive analysis by modeling the relationships among multiple and dependent constructs simultaneously. (Karami, 2006).

Structural Equation Modeling technique will be performed by using AMOS 18 to analyze the data. SEM is combination of two approaches to model fitting: measurement approach of factor analysis and structural approach of multiple regression analysis. The measurement model specifies how the latent variables or hypothetical constructs are measured in terms of the observed variables, and it describes the measurement properties (validities and reliabilities) of the observed variables. The structural equation model specifies the causal relationships among the latent variables and describes the causal effects and the amounts of unexplained variance.

To check the reliability cronbach’s alpha (α) will be calculated which the most common measure of scale reliability is. In various articles and books it is being reported that cronbach’s alpha value above 0.7 is an acceptable value; lower values indicate unreliable scale.

**Model Evaluation**

In order to achieve the objective to measure perception, belief and attitude, the measurement model through confirmatory factor analysis and statistical tests to establish the validity and reliability of the survey will be performed. Second, the structural model will be analyzed to test the hypothesized relationship among different factors presented in the model.

**Measurement Model**

The measurement model of all the constructs will be assessed individually with the help of confirmatory factor analysis.

**Measurement Model fit:** Measurement model fit may be assessed on the basis of goodness of fit indices and badness of fit indices. Good of fit indices indicate how well the specified model fits the observed or sample data, and so higher values of these measures are desirable. Measures that are commonly used are the goodness-of-fit index (GFI) and comparative-fit-index (CFI).
GFI is an absolute fit index and CFI is an incremental fit index. Higher values in the 0.90 range are considered acceptable for GFI and CFI.

On the other hand, badness-of-fit indices measure error or deviation in some form and so lower values on these indices are desirable. The commonly used badness-of-fit measure is root mean square error of approximation (RMSEA). Root mean square error of approximation (RMSEA) examines the difference between the actual and the predicted covariance, i.e. residual or, specifically, the square of the mean of the squared residuals. A RMSEA value of ≤0.08 is considered conservative.

Finally it may be concluded that fit of the model will be evaluated on three different indices goodness-of-fit index (GFI), comparative-fit-index (CFI) and root mean square error of approximation (RMSEA).

3.4.6.2 Multidimensional Scaling

Multidimensional scaling is a class of procedures for representing perceptions and preferences of respondents spatially by means of visual display (Malhotra, 2008). This technique will be used to identify major opportunities and challenges of online marketing of Indian railways. It will also be used to obtain consumers perception towards website service quality. SPSS 16 version will be used to perform ALSCAL MDS.

3.4.6.3 Factor Analysis

Factor analysis is a class of procedures primarily used for data reduction and summarization (Malhotra, 2008). In the present study Principal component Analysis with Varimax rotation will be performed via SPSS 16 version to identify various dimension of service quality.

3.4.6.4 Time Series Analysis: It is used to study the trends of Online marketing of Indian railways.

3.4.6.5 One way ANOVA

The Analysis of variance technique is used when the independent variables are of nominal scale (categorical) and the dependent variable is metric (continuous), or at least interval scaled (Nargundkar, 2010). In the present study One-way ANOVA is
performed to examine the significant difference among three categories of intention to use online marketing of Indian Railways.

3.4.6.6 Percentage, Frequencies, Mean and standard deviation

3.4.7 Reliability and Validity

3.4.7.1 Convergent Validity: The convergent validity of the measurement model of the construct will be assessed by examining the score of standardized regression coefficients between construct and its indicator. At a minimum, all factor loadings should be statistically significant and higher than 0.5 (Malhotra 2009). High loadings ensure that all indicators are measuring the same construct.

3.4.7.2 Construct Reliability: To assess the internal consistency of the construct cronbach’s alpha values will be calculated. The proposed threshold value for confirmative research: Cronbach alpha > 0.700. Values must not be lower than .600 (Cronbach 1951).

3.5 References


